# FRCSW ALMANAC

Volume 10 - Issue 3

## E-2 and C-2 Landing Gear

*FRCSW Producing Quality and Safety*

# Skipper's Corner:

## USB Port Usage Concerns

Capt. