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CHSMWP uses JIT training to impact readiness

Article and photos by Commander, Helicopter Maritime Strike Wing, U.S. Pacific Fleet

Commander, Helicopter Maritime Strike Wing, U.S. Pacific Fleet (CHSMWP) took a non-traditional approach to correcting a skill set deficiency identified within the wing. Over the past year manpower reductions resulted in significant losses to the senior petty officer inventory in the command. In addition to the loss in numbers, CHSMWP experienced degradation in the expertise of its workforce and the provision of on the job training they routinely provided to junior technicians.

Current readiness metrics revealed technicians were more apt to replace a main rotor blade than repair it. Using continuous process improvement (CPI) methodologies, HSMWP used root cause analysis to determine how this situation could be improved and sustained.

Last year, 126 blades were replaced at a cost of \$8.1 million. Fiscal impacts, however, weren't the only problem. Lack of available assets compounded by the difficulty of moving large items to deployed cruiser, destroyer and frigate ships operating independently caused deficits in the number of ready basic aircraft. The HSMWP maintenance officer, Cmdr. Matt Wells, and his inspection/training team re-engaged squadron maintenance departments

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Robert Thompson (center, in yellow) teaches main rotor blade repair to HSL-37 technicians (from left to right) Rob Hornbeck, Aviation Structural Mechanical Airman (AMAN) Michael Coronel, Aviation Machinist's Mate 1st Class Kaiser Sanchez and (at right) AMAN Michael Klarin.

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Two ships, NAVAIR division among 2011 Enterprise AIRSpeed award nominees



Photo by USS John C. Stennis Mass Communication Specialist 3rd Class Kenneth Abbate/Navy.mil

The Enterprise AIRSpeed Leadership, Master Gunnery Sergeant John Evancho Innovator of the Year and the Enterprise AIRSpeed Site of the Year awards are given annually by the Maintenance and Supply Integration Performance Improvement Branch to recognize excellence in continuous process improvement. This year marks the first time a ship and non-fleet activity competed against other sites for that honor. Read about their endeavors, accomplishments and experiences in the synopses below. The winners will be announced via naval message on or about Jan. 31.

Enterprise AIRSpeed Leadership Award Nominees

Master Sgt. John Sommers

Marine Aviation Logistics Squadron 12

By identifying the need to upgrade and increase Marine Aviation Logistics Squadron (MALS) 12's Consolidated Automatic Support System capabilities and reliability, Sommers eliminated all expeditious repairs (EXREPS) and reduced the number of ALR-67 radar warning receivers sent to Level 3 maintenance. He also helped to discover a solution to reduce the command's on-hand inventory without generating EXREPs and cost avoided more than \$200,000. Sommers also engineered a single-point tracking system to ensure automated log sets accompanied all tracked repairables issued by MALS-12 which increased ready basic aircraft and ready for tasking aircraft on the flight line. MALS-12's Human Capital Project, spearheaded by Sommers, doubled the number of actual maintenance hours in the command. Maintainers now work a dedicated, uninterrupted period of time each day and conduct administrative business during another allotted time. With this scheduling, the total number of due in for maintenance components has been reduced and the number of maintenance action forms that exceeded their

time to reliably replenish was reduced by more than 50 percent.

Navy Lt. Robert Wainscott, USS John C. Stennis (CVN 74)

Stennis leads the fleet in the number of green belts trained afloat thanks to the efforts of Navy Lt. Robert Wainscott. As the Continuous Process Improvement (CPI)/AIRSpeed division officer, he injected CPI into 17 ship departments. Wainscott also championed the inclusion of the Navy's white belt training course for Sailors assigned to Stennis, requiring its completion before they reported to the ship for duty. His efforts also were responsible for the introduction of yellow belt and champion training in the Executive and Enlisted School of the Ship Curriculum. The class provides critical thinking training in Lean, Six Sigma and the Theory of Constraints to Sailors during their check-in aboard ship. Wainscott's black belt's Zone Inspection Program Rapid Improvement Event (RIE), which tracked how quickly discrepancies were entered into the Maintenance Onboard Data Exchange System (MODES) and when they were corrected, revealed that 36 percent of all discrepancies

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Sailors perform maintenance on a jet blast deflector aboard the Nimitz-class aircraft carrier *USS John C. Stennis* (CVN 74). John C. Stennis is currently deployed to the U.S. 5th Fleet area of responsibility conducting maritime security operations and support missions as part of Operations Enduring Freedom and New Dawn. Photo by Mass Communication Specialist 3rd Class Benjamin Crossley/Navy.mil

(Nominees continued from Page 2)

were never entered, that it took an average of seven days to enter the data and that the data lacked fidelity. He also discovered discrepancies took several weeks to address. To reduce the administration burden on inspectors, Wainscott and his RIE team developed a single-copy inspection form which required departments to use the onboard information systems as a primary reference.

