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ACCLOGWING: Bridging the gap between today and the future

By Cmdr. Allen Blaxton and Lt. Bryan Clower,
COMMACCLOGWNG

The E-2 and C-2 Type Model Series (T/M/S) are working with the Naval Aviation Enterprise (NAE) and industry to sustain legacy aircraft while developing new ones. Over the past few months, great strides have been made to meet both of these challenges; each task requires communication and cooperation across all levels of the stakeholder chain. The following cases illustrate the success of this collaboration.

E-2D Transition

After successfully completing a Milestone C review on June 15, Northrop Grumman Corporation's E-2D Advanced Hawkeye Program has received approval to proceed with production. This is a significant step forward for the future of the E-2 community and the NAE as a whole.

Two Low-Rate Initial Production (LRIP) Lot 1 aircraft and an advanced acquisition contract for two LRIP Lot 2 aircraft follow the initial E-2D Advanced Hawkeye system development and design contract, which has been in work since August 2003.

Initial E-2D aircraft are moving through the production process at a manufacturing facility in St. Augustine, Fla., and are on track to be delivered as the pilot production aircraft in 2010. Initial fleet induction is expected to follow in 2011.

"For over 40 years, the E-2 has been the lynchpin of airborne early warning and command and control," said Capt. Shane

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An E-2C Hawkeye assigned to the Wallbangers of Carrier Airborne Early Warning Squadron (VAW) 117 makes an arrested landing during flight operations aboard the aircraft carrier *USS Nimitz* (CVN 68) on July 27. *Nimitz* and Carrier Air Wing (CVW) 11 were conducting operations off the coast of Southern California in preparation for a scheduled deployment to the western Pacific Ocean. (Photo by Mass Communication Specialist 3rd Class Peter Merrill/Navy.mil)

TACAMO presents common, unique issues at BoG

By Jacquelyn Millham, Current Readiness/
Enterprise AIRSpeed Public Affairs

All naval aviation activities face similar readiness degraders, including manpower and training shortfalls, material availability, aging aircraft and obsolescence issues. The TACAMO (Take Charge and Move Out) community is no different; however its aircraft type, primary aircraft authorization, and mission requirements set it apart, often requiring custom courses of action for resolution.

NAE leadership attendees heard first-hand about E-6B Mercury issues during a “Boots-on-the-Ground” site visit at Tinker AFB, Okla., hosted by Strategic Communications Wing ONE (SCW-1) on July 8. Rear Adm. Richard O’Hanlon, Commander, Naval Air Force Atlantic; Rear Adm. Mark Guadagnini, Commander, Chief of Naval Air Training; and representatives from Center for Naval Aviation Technical Training (CNATT), Naval Air Systems Command (NAVAIR), Navy Inventory Control Point (NAVICP), Defense Logistics Agency (DLA) and contract services attended the event.

Fleet Air Reconnaissance Squadrons THREE and FOUR (VQ-3 and VQ-4) comprise the war fighting element of SCW-1, and operate a fleet of 16 Boeing 707 derivative aircraft to support U.S. Strategic Command tasking. The TACAMO team established a community training triad; and, working with NAE partners Fleet Replacement Squadron VQ-7 and the CNATTU detachment, identified and addressed barriers from multiple fronts.

While the wing rating fit of 88.6 percent is close to the NAE average of 91 percent, their Navy Enlisted Classification (NEC) Fit is 72.8 percent. Most of the gap is attributed to junior Sailor advancement, which resulted in an apprentice and journeyman manning imbalance. Optimized



A junior TACAMO Sailor (right) demonstrates how TACAMO maintainers manually actuate an E-6B engine variable bleed valve (VBV) gear shaft to determine whether or not it needs maintenance. VBVs, which control the engine’s airflow quantity to the compressor, were identified by maintainers as a primary component that shortened the lifecycle of engines. This simple procedure reduced unscheduled maintenance caused by damaged VBVs by more than 60 percent. Photo by MC2 Jessica Vargas.

class schedules were developed to more efficiently complement new student training requirements, an avionics technician journeyman pilot course was introduced, and additional aviation mechanic’s and electrician’s mates courses have been scheduled to meet increased squadron training requirements. In addition, SCW-1 currently has 42 partial tour (12 months) apprentice-level technicians on board, which precludes accomplishment of a normal training continuum. This is now an action item being addressed by the TACAMO team as well as the Total Force Cross-functional Team.

TACAMO also is working closely with Navy and Air Force depot-level activities to mitigate issues associated with the aging Boeing 707 aircraft. Several working groups have been convened, including an obsolescence working group, engine life cycle sustainment working group, maintenance action group, system safety working

group, a Milstar (satellite) working group and a weight management working group. The teams are comprised of multiple disciplines and their cross-functional approaches have reaped huge benefits in life-cycle sustainment and in assuring that strategic capabilities continue to out pace threats.

