

# Current Readiness & Enterprise AIRSpeed Newsletter



Volume 11, Issue 1

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## Today's investments in F/A-18s assures its continued service into the next decade

By the F/A-18 TMS Community

Since its fleet introduction in 1983, the F/A-18 Hornet has defined the role of the modern carrier-based, multi-mission, fighter/attack aircraft. Today, the Navy is in the process of transitioning older models of the Hornet to the

F/A-18 E/F Super Hornet, while the Marine Corps has chosen to extend the service life of the F/A-18 A, C, and D models until full transition to the F-35B Lightning II. Together, the Navy and Marine Corps F/A-18 community

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Third Marine Aircraft Wing's first F-35B taxis in Nov. 16 on the Marine Corps Air Station Yuma flightline. The new weapon system will eventually replace the Corps' aging legacy tactical fleet of AV-8B Harriers, F/A-18 Hornets and EA-6B Prowlers. Photo by Lance Cpl. William Waterstreet/Marines.mil

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Want to know more about NAE issues, actions, and results?

Take a look at the  
**NAE Efficiencies Repository**

*The Naval Aviation Enterprise (NAE) Efficiencies Repository is a database that documents quantitative and qualitative benefits, provides for a rough order of magnitude estimate for potential efficiencies and promotes the Enterprise's culture of transparency. Managed by the Integrated Resource Management Team and updated each quarter principally by the cross-functional teams, the repository is an important tool that the NAE uses to identify and reduce total ownership costs for legacy and transitioning weapons systems. Users can read descriptions on type/model/series, total force/personnel, aircraft carrier and ordnance issues; solutions; and their impact to the fleet. The database, which contains entries back to 2010, can be accessed [here](#). (Note: This is a CAC-enabled link.)*

## 2012 EAS CPI Excellence Awards nominations announced

Enterprise AIRSpeed is celebrating its 10<sup>th</sup> year of developing and applying process improvement solutions to Naval Aviation logistics. The synopses that follow are from nomination packets submitted to the Maintenance and Supply Integration Performance Improvement Branch (PIB) for the sixth Enterprise AIRSpeed Continuous Process (CPI) Excellence Awards. This year's submissions include nominations from four overseas sites, two ships and one joint reserve activity. The PIB also received five nominations in the Leadership Award category – a first in the award's history. Read how the nominees applied CPI to meet challenges associated with funding, manpower and the transition to new capabilities. The winners are scheduled to be announced on or about January 31.

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accounts for more than 50 percent of Naval Aviation's operational budget. For the Marine Air-Ground Task Force Commander, the F/A-18 provides anti-aircraft warfare, offensive air support; and aerial reconnaissance on F/A-18Ds equipped with the Advanced Tactical Airborne Reconnaissance System. Currently, there are 11 active duty and one reserve Marine Fighter Attack (VMFA) squadron in the Marine Corps, each with a flight line entitlement of 12 in reporting status aircraft. VMFA(AW) -121 recently gave up its Hornets to be redesignated as the first F-35B squadron in the Marine Corps.

When the F/A-18 was first introduced, it quickly gained a reputation for reliability and ease of maintenance. As of July 2012, almost 30 years later, 76 percent of Marine Hornets are beyond their original design service life of 6,000 flight hours, and like any other aging platform, require a significant amount of extra work to maintain combat serviceability.

With at least another decade of service required from Marine Hornets before the F-35B transition is com-



Cpl. Jonathan Carr, Marine Fighter Attack Squadron (VMFA) 251 airframes maintenance technician, takes apart an aircraft's landing gear while aboard aircraft carrier *USS Enterprise* Sept. 1. The aircraft is currently being inspected for any damaged caused by a hard landing. VMFA-251 was the last Marine squadron to be attached to *USS Enterprise* before its decommissioning after more than 50 years of service. Photo by Cpl. Rubin J. Tan/Marines.mil

plete, it is not enough to simply continue flying; it is imperative to maintain a common capability baseline that ensures that Marine Hornets remain both *available* and *combat effective*.

By the fall of 2011, the Marine

Corps VMFA Type/Model/Series (TMS) Team had decided to focus on two principal areas for the upcoming series of Naval Aviation Enterprise (NAE) briefings: the high number of out of reporting status (OORS) aircraft undergoing depot-level maintenance, and systems reliability issues affecting the operational availability of the aircraft on the flight line. Within each area, issues were identified using the same standard methodology: identify the gap drivers, establish the root causes, and develop action plans to mitigate them. Any issues that required external assistance to drive successful action were targeted for briefing to the Deputy Commandant for Aviation and to Commander, Naval Air Forces (CNAF), also called "The Air Boss."

In conjunction with Navy Strike Fighter Squadron (VFA) counterparts, a collective decision was made to present a unified approach across the Navy and Marine Corps Hornet and Super Hornet communities, based on

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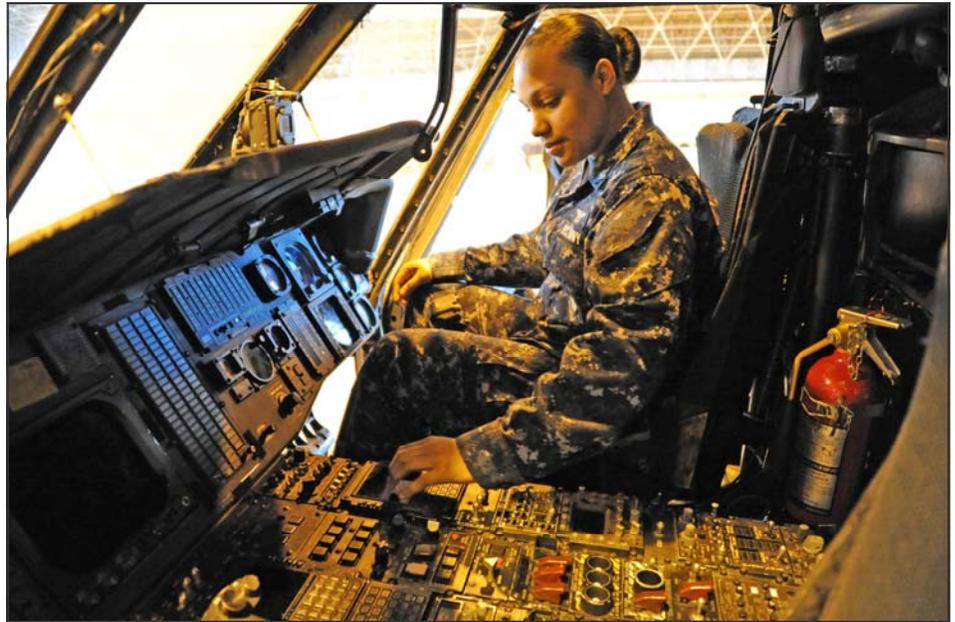