Controls also were implemented to verify MODES entry within three days of completing the inspection. In addition, a daily report highlighting delinquency trends by department is now sent to the department heads and executive leadership. In addition, the MODES user interface was redesigned to foster more timely and accurate data entry.

Master Gunnery Sergeant John S. Evancho Innovator of the Year Nominees

Aviation Support Equipment Technician 2nd Class Adam Haffner, Commander Fleet Air Forward, Aircraft Intermediate Maintenance Detachment, Atsugi, Japan
Haffner headed up the effort to establish a radiation decontamination facility at Aircraft Intermediate Maintenance Detachment (AIMD) Atsugi to scan and clean potentially contaminated aviation depot level repairable and surface depot level repairable retrograde components caused by damage to the Fukushima Dai-Ichi Nuclear Plant following an earthquake and tsunami in Japan in March 2011. Using continuous process improvement concepts and methodologies, Haffner designed and created an effective process flow in the new facility – the Forward Repairable Inspection Activity – which has decontaminated and cleared more than 8,800 components. His work on the H-60's Recovery Assist, Secure and Traverse (RAST) Probe, which included creating a checklist to identify whether or not the component was repairable prior to ordering parts, helped AIMD Atsugi reduce inventory costs by more than \$150,000, improved the component's time to reliably replenish by 74 percent, reduced repair costs by 50

percent and realized a \$84,000 cost avoidance. AIMD Atsugi was also able to achieve an unprecedented 98 percent production efficiency rate thanks to Haffner's efforts.

Aviation Electronics Technician 2nd Class Christopher Hatch, Aircraft Intermediate Maintenance Detachment Misawa, Japan

Using Lean Six Sigma methodology, Hatch streamlined a government licensing procedure which decreased processing time from 30 days to under an hour, reduced the number of individuals involved with the procedure from eight to three, and eliminated 116 steps from the process. He also led a five-member RIE team to improve the APS-115 Receiver/ Transmitter repair process and reduced its time to reliably replenish (TRR) by 35 percent. Hatch also headed a team to improve valve and pump housings' readiness which reduced TRR by 41 percent. Taking Naval Aviation's CPI culture beyond his command, Hatch provided training to personnel at Naval Munitions Command East Asia Division in Okinawa and Guam.

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An aviation electrician's mate airman performs tests on a night vision scope aboard the aircraft carrier *USS George H.W. Bush* (CVN 77) in this photo dated Nov. 21. Photo by Mass Communication Specialist 3rd Class Billy Ho/Navy.mil

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Aviation Electronics Technician (AW) 1st Class Cedric Marrioneaux, *USS George H. W. Bush* (CVN 77)

Marrioneaux led a rapid improvement event (RIE) to improve induction of components for calibration. He created a calibration issue and receipt process flowchart to guide calibration technicians and enable better collection of required information and documents. This ensured better entry of information into the Metrology Automated System for Uniform Recall and Reporting database. A standard operating procedure (SOP) and a requirements list discrepancy flowchart that listed key steps of the induction process were also created. Report turnaround was reduced from 12 days to four days; time for Calibration Requirements List validation decreased from 12 days to

five days. Six months later, Bush's calibration rate improved to 98.5 percent, the best among all aircraft carriers. Marrioneaux also assisted in the reconfiguration of Wardrooms I and II. The distance traveled by diners each day was reduced from 500 feet to 200 feet and customer wait time was reduced from four minutes to two minutes. An RIE on the Aircraft Intermediate Maintenance Detachment's support equipment (SE) issue and receipt process led by Marrioneaux shortened search time for SE in the ship's hangar from 40 seconds to 15 seconds and reduced the overall issue and check-in time from one hour to 30 minutes. This was accomplished by using a "Ouija board" (a tabletop model of an item being tracked or plotted) for SE, implementing a SOP and applying 5S.

Aviation Electricians Mate (AW) 1st Class Casey McMurry, Marine Aviation Logistics Squadron 24

McMurry developed a new training tracking process using the Continuous Performance Improvement Management System. This enabled the command to ensure every Marine and Sailor received yellow belt training within 90 days after check-in and ensured Marines would be self-sufficient in the event of a deployment. It also improved the accuracy of the unit's records. He facilitated a team that associated each end item repaired by Marine Aviation Logistics Squadron (MALS) 24 to a Work Unit Code. This enabled maintainers to attribute Subsystem Capability Impact Report (SCIR) hours to an individual item. The team also created a number of spreadsheets to extrapolate requisition delivery data. The new metric allows a MALS to accurately measure its response time for high priority requisitions from the flight line. Improvements in MALS-24's Electrical/Instrument Branch decreased its TRR by five days and associated SCIR hours have decreased by 10 percent.

Aviation Electronics Technician 2nd Class (AW) Geoffrey Mills, Fleet Readiness Center Southeast

When Fleet Readiness Center Southeast's (FRCSE) Aviation Division wanted to decrease the number of components that had exceeded their time to reliably replenish (TRR) due to reasons other than supply, leadership hand-selected Mills to conduct the project. Using Franklin Covey's Four Disciplines of Execution, he created three lead measures to achieve this goal -- increase the number of qualified technicians and the number of Collateral Duty Inspectors (CDI), and decrease the number of components that were overdue for Preventative Maintenance (PM). After implementation, the number of components that exceeded their TRR decreased from 73.8 percent to 17 percent. CDI coverage was increased by 31 percent and overdue PMs were reduced by

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92 percent. Mills also identified a need to obtain a resistance brazer (a machine to bond metal parts together) and silver solder equipment (to solder alloys with melting points of 450 degrees or above) in order to exploit the skill set of an onsite artisan who had the expertise to repair the P-3 generator's current transformer. FRCSE was able to eliminate the need to send the P-3 generator to another maintenance facility for the repair and cost avoided more than \$80,000.



An aircraft mechanic with Marine Fighter Attack Squadron 122 loads an F/A-18 Hornet engine into a preservation container to be sent back to Marine Corps Air Station Beaufort, S.C., in this photo dated May 21. Photo by Cpl. Samantha H. Arrington, 2nd Marine Aircraft Wing (Fwd)/Marines.mil

Aviation Support Equipment Technician (AW/SW) 2nd Class Jessica Moore, Fleet Readiness Center Southwest Site Point Mugu

Moore's work in the Instrument Shop reduced the work center's time to reliably replenish (TRR) by more than 84 percent, reduced costs associated with the repair of components at Level 3 maintenance activities (BCM) by 50 percent, generated a BCM cost avoidance of more than \$200,000, and realized a 95 percent ready-for-issue rate. She led a TRR reduction event on the E-2C Radar Set Weapon Replaceable Assembly which quantified the need for a Pinpoint component repair station, the need to upgrade the work center's hybrid Consolidated Automatic Support System bench and for an additional classified hard drive. Her efforts resulted in the command acquiring all of the assets and increasing the work center's capability by 50 percent. Moore's CPI efforts have also contributed to the command's \$1.2 million in Fleet Capability Alignment Program savings and cost avoided \$2.3 million in BCM interdictions.

Staff Sgt. Scott Scudder, Marine Aviation Logistics Squadron 14

Scudder led an Administrative Separations Process (ADSEP) black belt project for the 2nd Marine Aircraft Wing commanding general. The action plan developed to accelerate the process included standardizing efforts, assigning roles and responsibilities, and establishing aggressive timelines for package processing. At Marine Air Group 14, the implemented improvement reduced the average processing time from 180 days on boarded ADSEP packages and 90 days for non-boarded ADSEP packages, to 60 and 30 days, respectively. This reduced processing time also resulted in retention cost savings of \$170,000 over a six-month period. Scudder also developed a reporting system that linked Marine On-Line and Continuous Performance Improvement Management System into one centralized location. This improvement decreased the time to validate training by almost 98 percent and increased reporting accuracy from 50 percent to 100 percent. Currently, three other Marine aviation logistics squadrons use this solution.

Aviation Electronics Technician 2nd Class Richard Walsh, Fleet Readiness Center Mid-Atlantic Site Oceana

Walsh developed and implemented a concept of real-time component maintenance optimization using a Repair Decision Engine computer software program. This program incorporates Level 2 and Level 3 maintenance repair site success rates, repair costs, and turnaround time, and determines the most successful and cost effective repair

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Aviation Structural Mechanical Airman Joshua Mannucci gets hands-on experience repairing a main rotor blade as technical instructor Robert Thompson (left, blue shirt) guides him through the process.