Two software development initiatives to improve maintenance planning were highlighted during the site visit. The on-site Fleet Support Team (FST) developed an E-6B Report Card, a software tool that mines and integrates data from numerous maintenance and supply sources to provide TACAMO leadership a macro perspective on aircraft health. The product integrates information from all three maintenance levels and identifies material failure, cost data, maintenance man-hours and operational impact. In addition, an

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events-based maintenance software tool is in development and will be ready to beta test early Fiscal Year 10. This tool will enable managers to project aircraft maintenance requirements and incorporate specific support actions into scheduled maintenance intervals.

While TACAMO has not received AIRSpeed training, continuous process improvement is being applied throughout their commands. For example, VQ-3 maintainers found that the potable water system periodic testing was inadequate and leaks were not detected in a timely manner. The leaks often resulted in ice build up on servicing panels, causing severe damage that required repair by depot artisans at a cost of \$60,000 to \$70,000 a year. Their analysis led to additional inspections in the 84-day maintenance requirements card deck which in turn reduced damages on all aircraft in the wing.

Another example of TACAMO process improvement is their production of video job performance aids (JPAs) and the introduction of new test equipment in the flap rigging process. After recent digital cockpit upgrades, publications were updated to include stricter rigging tolerances; however the prescribed analog test equipment could not provide the proper level of accuracy. Squadron maintenance personnel identified an off-the-shelf digital protractor, and after FST review, the new equipment was added to the tool chest. In addition, JPAs were also incorporated into the testing and repair process to simplify and more accurately depict proper maintenance procedures.

One unique feature of the command that was brought to the attention of NAE leadership is TACAMO's combined bachelor quarters (CBQ) and Liberty Zone. Although TACAMO is fully inte-

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Gahagan, Hawkeye Greyhound program manager (PMA-231). "With the support of our industry partner, and all of the companies that comprise Team Hawkeye, we are ensuring that the E-2 will remain that lynchpin well into late in this century."

The E-2D Advanced Hawkeye, with its cutting-edge AN/APY-9 Electronic Scan Array (ESA) radar, provides the warfighter with an expanded view of the battlespace and increased situational awareness required for today's and tomorrow's mission. The Milestone C review solidifies the nation's commitment to the E-2D's role in the future of Naval Aviation.

Continued support for E-2C and C-2A legacy platforms

As aging platforms, the E-2C and C-2A face many challenges related to parts obsolescence and the overall level of support that legacy components require. Recently, through collaboration across the NAE, two visits to BF Goodrich in Cleveland, Ohio, were made by a wide range of community stakeholders. The objective of these visits was to explore creative solutions to landing gear

grated with the Air Force, it maintains and staffs its own enlisted quarters and recreational facilities to provide a naval environment to and promote camaraderie among its Sailors.

BoG attendees and TACAMO leadership also discussed potential scheduling for Sailor and artisan training on AIRSpeed toolsets. Representatives from the NAE encouraged the wing to access White and Yellow Belt courses on Navy Knowledge Online and suggested they contact the Air Force regarding Black Belt support.

As a tenant on an Air Force Base with permanent detachments in three separate naval regions, SCW-1 faces facilities challenges not normally encountered by a functional wing. Obtaining space in a recently closed General Motors plant and the funding for renovation is high on the TACAMO

supply issues. The first visit, made in May 2009, focused on determining what engineering options may be available for reworking landing gear at Goodrich's facilities. The second visit, made in June 2009, identified the specific actions that are required to initiate the process of reworking landing gear components; resources that would have otherwise been deemed beyond repair and submitted to the Defense Reutilization and Marketing Office process.

Several options were identified that Goodrich and Fleet Readiness Center Southwest can take to alleviate component supply shortages. Additionally, the lessons learned from this experience will be applied directly to the E-2D lifecycle management plan to ensure that these crucial parts are fully supported throughout the life of the E-2D.

Through NAE collaboration and an outreach to industry, the ability to generate ready-for-issue landing gear components has been significantly improved. The result of these actions will help to minimize the potential impact of what has become a significant future readiness concern. ■

priority list. The added space will accommodate much needed contractor logistics support warehousing.

Another facility initiative is their Program Objectives Memorandum (POM) 12 military construction request to build an additional hangar bay. Current hangars house four of their 16 aircraft, and with increases in enhanced phase maintenance requirements, extensive modification schedules and anticipated aging aircraft maintenance requirements, the additional bay will significantly improve and sustain operational readiness.

NAE representatives took these issues back to their commands for further examination and possible resolution. ■

CMMI and LSS: Exploring the simultaneous use of complementary approaches

By NAVAIR AIRSpeed Communications

Naval aviation professionals have used Six Sigma and Lean to reduce variation and waste in existing processes since 1999. But for more than 20 years, Naval Air Systems Command (NAVAIR) software engineers have used the Capability Maturity Models (CMM), and more recently, Capability Maturity Models Integration (CMMI) to ensure that processes are in place to help complete projects.

An increasing number of CPI experts say that CMMI and LSS should be used together to help enhance certain software-related process improvement efforts. Users of both improvement methodologies recently began to explore ways to combine both toolsets to reach their goals, and to plan the way forward for better coordination of efforts across the command.

More than a dozen professionals from Point Mugu, Calif., Wright Patterson Air Force Base, the Joint Strike Fighter team in Crystal City, Va., Eglin Air Force Base and other Patuxent River offices participated in a June 17 telephone conference.