Marine Fighter Attack Squadron 115 maintainers prepare an F/A-18 hornet to complete its 9,000 flight hour aboard Marine Corps Air Station Beaufort, Nov. 13. The squadron's maintainers ensure the aircraft continue flying and are responsible for the squadron maintaining the highest state readiness to deploy forward. Photo by Cpl. Justin M. Boling/Marines.mil

## 2012 EAS Site of the Year nominations

### **C**ommander Fleet Air Forward Aircraft Intermediate Maintenance Detachment Atsugi, Japan

- The Support Equipment Gas Engine Branch found that the repair cost per tow tractor increased from by more than \$23,500 and that the constant repairing of the tractors caused a 21 percent gap in their availability. By developing a measles chart, a graph that listed 30 points of inspection required before the tow tractors were issued to squadrons, the branch reduced the cost of repair by 50 percent and eliminated the availability gap.
- Support Equipment (SE) maintainers spent an average of 20 to 40 minutes trying to locate support equipment for maintenance and the Issue and Receipt office found it difficult to locate gear available for issue. A rapid improvement event (RIE) resulted in the development of a "Ouija board" (a model that represented the location of SE) which enabled work centers and Production Control to work in concert with each other. Not only was check-in/out process time of SE reduced by 10 minutes, it also enabled maintainers to properly schedule repairs and perform periodic maintenance on time.
- The most significant process improvement event was an RIE in the Joint Aeronautical Screening Unit (JASU). JASU personnel were overwhelmed with maintaining multiple databases and a repair process that fixed parts based on maintainers' convenience rather than when they were inducted. Parts were not stored in a central location and their maintenance history was not



Aviation Electronics Technician 2nd Class Laticia Watson checks the operating and navigation systems inside the cockpit of an HH-60H Sea Hawk helicopter in the hangar for Helicopter Anti-submarine Squadron (HS) 14 in this photo dated Jan. 8. Watson was recognized as Sailor of the Week during the filming of the base's weekly Captain's Call show. Sailor of the Week is a title granted to different Sailors on board Naval Air Facility Atsugi that have shown exemplary skill and work ethic within their shop and rate. Commander Fleet Air Forward Aircraft Intermediate Maintenance Detachment Atsugi supports HS-14. (Photo by Mass Communication Specialist 3rd Class Kegan E. Kay/Navy.mil)

readily available. Not only did personnel from JASU and other work centers work to reduce the backlog of parts, the RIE team also established a "first-in, first-out" repair process and developed the JASU Management Tool which incorporated all of JASU's processes and became a single-point tracking system for parts. The application provides trend analysis, keeps a time stamp on each part, and provides real-time reports on all parts and their statuses as it relates to JASU.

### **C**ommander Fleet Air Forward Detachment, Aircraft Intermediate Maintenance Detachment Misawa, Japan

- An RIE was conducted on the Maintenance Training Program to address the documentation of maintenance training in the Advance Skills Management System (ASM). (ASM is a web-based system that provides the capability to identify individual maintenance task requirements, perform real-time assessments, identify training deficiencies and access training tools.) The RIE revealed that repeat discrepancies for training documentation attributed to more than 47 percent of overall audit discrepancies. Based on this data and by identifying non-value processes, 22 steps and 43 hand-offs were eliminated and the AIMD realized a cost avoidance

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Aviation Electronics Technician 2nd Class Sean Corcoran, assigned to Patrol Squadron (VP) 10, secures the tie-down chain on a P-3C Orion at Naval Air Facility Misawa in this photo dated Jan 11. VP-10 is currently deployed to Naval Air Facility Misawa in support of the U.S. 7th Fleet area of responsibility. (Photo by Mass Communication Specialist 1st Class Alfredo Rosado/Navy.mil)

*(Site continued from Page 3)*

of more than \$1,800.

- A Six Sigma black belt project in the Propeller Component Repair Shop on the valve housing and pump housing resulted in a 50 percent reduction in time to reliably replenish (TRR) for the former and a 52 percent reduction for the latter. This was accomplished by permanently assigning an aviation electrician to the work center, procuring new workbenches that facilitated improved flow and a new roll-around box containing all tools necessary to complete repairs.

## **F**leet Readiness Center Southeast

- Jacksonville's Support Equipment Electrical Repair Branch acquired the capability to repair the NC-10 and Mobile Electric Power Plant's AC voltage regulators, resulting in a cost avoidance of more than \$101,500 in one fiscal year and a projected savings of approximately \$610,000 over the next five years. The component's TRR was reduced by an average of 66 percent. This was accomplished by merging non-critical process steps, better management of sub-component inventories, a reduction in unnecessary movement, and the elimination of the need to repair the component by an off-site manufacturer.
- Mayport's Structures Shop identified the unavailability of a sub-component – the spherical bearings – as the reason why blade retention bearings exceed its maximum allowable TRR. The team elevated this bottleneck by obtaining another supply source from the Army which was not previously authorized because of purchasing constraints. Once approval to use the alternate part number was acquired, the TRR was reduced by almost 94 percent. The solution also provided 50 percent more capacity than required.
- FRCSE decreased its number of Y-codes from more than 40 (38 at Jacksonville and four at Mayport) in 2011 to only 17 returns for rework for both sites in 2012. (A Y-code describes a piece of equipment deemed ready-for-issue by an intermediate maintenance activity but was found to be defective when installed and tested on an aircraft.) This was achieved by institutionalizing the need for higher quality in its processes which included removing unnecessary process steps or merging

non-critical steps, reducing the number of potential chances for a defect, reallocating time to other work, reducing TRRs, and by focusing efforts at the most critical-to-quality steps within its processes.

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## **F**leet Readiness Center Mid-Atlantic Site New Orleans

- The Rotor Dynamics Branch decreased the 90th percentile TRR for the coupling assembly by 59 percent. Maintainers resized the coupling assembly's pre-expenditure bins high/low limits to protect it from excessive wait time for parts.

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Aviation Machinist's Mate 2nd Class Othello Adou, assigned to Helicopter Maritime Strike Squadron (HSM) 70, removes a digital electronic control unit from the engine of an MH-60R Sea Hawk helicopter during maintenance aboard the guided-missile cruiser *USS Gettysburg* (CG 64) in this photo dated Oct. 18, 2011. Fleet Readiness Center Southeast supports HSM-70. (Photo by Mass Communication Specialist 3rd Class Betsy Knapper/Navy.mil)

*(Site continued from Page 4)*

- Night vision goggle (NVG) repair turnaround time historically ranged from less than an hour to more than 16 days; turnaround time could vary by as much as 130 hours. Maintainers coordinated with FRC's customers to establish a turn-in schedule, replaced incompatible NVG faceplates, and required Production Control to issue all maintenance action forms for NVGs resulting in a new maximum turnaround time of less than two days. The NVGs turnaround time range was reduced by more than 66 percent.
- By establishing a turn-in schedule for bad image intensifiers to the manufacturer, the FRC reduced its operating expenses. Not only will the command realize a cost avoidance of more than \$2,500 for each image intensifier salvaged by the manufacturer and returned to the work center, but the improvement enabled Naval Supply System Command to instantly meet fleet demand for 37 image intensifiers that were on back order.