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to focus on complete compliance with procedures in the technical manuals and on maintenance requirement cards during special and phase inspections. Training was also required to help achieve the desired effect.

Key personnel throughout the type/model/series community engaged to craft a training solution; training was initially introduced to the Helicopter Anti-Submarine Squadron Light 37 “Easy Riders” and Marine Aviation Logistics Squadron (MALS) 24 personnel located in Kaneohe Bay, Hawaii.

Targeting both the organizational- (O) and intermediate-level maintenance was deemed crucial. This in-

terface enabled the introduction and leveraging of skills. An additional benefit was the resultant beyond capability of maintenance interdictions. Technicians from both maintenance levels were thoroughly engaged in the “hands-on” training provided by Robert Thompson from the H-60 Air Vehicle Support Team. All of the technicians enjoyed the “train-do” aspect of learning, its practical application and their ability to see the results of their work. Additionally, MALS-24 was able to complete maintenance on several blades during this evolution, making them ready for issue.

This just-in-time training will also be exported to Japan and taught locally at the Center for Naval Aviation Technical Training Unit Naval Air Sta-

tion North Island, Calif. Although CPI application for the O-level of maintenance is relatively new, HSMWP uses the tools for everything from issue identification to problem resolution.

“The shifting manpower landscape requires us to provide effective and sustainable solutions for our squadron technicians,” said Capt. Jeffery Hughes, CHSMWP commander. “CPI helps us to achieve that goal.”

Because of wing engagement and squadron comprehension of the importance of skilled and proficient technicians, this opportunity produced immediate results. We must all do what we can to innovate and improve our contribution to heightened readiness to meet the challenges that lay ahead. ■

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site for each component. He also discovered an anomaly in the Fleet Capability Alignment Program (FCAP) and developed a solution for the software application that aligns best maintenance practices with positive financial results. Working across 67 production work centers, he trained 134 personnel on Individual Component Repair List (ICRL)

screening and research, resulting in an alignment between FCAP and ICRL. Walsh's team collected data on almost 8,100 components and identified repair opportunities. This not only led to a reallocation of an estimated 280,680 man-hours, but \$2.7 million in cost avoidance which is expected to be realized each year. His training efforts have also contributed to a 46 percent reduction in expeditious repairs and a 25 percent decrease in work in progress.

Enterprise AIRSpeed Site of the Year Nominations

Aircraft Intermediate Maintenance Detachment Atsugi

Aircraft Intermediate Maintenance Detachment Atsugi conducted an Individual Material Readiness List (IMRL) value stream analysis (VSA) for L-Coded assets (equipment that requires calibration and is designated for use at organizational-level (O-level) maintenance). Prior to the event, 111 IMRL items identified by the VSA as constraints were kept at the intermediate-level maintenance activity. When the squadron requested the items, maintainers took an average of 40 minutes to locate, perform pre-operational inspection, and check out. As a result of the VSA, the IMRL items were transferred directly to the customer and are now located at the point of use. The move garnered additional net time savings of 100 minutes per IMRL item, and reduced distance traveled by 6,324 feet.

The Aviation Supply Department Repairable Materials Section/Pre-Expended Bin (PEB) Rapid Improvement Event (RIE) Team conducted an analysis of 862 parts that were frequently used by customers to create new inventory. As a result, parts are now grouped by numbers and items frequently used by a certain aircraft type/model/series are located alphanumerically within the PEB. Customers are now receiving parts 54 percent faster. When Atsugi received two Consolidated Automatic Support System benches in its Avionics Division, it held an RIE to maximize their efficiency and productivity. The team used 5S techniques to organize the work center and reduced process time by 30 minutes, eliminated travel by 314 feet, and realized a total overall improvement of 20 percent.



An aircrew survival equipmentman pulls the slack on a parachute (left) while another checks for tears at the paraloft at Naval Air Facility Atsugi in this photo dated July 15. Photo by Mass Communication Specialist 2nd Class Justin Smelley/Navy.mil

Fleet Readiness Center Mid-Atlantic Site Oceana

The Huntron/Pinpoint work center at Fleet Readiness Center Mid-Atlantic Site Oceana developed a Universal Watt Test Adapter to troubleshoot and repair several F/A-18 avionics components and support equipment. This new component repair capability generated a Fleet Capability Alignment Program savings of \$607,000 for the work center.

A value stream analysis for the repair process of F/A-18 Horizontal Stabilizer Servo-Cylinders led to a 62 percent reduction in the Hydraulics Shop's time to reliably replenish (TRR) and a 87 percent TRR reduction in a depot-level artisan work center for an overall TRR decrease of 75 percent.