CMMI aids an organization in selecting processes to improve, based on a comparison to best practices in industry, pointing toward what needs to be worked. Lean and Six Sigma show organizations exactly how to accomplish the goals that they've already established using CMMI, said Katie Smith, a Black Belt and NAVAIR CMMI instructor

who helped facilitate the meeting. In many cases, Smith said, "the tools are natural complements."

Debra Borden, a software engineer and Master Black Belt who also participated in the discussion, said that LSS shows whether an organization's processes add value by helping to achieve the overall goals of the organization. LSS can show these groups how to improve or eliminate factors affecting their progress.

"I think the meeting was worthwhile," said Al Kaniss, a branch head in the NAVAIR software engineering department. "The light finally lit for me on the nexus between CMMI and LSS."

"I thought the dialogue went well," said Robin Goebel, NAVAIR AIRSpeed chief of staff.

Recognizing the need for more innovation, participants requested a forum for additional talks about the relationship between CMMI and

LSS after the June meeting. A tentative venue is the Software Process Improvement Community of Practice (SPI CoP) meeting in China Lake, Calif., Sept. 9-10.

People have needed to have this discussion for a long time, Smith said. Using both toolsets could help teams reach their goals and make sure their efforts count, she said. "This is huge." ■

CMM is a methodology and an appraisal model used to define process improvements for information technologies. There are five levels of maturity in software development: initial, repeatable, defined (institutionalized), managed and optimizing (continuous process improvement). There are five key process areas within these levels and five measures for each area. CMMI combines variants of CMM.



Tomorrow's green energy source?

The Naval Air Systems Command (NAVAIR) fuels team is gearing up for bio-fuels flight tests in an F/A-18 Super Hornet at Patuxent River, Md., by next spring or summer, according to NAVAIR's Rick Kamin, Navy fuels lead. The Navy fuels team is also getting ready to kick off a similar effort to test and certify biofuels for use on ships.

The upcoming tests are part of a larger effort to test and certify promising biofuels in support of the Navy's energy strategy to enhance energy security and environmental stewardship, including reducing greenhouse gas emissions.

Read the full article on NAVAIR's web site: http://www.navair.navy.mil/press_releases/index.cfm?fuseaction=home.view&Press_release_id=4155&site_id=20

At left, algae is being cultivated in a bioreactor using modern fermentation and production techniques to produce large quantities of fuel oil. (Photo: Solazyme, Inc.)

Links of interest

1. NAVAIR AIRSpeed Snapshots – June 2009

Read how the E-2/C-2 functional check flight (FCF) failure was resolved and how AIRSpeed accelerated the acquisition process and improved Helicopter Egress System Program management.

<http://www.cnaf.navy.mil/airspeed/content.asp?ItemID=1430>

2. Diversity Remains a Top Priority for CNO

An article on the memorandum of agreement that formalizes the Navy's relationship with the Naval Officers Mentorship Program Asian American Government Executives Network to develop, implement and improve strategies for mentoring a diverse, next generation of officers.

http://www.navy.mil/search/display.asp?story_id=46514

3. DoN CPI-Gram newsletter

This edition features information on DoN's Beneficial Suggestion Program and projects for replication.

https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/CPI%20News/DoN%20CPI-Gram%20newsletter%20-%20Posted%20May%202009.pdf

4. The CRO's Nest (Surface Warfare Enterprise Chief Readiness Officer newsletter)

Improving frigates, network security, and Enlisted Distribution and Verification Report management are featured in this edition.

https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/CPI%20News/CROs%20Nest%2013%20-%20July%202009.pdf

5. Headlines from around the fleet

Chief of Naval Operations Admiral Gary Roughead speaks at the National Naval Officers Association conference; Chief of Naval Personnel Vice Adm. Mark Ferguson talks about diversity in his latest podcast.

<http://www.navy.mil/swf/mmu/mmplyr.asp?id=12913>

6. Rhumb Lines

- **CNO Monthly Update - July 2009**

A synopsis of the CNO's priorities for fiscal year 2010.

https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/Rhumb%20Lines/CNO%27s%20%20Monthly%20Update%20-%20%2002%20JULY%202009.pdf

- **Navy Diversity**

Read about the Navy's diversity efforts.

https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/Rhumb%20Lines/Navy%20Diversity%20-%2026%20June%202009.pdf

- **Developing Sailors for the 21st Century Navy**

Several initiatives are in place to assist Sailors with career management.

https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/Rhumb%20Lines/Developing%20Sailors%20for%20the%2021st%20Century%20Navy%20-%2018%20June%202009.pdf

- **FY10 Department of Navy Posture**

Talking points on the status of the Navy today and what will be needed for tomorrow.

https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/Rhumb%20Lines/FY10%20Department%20of%20Navy%20Posture%20-%2015%20June%202009.pdf

- **Learning and Development- Preparing Sailors for Success**

A synopsis on life-long learning opportunities for Sailors.

https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/Rhumb%20Lines/Learning%20and%20Development-%20Preparing%20Sailors%20for%20Success%20-%2017%20June%202009.pdf