Cpl. Joseph S. Lorenzen, a Marine All-Weather Fighter Attack Squadron 225 F/A-18D Hornet airframes mechanic, and Sgt. Frank Gottardo, VMFA(AW)-225 F/A-18D Hornet airframes quality assurance representative and mechanic, troubleshoot a VMFA(AW)-225 F/A-18D Hornet in this photo dated Oct. 25. Marine Aviation Logistics Squadron supports VMFA-225. (Photo by Cpl. Charlie Clark/Marines.mil)

process that consisted of a complete tear-down, cleaning, repair and build-up of all GCU's inducted into the work center. Improvements also include establishing a single piece flow process, developing a standard work repair, and tracking all GCUs by their serial numbers. Not only has the component's TRR been reduced by more than 86 percent over the last three years, but over the last year the RFI rate increased from 78 percent to more than 92 percent, and the beyond capability of maintenance (BCM) rate decreased from more than 25 percent to 14 percent. The CPI initiative resulted in an FY 2012 BCM cost savings/avoidance of almost \$629,000. In addition, the Electrical/Instrument

Branch's GCU best practice has reduced market demand by dramatically increasing its reliability (time-on-wing (TOW)) from an average of less than two months to nearly three years.

- During the past year, Marine Fighter Attack Training Squadron 101's Phase Maintenance Project realized a decrease in phase completion time by eight days, decreased delivery times by 80 percent and cost avoided more than \$32,500. This was accomplished by identifying interdependencies and individual processes that led to an excess number of phase aircraft work-in-progress that exceeded expected phase completion schedules; changing the scheduling and induction process of phase aircraft from a push system to a pull system; identifying time-critical hand-offs of interdependent activities during pre-phase planning and phase maintenance cycles; reviewing the order of Phase Maintenance Sequence Control Cards to identify maintenance flow interruptions within the process; and establishing right-sized phase kit material buffer.

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## Marine Aviation Logistics Squadron 11

- Power Plants Division reduced its TRR by 32 percent through the use of Market Demand-Pull and Drum-Buffer-Rope methodologies. The division has not had a bare firewall since the third quarter of 2005.
- The number of generator control units (GCU) requiring expeditious repairs (EXREPs) decreased 70 percent. This reduction, which was realized in spite of reducing the number of ready for issue (RFI) assets in Supply to due to support of forward-deployed Marine Aircraft Group (MAG) 11 aircraft, was achieved by developing and implementing an overhaul

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## Marine Aviation Logistics Squadron 12

- The Micro Miniature and Cable/Connector Repair Branch work centers piloted MALS-12's command-wide 5S redesign initiative because of their interdependencies with other work centers in the squadron, including avionics, airframes, ordnance, and power plants. The redesign resulted in the development of tailored training to address maintainers' knowledge gaps and the removal of batch processing. As a result, waiting maintenance time of the micro miniature work centers de-

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creased by 66 percent and by 55 percent reduction in the cable repair branch.

- MALS-12 most significant policy change is the implementation of utilizing National Item Identification Numbers (NIINs) and Family Group Code (FGC) times to reliably replenish (TRR) in lieu of the standard work center TRR. With this method, work centers are now able to use the Buffer Management Tool (BMT) to determine which items have the highest priority based on their potential to affect the flight line as an EXREP, not simply looking at a first-in, first-out policy for the work center. NIIN and FGC TRR is computed by looking at past order history against supply's asset quantities to determine an effective TRR for each component. Now work centers and senior leadership are able to proactively look at items with the greatest potential to create the next EXREP1 instead of using the critical Due In From Maintenance report which is more reactive, making BMT a significantly more valuable tool for the work center.
- The Power Plants Division analyzed the number of man-hours spent on preventative maintenance (PM) to determine how to reduce the number of items requiring PM. By identifying seldom-used and obsolete items, maintainers identified and placed 550 components into Level 3 Preservation, PM was reduced by more than 100 hours each month and 69 items were removed from inventory.
- The Power Plants Division also applied 5S, relocating Individual Material Readiness List items and staging them in a centralized location. More than 560 square feet of space were reclaimed, reducing the time required to con-



U.S. Marine Corps Cpl. Richard Sippl, flight crew chief assigned to Marine Light Attack Helicopter Squadron (HMLA) 169, fires a 7.62mm GAU-17/A minigun during a live-fire combat training mission over the Pohakuloa Training Area in and around the Hawaiian Islands during Rim of the Pacific (RIMPAC) 2012 exercise in this photo dated July 22. The world's largest international maritime exercise, RIMPAC provides a unique training opportunity that helps participants foster and sustain the cooperative relationships that are critical to ensuring the safety of sea lanes and security on the world's oceans. Marine Aviation Logistics Squadron 31 supports HMLA-169. (Photo by Air Force Tech. Sgt. Michael R. Holzworth/Navy.mil)

duct quarterly inventory by 50 percent and eliminating the need for the Mobile Maintenance Facilities where the components were housed.

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## **M**arine Aviation Logistics Squadron 39

- By right-sizing inventory based on: forecasting; Defense Logistics Agency demand/stocking criteria; and cross-functional interaction between maintenance, supply and ordnance, MALS-39's 90 percentile TRR average for completed maintenance action forms was less than a day-and-a-half for FY12.
- MALS 39 increased the TOW of the AH-1W Cobra pilot and gunner doors by 75 percent by re-vamping repair procedures. An analysis revealed that squadron

maintainers were removing the doors from the aircraft when cracks were noticed in the frames. Maintainers would remove the glare shield due to explosive ordnance incorporated inside. Metal reinforcements, called "doublers," were removed in the process, resulting in damage to multiple rivet holes requiring additional repairs. Welding the holes warped the door which caused it to fit improperly on the aircraft. Current procedures do not require maintainers to remove the doublers, eliminating the need to patch and weld multiple holes. In addition to the increased time on wing, EXREPs were reduced to only five, Subsystem Capability Impact Reporting (SCIR) hours were reduced to by 54 percent and man-hours associated with rework were also reduced. ■

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# Master Gunnery Sergeant John S. Evancho Innovator of the Year Nominations

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## **S**taff Sgt. Gregory Brinker, AIR-Speed Chief, Marine Aviation Logistics Squadron 12

Brinker was instrumental in Marine Aviation Logistics Squadron's 12's command-wide time to reliably replenish (TRR) redesign. Using data from Subsystem Capability Impact Reporting (SCIR), he identified work centers that had the greatest impact in the command and developed an assessment and implementation plan. He created a database using information from the Naval Aviation Logistics Command Management Information System, Relational Supply and Buffer Management Tool (BMT) that enabled Level 3 TRRs to be determined based upon supply stock setting and induction frequency. Then he matched the Level 3 TRRs with National Item Identification Numbers (NIINS) and Family Group Codes, giving work center supervisors the ability to look at their work loads, determine which components may become expeditious repairs (EXREPs) because of their criticality, and prioritize accordingly.

Brinker also:

- headed up MALS-12's 5S initiative which is projected to reduce the time spent searching for



Sgt. Lauren Colantropo, left, and Cpl. Andrew Allen re-install a forward-looking infrared radar sensor on an AV-8B Harrier assigned to Marine Attack Squadron (VMA) 542 aboard the amphibious assault ship *USS Bonhomme Richard* (LHD 6) in this photo dated Oct. 7. *Bonhomme Richard* was in Subic Bay, Republic of the Philippines, for Amphibious Landing Exercise (PHIBLEX), an annual bilateral exercise with the Armed Forces of the Philippines designed to improve interoperability, increase readiness and develop professional and personal relationships. Staff Sgt. Gregory Brinker's command, Marine Aviation Logistics Squadron 12, supports VMA-542. (Photo by Mass Communication Specialist 2nd Class Michael Russell/Navy.mil)

spare parts, improve section cleanliness, verify shop machinery condition, increase discipline, bring attention to forgotten procedures, and increase morale

among junior and senior Marines and Sailors.

- established a dedicated BMT server at MALS-12 which reduced the application's load time from 15 minutes to less than three minutes.



Cpl. Chris Farinella, assigned to Marine Fighter Attack Squadron (VMFA) 323, performs maintenance on an F/A-18C Hornet in the hangar bay aboard the aircraft carrier *USS Nimitz* (CVN 68) in this photo dated Nov. 7. Staff Sgt. Kenneth Miller, Jr.'s command, MALS-11, supports VMFA-323. (Photo by Mass Communication Specialist 2nd Class Robert Winn/Navy.mil)

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## **S**taff Sgt. Kenneth Miller, Jr., Fixed Wing Aircraft Power Plant Mechanic, Marine Aviation Logistics Squadron 11

Miller was hand-selected by the Marine Aviation Logistics Squadron's (MALS) 11 commanding officer to serve as a subject matter expert during the initial design of the intermediate maintenance activity's (IMA)

(IOY continued on Page 8)



Staff Sgt. Douglas Brown looks through a boresight telescope on an F-16 Fighting Falcon trainer to make sure the M61A1 Vulcan cannon barrels are correctly aligned at Misawa Air Base, Japan, in this photo dated July 2, 2012. As Brown watched the crosshairs of the scope, he instructed another airman to move a collimator so the weapon alignment was accurate. AD1 (AW/SW) Alexander Mowry took part in the U.S. Air Force's 35th Fighter Wing and the Air Force Smart Operations for the 21st Century's Hardened Aircraft Shelter 6S event. (Photo by U.S. Air Force Airman 1st Class Kia Atkins/af.mil)

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Power Plants Division. His experience and contributions were instrumental in MALS-11 retaining its status as the Center of Excellence for first degree F-18 engine repairs. Miller also:

- re-focused efforts on sustaining MALS-11's culture of CPI during a period of high turnover at MALS-11 due to supporting 20 deployments throughout MAG-11. He identified the vital infrastructure required to maintain a CPI culture within the command, established a cadre of division AIRSpeed representatives to monitor CPI sustainment and progress within their respective areas, enabled the AIRSpeed Site Core Team to integrate with MAG-11 Current Readiness, supported Organizational-Level End-To-End implementations, and addressed problems that plagued MAG-11's flying squadrons.
- mentored CPI events at VMFAT-101. He conducted a manpower analysis of Marine Fighter Attack Training Squadron (VMFAT)

101's Maintenance Department, assessed the impact of increasing aircraft assignment, and determined the number of contractor maintenance personnel needed to support the squadron's mission. In order to identify manpower and experience gaps, he reviewed the maintenance demand over the past two years in relation to the manning and experience levels of each production work center. This manpower analysis resulted in 44 new hires for VMFAT-101.

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### **A** viation Machinist Mate 1st Class (AD1) (AW/SW) Alexander Mowry, AIRSpeed Site Core Team, COMFAIRFWD Detachment Aircraft Intermediate Maintenance Detachment, Misawa, Japan

Mowry was requested by the U.S. Air Force's 35th Fighter Wing and the Air Force Smart Operations for the 21st Century (The Air Force's CPI initiative) to assist in its Hardened Aircraft Shelter 6S event to improve responsive combat capability for the F-16 fighter fleet. His efforts improved

the content and layout logistics capability for their Aircraft Ground Equipment inventory. Mowry also:

- reduced the process cycle time by 50 percent in Misawa's Armament Division's 28-day inspection by identifying: wasted movement and unnecessary transportation of components; unproductive assignment of key personnel; and unclear directions and procedures that consumed 106 man-hours spent locating pool assets. He also streamlined the inspection process for the AERO 1A/B and BRU-12/14/15 bomb racks and LAU-117 missile launchers by organizing gear by periodic maintenance due date and establishing a mobile work area. This eliminated the need for movement of personnel from the rack to work spaces.
- Increased the number of Misawa personnel that met CPR and Respirator Program training requirements by standardizing instruction and advertising class schedules to the workforce. As a result, the process cycle time to produce

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CPR instructors was reduced by 50 percent and the time for personnel to gain qualifications on the respirator was reduced from seven days to one day. Not only did the improvements eliminate unnecessary involvement from external commands, but also created a point of use system for portable scanners located throughout the command that facilitate uploading certifications into Advance Skills Management System.



Aviation Machinist's Mate Airman Kenzie Lane checks an SH-60B Sea Hawk helicopter from the Proud Warriors of Helicopter Anti-submarine Squadron Light (HSL) 42, Det. 7, for debris prior to flight operations aboard the guided-missile destroyer USS Jason Dunham (DDG 109) in this photo dated Nov. 19. PR1 (AW) Andrew J. Phipps' command, Fleet Readiness Center Southeast, supports HSL-42. (Photo by Mass Communication Specialist 2nd Class Deven B. King/Navy.mil)

**Aircraft Survival Equipmentman First Class (PR1)AW) Andrew J. Phipps, AIR Speed Core Team Leading Petty Officer, Fleet Readiness Center Southeast**

Phipps was tapped to spearhead the reduction of backlog and beyond the capability of Maintenance (BCM) process time of the LPU-21P life preservers and to remove the fleet readiness EXREP status issues. He developed a scoreboard to depict progress being made command-wide and set up weekly goals for each work center to attain. BCM process time was reduced by more than 50 percent.

Phipps also:

- sponsored a process improvement event in the Structure Shop on the Tailpipe Door Assembly (TDA), directly resulting in 20 percent reduction in BCM and a 86 percent reduction in TRR.