FRCMA's Human Capital Project standardized and reduced variation in the Navy workday by allocating specific times for production, professional and personal administrative requirements. Controls were identified and

implemented to increase the average production time to 849 minutes out of an available 1,080 minutes (a 59 percent improvement). The combination of the Human Capital Project and the TRR Reduction Rapid Improvement Event decreased Avionics Division's TRR by 84 percent, led to a 33 percent increase in production, the elimination of flight line expeditious repairs (EXREPS), and a 92 percent decrease in work center awaiting maintenance backlog.

The command's Reduce F/A-18 E/F Nose Landing Gear Strut and Wheel Brakes TRR event realized a 50 percent reduction in EXREPs and an 85 percent reduction in TRR.

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Fleet Readiness Center Northwest

Fleet Readiness Center Northwest (FRCNW) held the T56A14 Test Cell Cycle Time Reduction Project to standardize and optimize T56A14 test cell operational run procedures. Using the Lean concepts of set-up reduction, cycle time and takt time reduction techniques, the team was able to reduce variation and discrepancies by 21.4 percent in 12 months. The team also identified and addressed a gasket problem, implemented error proofing and reduced failures by 35 percent. Overall, the project reduced operational run time by 66 percent and increased the engine's first pass yield by 43 percent.

The command conducted a rapid improvement event to analyze the excessive repair time on EA-6B horizontal stabilizers. Joint artisan and Sailor inspections at the time of induction and the establishment of a buffer increased the accuracy of repair estimates and improved on-time deliveries.

The CRU-103 Chest Mounted Oxygen Regular DMAIC (Define, Measure, Analyze, Improve, Control) Rework Reduction Event held to address pool buffer sustainability reduced resource demand requirements by 49 percent and increased productive capacity of the work center by 28 percent. The work center's time to reliably

replenish improved by 18 percent. This was accomplished by requiring workload level-loading and establishing a production requirement of six items per day.

Fleet Readiness Center Southeast

The Structures Shop at Fleet Readiness Center Southeast found its time to reliably replenish (TRR) after bodies was averaging almost a month due to excessive times spent searching for tools. After the appropriate tools were procured and located near the point of use, the TRR was reduced by 99 percent.

FRCSE realized a 98 percent TRR reduction on the Speed Bias Servo by optimizing manpower, rearranging the shop layout, and re-fitting tool boxes with just the on-hand equipment.

The tubeaxial fan's TRR also was reduced by identifying the intermediate maintenance activity's inability to obtain parts in a timely manner as a constraint. One contract was found to have an excessive overdue issue date which was then expedited through the Defense Logistics Agency. The overdue parts were returned to service within five days and reduced the entire backlog of tubeaxial fans. As a direct result of FRCSE efforts, the high and low limits for the rotor motor were increased to better support current demand.

Fleet Readiness Center Southwest

Fleet Readiness Center Southwest (FRCSW) Support Equipment (SE) Division established a flight line troubleshooter program. Each week, an SE technician and

collateral duty inspector drive a fully-loaded troubleshooter cart to the flight line to conduct minor onsite SE repairs and collaborate with customers on SE issues. Currently, the flight line has 100 percent SE availability. Unnecessary SE issue/receipt transactions have been eliminated. SE also used 5S principles to create a new work center layout that reduced distance traveled by maintainers from 5,956 feet to 2,553 feet - a reduction of 60 percent.

The site's WRA-9 Pulse Generator Time to Reliably Replenish (TRR) Reduction Event realized

an 80 percent reduction in TRR by procuring and implementing an additional classified hard drive for the Consolidated Automatic Support System bench. Approximately three to four hours of redundant set-up time were eliminated, resulting in a 30 percent increase in production capacity.

Other improvements include procuring a Pinpoint component repair station; creating a standardized beyond capability of maintenance process along with updated capability code to capture artisan interdictions for the Attitude Directional Indicator and Eight-Day Clock. Expeditious repairs for the two components have decreased by more than 90 percent.