Throughput for TDAs increased by 20 percent and a 66 percent decrease in wait time and cost savings for FRCSE of more than \$34,000 per component were realized. This was achieved by optimizing manpower, rearranging the shop layout, and refitting tool boxes with the appropriate items.

- reduced the Electric Shop's travel and assist time from almost three days to less than an hour - a 94 percent reduction of TRR. This effort, when combined with the reduction in the frequency and wait time for EXREPs, led to an

improvement in supply component availability and the on-time delivery of ready-for-issue items to the customer.

**Staff Sgt. Michael Richard, Intermediate Level Advanced Aircraft Electrical/Instrument/Flight Control Systems Technician, Marine Aviation Logistics Squadron 13**

Richard was personally selected by Headquarters, Marine Corps to serve as a subject matter expert with top Continuous Performance Improvement Management System (CPIMS) administrators to help improve the system. He also:

- served as a mentor/coach on two green belt rapid improvement events and facilitated two rapid improvement events as a black belt Lean practitioner. His efforts lead to the success of 24 work centers meeting their design TRR goals
- is Marine Aircraft Group 13's organizational-level CPI liaison and Site Core representative. ■



An AV-8B Harrier with Marine Attack Squadron 311, part of the Air Combat Element of the 31st Marine Expeditionary Unit, lands on the USS Essex (LHD 2), in this photo dated March 6. The pilots of VMA-311 were conducting night carrier landing qualifications in preparation for the 31st MEU's Certification Exercise. Staff Sgt. Michael Richard's command, Marine Aviation Logistics Squadron 13, supports VMA-311. Photo by U.S. Marine Corps Cpl. Garry J. Welch/Marines.mil

# Enterprise AIRSpeed Leadership Award Nominations

**C**hief Aviation Support Equipment Technician James E. Bibow, continuous process improvement chief petty officer (CPI LCPO), *USS Theodore Roosevelt* (CVN 71)

Bibow mentored 15 CPI events aboard Theodore Roosevelt resulting in a cost savings of \$145,000, a cost avoidance of \$290,000 and man-hour reductions of more than 9,200 hours. Bibow:

- decreased the Reactor Department supply chain's long lead wait time from six weeks to two hours
- developed the Light Industrial Facility (LIFAC) Induction System Administration (LISA) that enables Sailors to track repairs and give statuses in real time. LISA also notifies department and chain of command when repairs are completed by email and text message
- created the Simplified Accounting Management and Micro-purchase Interface which provides an auto-



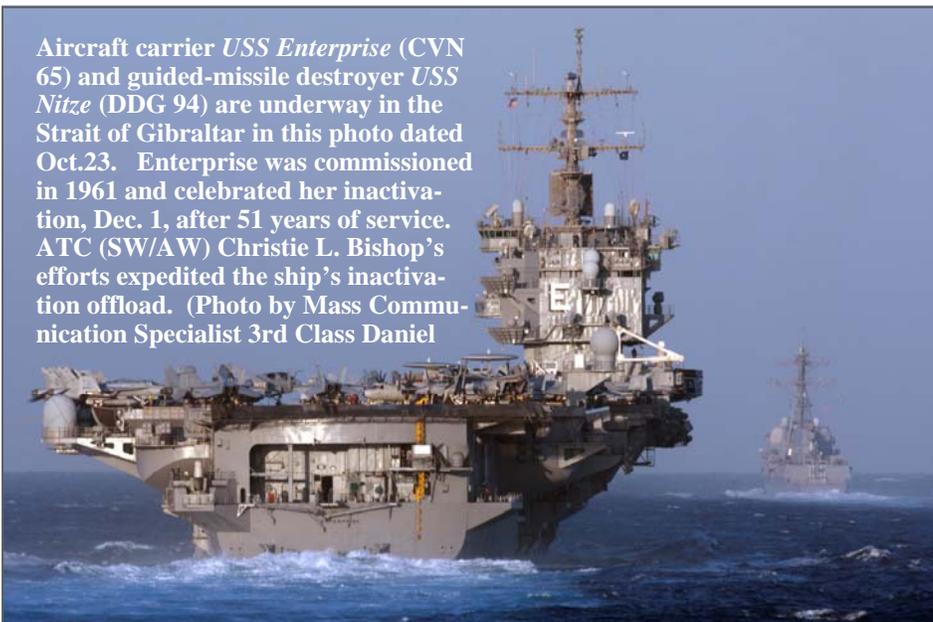
Aviation Boatswain's Mate (Equipment) 2nd Class Mark Aggabao, right, and Aviation Boatswain's Mate (Equipment) 2nd Class William Fondren help lower a catapult on the flight deck of the aircraft carrier *USS Theodore Roosevelt* (CVN 71) in this photo dated Dec. 20. Theodore Roosevelt is in the last year of a refueling and complex overhaul at Newport News Shipbuilding. (Photo by Mass Communication Specialist Seaman Eric Norcross/Navy.mil)

ated, mistake-proof way of issuing supplies.

- developed the R-RIDER program which routes routine paperwork

(request chits, leave, etc.) through the proper chain of command for approval, eliminating hard copies, folders, rework and wait time.

Aircraft carrier *USS Enterprise* (CVN 65) and guided-missile destroyer *USS Nitze* (DDG 94) are underway in the Strait of Gibraltar in this photo dated Oct.23. *Enterprise* was commissioned in 1961 and celebrated her inactivation, Dec. 1, after 51 years of service. ATC (SW/AW) Christie L. Bishop's efforts expedited the ship's inactivation offload. (Photo by Mass Communication Specialist 3rd Class Daniel



**C**hief Aviation Electronics Technician (ATC) (SW/AW) Christie L. Bishop, CPI LCPO, *USS Enterprise* (CVN 69)

Bishop and her team reorganized *Enterprise*'s Hangar Bay supply "mountain." They prioritized placement of assets to ensure items that were frequently requested were readily accessible, reducing average number of man-hours required to retrieve materials from 74 to 50 per process. She also:

- developed and implemented a Monthly Maintenance Plan (MMP)

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Aviation Machinist's Mate 2nd Class Felix Gonzales, works on an MH-60S Sea Hawk from the Eightballers of Helicopter Sea Combat Squadron (HSC) 8 aboard the aircraft carrier *USS John C. Stennis* (CVN 74) in this photo dated Jan. 3. John C. Stennis is deployed to the U.S. 5th Fleet area of responsibility conducting maritime security operations, theater security cooperation efforts and support missions for Operation Enduring Freedom. ATC Joel A. Green's command, Fleet Readiness Center Northwest, maintains MH-60s. (U.S. Navy photo by Mass Communication Specialist 2nd Class Lex T. Wenberg/Released)

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rapid improvement event that centrally located all files on the share drive, providing easy access to enabled. Automating the MMP reduced processing time by 96 percent, improved accuracy and quality of the data by 25 percent, and resulted in the distribution of MMP reports four days ahead of schedule.