Sailors assigned to the propeller shop at Fleet Readiness Center Northwest at Naval Air Station Whidbey Island work on a T-56 engine propeller assembly used for a P-3 Orion aircraft during routine maintenance in this photo dated April 19. Photo by Mass Communication Specialist 2nd Class Nardel Gervacio/Navy.mil

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Fleet Readiness Center West Fort Worth

A Time to Reliably Replenish (TRR) Reduction Rapid Improvement Event on the F/A-18 main landing gear shock absorber at Fleet Readiness Center West Fort Worth reduced Hydraulics/Pneumatics Branch TRR by 48 percent. Test bench use, which affected the component's TRR, increased 20 percent by synchronizing/subordinating personnel work schedules, physical training, meetings and other external obligations. Maintainers also received training on best practices. The number of components which were beyond the capability of maintenance to repair and would have been sent to a Level 3 maintenance facility were reduced by 87 percent. In addition, an event on the Stab Actuator yielded a TRR reduction of 36 percent.

A new mobile maintenance facility (MMF) van pad was established adjacent to the Avionics Division. This move eliminated the need to transport gear and personnel a mile to the main MMF compound.



A hull maintenance technician grinds the edge of a storage unit aboard the Nimitz-class aircraft carrier *USS John C. Stennis* (CVN 74). John C. Stennis was deployed to the U.S. 5th Fleet area of responsibility conducting maritime security operations and support missions as part of Operations Enduring Freedom and New Dawn. Photo by Mass Communication Specialist 3rd Class Benjamin Crossley/Navy.mil

An analysis revealed that forward-looking infrared (FLIR) casualties were caused by pilot error when landing. After providing training to the pilots, all pilot-induced FLIR casualties were eliminated, reducing repair cycle time to routine upkeep.

Marine Aviation Logistics Squadron 13

Marine Aviation Logistics Squadron (MALS) 13 conducted a rapid improvement event (RIE) on its 364-Day Special Inspection so that it could complete it in less than 16 hours rather than the two weeks it historically took. The command established a designated team to conduct inspections from start to finish, kitted regularly ordered parts, created a phase box that included all tools and equipment need to perform the inspection, added additional manpower to the corrosion control shop and properly trained personnel.

When aircraft wash station contracts expired at Marine Corps Air Station Yuma, squadrons were informed
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A P-3C Orion aircraft from Patrol Squadron (VP) 1 arrives to begin a six-month deployment in the region in this photo dated Nov. 26. VP-1 is home based in Whidbey Island, Wash., and is the first squadron to deploy to Naval Air Facility Misawa since 2007. Photo by Petty Officer 1st Class Matthew Bradley/Navy.mil



An aviation boatswain's mate 2nd class secures a C-2A Greyhound to the Electromagnetic Aircraft Launch System shuttle as part of the first launch of a C-2A Greyhound from the NAVAIR Lakehurst, N.J., test site June 8. Photo by Sherry Jacob/NAVAIR

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they would assume the work. MALS-13 was asked to scope the fiscal and man-hour resources needed for the task. Not only are the squadrons performing the work previously done by contractors, but the process now takes 33 percent less time than before.

MALS-13 realized a 22 percent reduction in the radar antenna's time to reliably replenish by kitting regularly ordered parts, providing training on the Buffer Management Tool and by assigning a designated team to conduct the work. The RIE also spurred another event on communication across all squadrons on troublesome parts that have high/unbalanced demand. Its goal is to prevent inconsistent demand spikes

Marine Aviation Logistics Squadron 24

The H-53D Damper Assembly Rapid Improvement Event (RIE) is Marine Aviation Logistics Squadron (MALS) 24's most significant process improvement. Before the event, every damper assembly was beyond the capability of maintenance (BCM) to repair. The team identified the main

contributor causing the BCMs and collaborated with the engineer to revise the inspection criteria and to develop a feasible repair alternative. To supplement the new inspection criteria, the team created a parts kit to ensure all consumable materials would be available at their point of use. The team modified the inspection criteria for the organizational level to ensure assets were inducted to the intermediate level before they were sent to Level 3 maintenance for repair. Because of this new process, MALS-24 damper assemblies in the queue for repair at Fleet Readiness Center East were returned. All expeditious repairs have been eliminated, non-mission capable supply hours have decreased and the command is currently on track to realize a cost avoidance of \$343,000 a year.

As a result of a RIE on the T-56 Engine, a new work flow was created and the work center was reconfigured. Now, as orders for engines are filled from the ready-to-issue buffer, each station along the production line pulls an engine from the

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Sailors prepare an E-2C Hawkeye assigned to the Golden Hawks of Airborne Early Warning Squadron (VAW) 112 for launch aboard the Nimitz class aircraft carrier *USS John C. Stennis* (CVN 74) in this photo dated Oct. 9. The squadron is based out of Naval Air Station Pt. Mugu. Photo by Mass Communication Specialist 2nd Class Walter M. Wayman/Navy.mil

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preceding station. Every work station has an engine undergoing repair. This event has enabled the work center to increase production by 25 percent.