- oversaw the plan for Enterprise's IMRL Transfer/Receipt and Inactivation off-load. A Value Stream Analysis identified 32 unnecessary process steps which led to a 31 percent improvement in the

process. By standardizing and streamlining the ship's Individual Material Readiness List transfer process, her team successfully reduced process time by 81 percent.

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**C**hief Aviation Electronics Technician Joel A. Green, AIR-Speed Division Leading Chief Petty Officer, Fleet Readiness Center Northwest

Green led three major CPI events that resulted in improved efficiency and cost-readiness for FRCNW including an event on the T-56 test cell led to: the development of standardized procedures to improve engine first pass yield; and a project on the ALQ-99. the ALQ-99 project increased throughput, improved manpower management, improved customer satisfaction and safety requirements. He also:

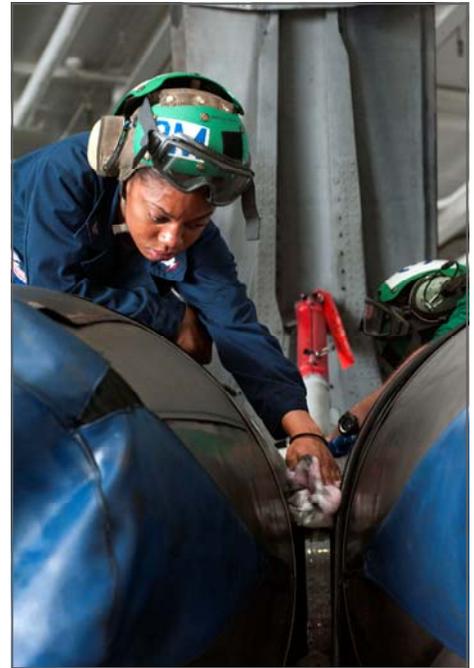
- authored or assisted with the implementation of several critical policy documents, including FRCNW AIRSpeed instruction, FRCNW Green Belt Certification procedures, and standard operating procedures for T-56 engine reporting.
- conducted training for front line supervisors on manpower projection accuracy which demonstrated how CPI techniques could be used to optimize the use of manpower as well as increase maintenance capability.

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**S**enior Chief Aviation Machinist's Mate (ADCS) (AW/SW) Erick S. Medrano, AIRSpeed LPO, Fleet Readiness Center Mid-Atlantic Oceana

Medrano's black belt project developed and established buffers for 49 types of Aviation Armament Equipment (AAE) within Oceana's Armament Division. This resulted in a 24 percent increase in throughput, elimination of 629 backlogged BRU items,



Aviation Structural Mechanic 3rd Class Tjanise Coats cleans the tail actuator of an F/A-18C Hornet assigned to the Bulls of Strike Fighter Squadron (VFA) 37 aboard the aircraft carrier *USS Harry S. Truman* (CVN 75) in this photo dated Jan. 15. Harry S. Truman is underway conducting composite training unit exercise (COMPTUEX) in preparation for its upcoming deployment. ADCS (AW/SW) Erick S. Medrano's command, Fleet Readiness Center Mid-Atlantic Oceana, supports VFA-37. (Photo by Mass Communication Specialist 3rd Class Lorenzo J. Burlison/Navy.mil)

and 100 percent customer satisfaction across all National Item Identification Numbers supported, with zero out-of-stock conditions. In addition, his team preserved excess AAE, which led to reallocating 480 annual production man-hours normally lost to corrosion prevention and treatment. Medrano:

- planned, coordinated, and managed production and logistical process improvement initiatives for FRCMA Oceana using Lean Six Sigma and the Theory of Constraints methodologies. Initiatives realized a Fleet Capability Alignment Program cost avoidance of more than \$58 million.
- coordinated CPI training while

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managing all site process improvement initiatives. His efforts resulted in the training and mentoring of 386 yellow belts, 24 green belts, and 10 Logistics Chain Improvement practitioners.

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**S**enior Chief Aviation Support Equipment Technician (ASCS)  
**Joseph L. Varcasia, AIRSpeed**  
LCPO/Quality Assurance Officer,  
COMFAIRFWD Detachment Aircraft  
Intermediate Maintenance Detachment  
Misawa, Japan

Varcasia was instrumental in the sustainment and expansion of CPI at the AIMD and other tenant commands at Misawa. He also:

- revitalized CPI principles at AIMD Misawa. His plan called for assessing maintainers' general level of knowledge, putting sustainable training measures in place, refreshing 5S, and emphasizing qualifications throughout all ranks and rates
- developed supplemental training guides that provided specialized training to address maintainers' knowledge gaps
- incorporated CPI into the command's Plan of the Week and introduced an award system to ensure maintainers' read the en-



Naval aviator Lt. Cmdr. Pete Curran, left, and electronic warfare officer Lt. Laura Combs, both assigned to Electronic Attack Squadron (VAQ) 132 conduct pre-flight checks before a scheduled night mission at Naval Air Facility Misawa in this photo dated Jan. 8. VAQ-132 is deployed to NAF Misawa on a six-month deployment supporting U.S. 7th Fleet. (Photo by Mass Communication Specialist 1st Class Kenneth G. Takada/Navy.mil)

tire document.

- influenced Quality Assurance to include elements of a 5S checklist into work center audits and random spot checks. AIRSpeed Core Members were tasked with performing spot checks as well. This

resulted in a revision to the Command Foreign Object Debris Instruction that put into place stricter control and restriction of personal items, and also led to a stringent pre-expended items accounting process. ■

## A thank you

**E**ach month the Naval Aviation Enterprise (NAE) recognizes one or more Sailors, Marines and civilian employees with the Outstanding Performance Award for their contributions to Naval Aviation and for serving as positive examples of enterprise behavior. The following officers and civilians were recipients of the award within the last six months:

- June 2012: Capt. Steven Beldy, Naval Air Force Atlantic
- July 2012: Col. Christopher Clayton, Naval Air Force Atlantic
- August 2012: Lori Lontos, Research and Engineering, Naval Air Systems Command
- September 2012: Capt. Matthew Danehy, Commander Airborne Command Control and Logistics Wing
- October 2012: Col. Christopher Seymour, Marine Aircraft Group 26
- November 2012: Benjamin Anderson, Chief of Naval Air Training

*(Service continued from Page 2)*

the common operational capability and the significant convergence of issues affecting all variants of F/A-18s.

First and foremost, the Navy will operate A-D Hornets for several more years. And as Navy squadrons transition to the Super Hornet, some of the older aircraft will become available to support the Marine Corps transition plan.

Second, with only a finite amount of space to perform complex airframe repairs and the Super Hornet requiring its share of depot-level maintenance, the Fleet Readiness Centers are a critical enabler for the entire F/A-18 fleet as both platforms draw on a shared resource. And finally, although the Hornet and Super Hornet are essentially two different aircraft, they are closely related: any investments made to improving the depot maintenance process for the Hornet will result in future benefits for the Super Hornet community.

As the F/A-18 A-D inventory continues to fly past the original design service life, fleet operators need a structured approach to airframe inspection, repair, and maintenance. Currently, the F/A-18 and EA-18G Program Office (PMA-265) at Naval



Marine Corps Capt. Bradley N. Buick, a Marine All-Weather Fighter Attack Squadron 225 F/A-18D Hornet weapon systems officer, performs a preflight check before performing air-to-air and air-to-ground training as part of Exercise Island Fury aboard Andersen Air Force Base Oct. 19. Photo by Cpl. Charlie Clark/Marines.mil

Air Systems Command (NAVAIR) is responsible for managing the F/A-18 A-D Service Life Extension Program, which is the program of record for

ensuring that the Hornet remains as a viable warfighting platform until full transition to the Super Hornet and the Lightning II is complete. What this means in practice is that a combination of inspections, modifications, and repairs are needed to manage the risks associated with aging airframes while a massive engineering analysis effort determines the way ahead for future modifications.

A stated program goal is to enable 150 Marine Corps aircraft to operate to 10,000 flight hours. The task of performing all high flight hour inspections and associated structural repairs, replacements, and modifications falls almost completely on the Fleet Readiness Centers (FRC) Southeast and Southwest (SW). To date, the good news is that, despite the high airframe time, global structural fatigue issues appear to be manageable, with most structural damage discovered on teardown being related to other factors such as mechanical wear, heat damage, and various forms of corrosion. The bad news is that every airframe requires some level of repair, creating a new and variable demand for a large number of airframe components that were never intended to be replaced.

The work performed by the FRC artisans during disassembly, inspection, and repair is nothing short of amazing, but it comes at a price: it can take anywhere from six months to two years for a Hornet to go through a planned depot-level event, which is time the aircraft is not available to the operational commander. Additionally, both Navy and Marine Corps Hornet squadrons are increasingly burdened with OORS time due to in service repairs (ISR): problems discovered during maintenance that must be repaired during unscheduled depot maintenance. In the past, ISR work was typically minor and the jet would be back on the flight schedule within days or weeks. Today, if age-related

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An F/A-18D Hornet aircraft accelerates down the runway in the Northern Mariana Islands Dec. 7 during Exercise Forager Fury 2012. The aircraft was one of six to make 13 total arrested landings within one hour on the runway. The aircraft is with Marine All-Weather Fighter Attack Squadron 225, which is currently assigned to Marine Aircraft Group 12 under the unit deployment program. Photo by Lance Cpl. Joseph Karwick/Marines.mil

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damage is discovered during any maintenance event, the repair can involve extensive disassembly, with the associated opportunities to discover additional damage. Currently, repairs categorized as ISR account for roughly half of all OORS time for Marine Hornets.

Given the growing readiness impact to the Navy and Marine Hornet community of a large and growing number of aircraft off the flight line for depot-level work, the first order of business for the VMFA TMS Team was to understand the details behind the problem. Marine Aircraft Group 11 and FRCSW jointly championed a Headquarters Marine Corps (HQMC) - sponsored master black belt project to look into the entire depot maintenance process from induction at the FRC to return to the squadron flight line. Several key points emerged that have formed the centerpiece of the VMFA strategy with regard to the OORS problem.

First, lengthy turnaround times (TATs) were being driven not just by the amount of required work, but by delays awaiting structural parts and/or engineering disposition. This situation was exacerbated by the one-of-a-kind nature of much of the repair work, requiring a customized solution from NAVAIR engineering and the procurement of structural items that were never intended to be replaced.

The second revelation was that a significant amount of artisan time was being expended on repair of surface corrosion that could have been prevented through better maintenance practices; however, this was found to have little impact on TAT.

The third and possibly most important finding concerned the detailed composition of work characterized as ISR: the single largest category of ISR is related to fuel cells, and the bulk of the remaining significant ISR drivers appeared to be age-related. In other words, damage such as a cracked

former could be classified as ISR if it was discovered on the flight line or during the required high flight hour inspections and repaired using Flight Hour Program funds.

After examining almost 400 ISR events performed by FRCSW artisans, the largest category based on time was fuel cell-related repairs, accounting for 23 percent of ISR time. Of this, over half was related to Tank 4 (removal and installation of Tank 4 is a depot-only task). The next biggest category at 17 percent was "damage," a somewhat cryptic reference to various repairs without consistent records of causal factors. After damage, the next four categories were all approximately six percent: leaks, ailerons, burn damage, and cracks.

In close partnership with PMA-265 and Commander, Fleet Readiness Centers, the VMFA TMS Team is participating in an ongoing effort to understand and characterize the exact drivers of depot maintenance, scheduled and unscheduled, prevent unnecessary depot maintenance through training, policy, and best practices, identify barriers to timely production, and bring key stake-

holders together to eliminate production barriers. As the F-18 Service Life Extension Program (SLEP) program matures, there will be numerous opportunities to arrest and reverse the trend of increasing OORS inventory through innovative logistics solutions and better integration of scheduled planned maintenance intervals (PMI) and SLEP-related repair/modifications.

In order to get the most out of a limited flight line population, the VMFA Team is working a multitude of initiatives aimed at improving subsystem reliability and operational availability. Two items are close to making an impact on the VMFA flight lines: a generator converter unit (GCU) upgrade, and the acquisition of Raytheon integrated test benches for Miramar and Beaufort to be used in maintaining the combat effectiveness of the APG-73 radar system.

Electrical power on the Hornet is supplied by two redundant GCUs driven off the airframe mounted accessory drives. Mechanical and electrical engineering marvels for their day, each GCU is about the size of a countertop microwave oven but pro-

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Aviation Structural Mechanic (Equipment) 3rd Class Lavette Cook, assigned to the Jolly Rogers of Strike Fighter Squadron (VFA) 103, tightens bolts on an F/A-18F Super Hornet aboard the Nimitz-class aircraft carrier USS Dwight D. Eisenhower (CVN 69) Oct. 22. Photo by Mass Communication Specialist Seaman Apprentice Madailein Abbott/Navy.mil

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vides 40 kilovolt amps of 400 hertz, three phase aircraft power. To date, fleet-wide reliability has dropped 87 percent from its design mean time between failure (MTBF) to its current MTBF.

From an NAE perspective, this translates into lost training opportunities, reduced combat effectiveness, and flight safety concerns. A thorough review of the GCU failure modes encountered during repair at the Marine aviation logistics squadrons revealed a preponderance of failed modules in the converter assembly, sometimes causing irreparable damage to the underlying structure as well. These modules contain three silicon-controlled rectifiers (SCRs) and related circuitry that convert the raw generator output into a stable 400 hertz power waveform.