Aviation Life Support Systems Division reduced its buffers by implementing single-piece flow, and reduced its TRR by 25 percent across all work centers. The RFI pool was reduced by 42 percent, saving more than \$50,000 in excess inventory.

Prior to the Reduction Gear Box (RGB) Over the Wing (OTW) Replacement Event for the T-56 engine, every engine requiring repair was removed from the aircraft, inducted to the MALS and underwent a full overhaul. This resulted in a high time to reliably replenish (TRR) and difficulty in maintaining the buffer. To address this, communication between the MALS and the squadron was

improved. The MALS now assists in completing some repairs on the RGB while the engine is still on the wing of the aircraft. While the new process takes slightly longer than the old one, it allows for slower depletion of the buffer and, to date, the OTW RGB process has prevented five complete engine changes.

MALS-24 identified a constraint in the P-3C Intercockpit Control System (ICS) Control Box's testing procedure. In the past, a single ICS component would be tested and fixed before testing on the next one began. Current procedure now calls for the testing on the entire control box to be performed at the same time. This allows all discrepancies to be compiled during the time it is tested and for maintainers to order parts only once. Repairs are also listed on one assist maintenance action form. This resulted in the elimination of expeditious repairs (EXREPs), the elimination of Subsystem Capability Impact Report hours associated with the box, and the realization of more than \$747,450 in cost avoidance per year.

Marine Aviation Logistics Squadron 31

Marine Aviation Logistics Squadron (MALS) 31's ALQ-126B receiver event culminated with a reduction of 93 percent in its time to reliably replenish and a potential cost avoidance of more than \$13 million.

MALS-31 also analyzed the effectiveness of the supply system within MALS-31 to resolve a core conflict between meeting daily flight line demands while trying to repair all inducted components.

Work on the F/A-18 Roll Pitch Yaw Computer (RPYC) focused on identification and troubleshooting of RPYCs at both organization- and intermediate-level maintenance, with an emphasis on transparency and collaboration among technicians at both activities.

Aircraft Intermediate Maintenance Detachment Misawa

Fleet and Industrial Supply Center Yokosuka, Detachment Misawa's Packaging and Shipping Value Stream Analysis reduced total process time by more than 30 percent and reduced total shipping distance from 1,977 feet to 656 feet.

The Armament Division identified work center layout constraints that caused excessive movement and possible safety violations. The event led to nine "just-do-it" events which reduced process time by 63 percent and distance traveled by 69 percent.

Improvements also realized a 50 percent reduction in the time to reliably replenish (TRR) for valve housings and the TRR for pump housings was reduced by 48 percent.

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Lance Cpl. David J. Pyfer conducts corrosion control maintenance on a CH-53E Super Stallion helicopter assigned to Marine Medium Helicopter Squadron 268 Reinforced aboard the multipurpose amphibious assault ship *USS Makin Island* (LHD 8). The squadron is part of the 11th Marine Expeditionary Unit deployed aboard Makin Island and is conducting a scheduled deployment to the U.S. 5th and U.S. 6th fleet areas of responsibility. Photo by Lance Cpl. Claudia M. Palacios/Navy.mil



The aircraft carrier *USS George H. W. Bush* (CVN 77) pulls into Naval Station Norfolk following a seven-month deployment to the U.S. 5th and 6th Fleet areas of responsibility in this photo dated Dec. 10. Photo by Mass Communication Specialist 2nd Class Rafael Martie/Navy.mil

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Prototype and Manufacturing Division, Naval Air Systems Command 4.8.8

An analysis of the TMU-70/M 50-Gallon Liquid Oxygen Trailer overhaul process performed by Naval Air Systems Command's Prototype and Manufacturing Division revealed a constraint in repainting the trailers, which was performed by a vendor. This constraint was exacerbated by the batch processing inherent in the process. By moving to a single-piece flow process, cycle time was reduced by 56 percent, cycle time variation was reduced by 67 percent, work in progress was reduced by 54 percent and time waiting in queue was reduced as well.

An event to improve first-pass yield (FPY) and quality of the Air Launch and Recovery Equipment Critical Safety Items revealed there was variation in how technical data was interpreted by Defense Contract Management Agency (DCMA) quality assurance (QA) representatives, and the need to address the number of defective components. Implemented solutions included: tasking a program integrator with conducting root cause analysis for parts failing material receipt inspection; developing a training program for DCMA QA representatives; restructuring planning documents to improve content and clarity; tracking Quality Letters of Instructions to ensure the proper instructions were being received; developing a post-award conference process which included industry, Prototype and Manufacturing Division, DCMA, Defense Logistics Agency and Naval Supply System Command. As a result, FPY increased from 86.9 percent between 2002 and 2009, to 95.4 percent in 2010, to an even higher level of 98.5 percent in 2011.