As it turns out, Canada and Australia purchased a GCU upgrade for their Hornet fleets in 2001 through 2003 that replaced the original SCR modules with a new and far superior hybrid design. Unfortunately, this was incorporated as part of a package that also involved a new wiring harness and additional protection circuitry, making this option prohibitively expensive considering the number of Hornets in the U.S. operational inventory.

After nine months of VMFA Team discussions involving the PMA-265 Electrical Power Team and NAVAIR Propulsion and Power Engineering Department electrical power engineers, a plan was implemented to purchase a set of new hybrid SCR modules and subject them to qualification testing as a potential stand-alone upgrade for the current obsolete units.

In September 2012, NAVAIR engineers successfully tested the new modules under transient short circuit conditions and found that they performed flawlessly in the fleet GCU configuration without any additional modifications. This provided the



Aviation Structural Mechanic 1st Class Gregory Priebe grinds paint from a drop-tank on an F/A-18F Super Hornet from the Black Aces of Strike Fighter Squadron (VFA) 41. VFA-41 is operating from John C. Stennis which is deployed to the U.S. 5th Fleet area of responsibility conducting maritime security operations, theater security cooperation efforts and support missions for Operation Enduring Freedom. Photo by Mass Communication Specialist 2nd Class Lex T. Wenberg/Navy.mil

green light for PMA-265 to move forward with procurement of the newer modules for fleet installation, which can be done in about an hour by intermediate-level technicians.

For any modern fighter, radar malfunctions equate to a highly degraded weapons system. As the Hornet ages, the APG-73 is becoming more difficult to maintain due to the shortage of obsolete, out of production parts and the lack of spare assemblies, making the radar a top ready for tasking gap driver. To address this readiness problem while also seeking to reduce long-term support costs, the VMFA Team is working with HQMC, CNAF, and NAVAIR to acquire Raytheon integrated test benches ("spread bench") for Marine Corps Air Stations Miramar and Beaufort.

The current maintenance concept

for the APG-73 requires the Weapons Replaceable Assemblies (WRA) to be tested on Consolidated Automated Support Systems (CASS) or Reconfigurable/Transportable CASS, which typically results in either high beyond capability of maintenance rates or extremely time consuming troubleshooting.

Oftentimes, a WRA will test good on CASS but will check bad in an actual aircraft. The spread bench is the fault isolation tool of choice for trained technicians and is capable of quickly isolating a malfunction to a specific circuit card/shop replaceable assembly (SRA). The failed card can then be connected to a suite of commercial test equipment to identify the failed component.

While non-deployable, the spread bench, in conjunction with an experienced operator, essentially brings an original equipment manufacturer-type of repair capability closer to the flight line and is expected to pay back the investment cost within five years through BCM cost avoidances. Additional benefits include not only a rapid repair TAT time, but reduced costs for shipping classified components, better management of scarce repair parts, and better radar performance.

With the Marine Corps planning to operate the F/A-18 A, C, and D aircraft to at least 2024 to 2026, careful planning and execution of airframe inspections, repairs, and modifications will be critical to maintaining airworthiness, operational availability, and combat readiness. On the flight line, understanding the ready basic aircraft and RFT impacts of sub-system reliability must be coupled with cost-effective actions to get the most out of a limited resource. With key stakeholders across multiple organizations and operational commanders at all levels responsible for providing a specified set of capabilities, an enterprise approach becomes the only way to ensure success while staying within the boundaries of affordability. ■

## Links of interest

1. **NAE Dec 2012 Sitsum\***

The December edition of the *Sitsum* features the following articles: "National Intelligence Council Global Trends Report 2030: Alternative Worlds"; the "Defense Innovation Marketplace: Defense and Industry Narrow Communication Gap"; and the NAE S&T Project entitled: "New Methods for Photogrammetric Target Acquisition Tracking and Analysis."

[https://www.portal.navy.mil/comnavairfor/Naval\\_Aviation\\_Enterprise/AirSpeed%20Newsletters/Newsletter\\_Repository\\_2012/NAE\\_S-T\\_SITSUM/Dec\\_2012.pdf](https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter_Repository_2012/NAE_S-T_SITSUM/Dec_2012.pdf)

2. **DoN CPI Gram – January 2013\***

This issue features information on the Secretary of the Navy's Risk Mitigation Fiscal Planning, DoN's Business Transformation Plan Fiscal Year 2013 and Fiscal Year 2012 Annual Report, and aligning projects to DON objectives

[https://www.portal.navy.mil/comnavairfor/Naval\\_Aviation\\_Enterprise/AirSpeed%20Newsletters/Newsletter\\_Repository\\_2012/DoN\\_CPI\\_Gram/Jan\\_2013.pdf](https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter_Repository_2012/DoN_CPI_Gram/Jan_2013.pdf)

3. **A 'Hush Rush' keeps the T-45 flying**

Read how the Naval Air Warfare Center - Aircraft Division Propulsion Systems Evaluation Facility qualified the low pressure turbine blades in the T-45A Goshawk 's F405 engine.

<http://www.navair.navy.mil/index.cfm?fuseaction=home.NAVAIRNewsStory&id=5230>

4. **X-47B completes historic at-sea period aboard Truman**

The X-47B Unmanned Combat Air System demonstrator completed a series of deck handling tests in preparation for its first carrier-based launch and recovery next year, including the first ever powered flight deck taxi test and numerous communication and telemetry checks on the flight deck.

<http://www.navair.navy.mil/index.cfm?fuseaction=home.NAVAIRNewsStory&id=5223>

5. **Reserves receive first MV-22 Osprey squadron; looking for good Marines**

Marine Medium Helicopter Squadron 764 transitioned into the Reserve's first Marine Medium Tiltrotor Squadron.

<http://www.marforres.marines.mil/MFRNews/NewsArticleDisplay/tabid/7930/Article/136751/reserves-receive-first-mv-22-osprey-squadron-looking-for-good-marines.aspx>

6. **Flight Ready: NAVAIR Reserve Program**

Watch this video to learn how reservists are part of a NAVAIR integrated operability project.

<http://www.navair.navy.mil/index.cfm?fuseaction=home.VideoPlay&key=76232314-F6AE-401C-B568-E11E2F5FA90E>

7. **NAE Air Plan: Total Force - Projects Ongoing\***

The latest Air Plan discusses total force issues, initiatives and accomplishments.

[https://www.portal.navy.mil/comnavairfor/Naval\\_Aviation\\_Enterprise/Air%20Plans/27-JAN13\\_Air\\_Plan.pdf](https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/Air%20Plans/27-JAN13_Air_Plan.pdf)



An X-47B Unmanned Combat Air System demonstrator aircraft is secured aboard the aircraft carrier *USS Harry S. Truman* (CVN 75) in this photo dated Dec. 11. Photo courtesy of Northrop Grumman by Alan Radecki/Navy.mil

\*- Site is CAC-enabled. Some readers may not be able to access the link.

Content in this publication has been cleared for release.