A joint government-industry project was undertaken to address test throughput for the state-of-the-art Electromagnetic Aircraft Launch System (EMALS) to make

the EMALS test program as efficient as possible to meet the test schedule. The team executed 38 different improvement actions, including: establishing buffer inventories; procuring additional tools; implementing Test Site Readiness Reviews; delineating and documenting roles and responsibilities; and developing a government-industry data sharing process. This resulted in an 82 percent reduction in testing delays due to problems with Government Furnished Equipment. In addition, the cycle time between test launches was 33 percent lower than target time, Joint Strike Fighter testing began ahead of schedule; and there were no testing delays due to personnel, instrumentation or trough cover maintenance.

USS George H. W. Bush

USS George H. W. Bush (CVN 77) received their initial continuous process improvement (CPI) training in March 2011 and was operating in a CPI environment just six months during the award period. During this time Bush:

- developed a Goal Alignment Chart to align the ship's goals to Naval Aviation Enterprise's strategic objectives (This is the first time this tool was used aboard an aircraft carrier)
- improved its calibration readiness from 93.3 percent with an overdue rate of 4.5 percent, to 98.5 percent with an overdue rate of 1.8 percent
- reduced reporting turnaround by 67 percent through implementation of a standard operating procedure
- reduced man-hours for calibration requirements list (CRL) validation by 63 percent through implementation of CRL discrepancy and interchangeability and replaceability process flowcharts
- increased the fidelity of data for the development of its Ship Change Design 2012 Planned Incremental Availability. ■

Links of interest

1. **DoN December CPI-Gram***
Read how Predictive Modeling applies the Theory of Constraints and Lean Six Sigma to add and subtract resources to optimize the throughput of a process.
https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/CPI%20News/DON_CPI_Gram-December-FY12.pdf
2. **Lean Stuff***
Lean Stuff is compiled by Naval Sea Systems Command and disseminated to continuous process improvement practitioners and organizations throughout the Navy. To view the list of links from commercial sources, go to:
https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/Lean_Stuff/December_2011-2
3. **F/A-18 trainers receive 360-degree high definition visual system**
Upgrades consist of new projectors, mirrors and image computers that give pilots and naval flight officers the same visual perspective they have in the aircraft, including night vision goggle training.
<http://www.navair.navy.mil/index.cfm?fuseaction=home.NAVAIRNewsStory&id=4854>
4. **First MH-60S aircrew virtual environmental trainer ready for training**
Using helmet-mounted displays, crews can rehearse with six different weapons configurations in the simulator.
<http://www.navair.navy.mil/index.cfm?fuseaction=home.NAVAIRNewsStory&id=4853>
5. **FRCSW Almanac***
Command milestones are highlighted in this issue, including completion of the 100th center barrel procedure to an F/A-18 Hornet and repairs to a battle-damaged H-53 helicopter.
https://www.portal.navy.mil/comnavairfor/Naval_Aviation_Enterprise/AirSpeed%20Newsletters/Newsletter%20repository/FRCSW%20Almanac/FRCSW_Almanac_Vol_5-4.pdf
6. **Watch the latest episode of NAVAIR's Airwaves** at www.navair.navy.mil/news featuring the first launch of the F-35 carrier variant from Electromagnetic Aircraft Launch System (EMALS); AH-1Z's first deployment with its sister aircraft; and a look inside Hangar 1, the historic home to Navy airships at Naval Air Warfare Center - Aircraft Division, Lakehurst, N.J.
7. **Join NAVAIR on social media**
Tweet with Naval Air Systems Command Commander Vice Adm. David Architzel at www.twitter.com/COMNAVAIR.
Don't forget to visit NAVAIR on Facebook at www.facebook.com/NAVAIR
All of NAVAIR's latest videos are available at www.youtube.com/NAVAIRSYSCOM.
8. **FRCSW artisans re-wing legacy P-3 Orion patrol aircraft to extend service life**
The new wings will add 7,500 flight hours before a structural inspection is required.
<http://www.navair.navy.mil/index.cfm?fuseaction=home.NAVAIRNewsStory&id=4865>

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

Content in this publication has been cleared for release.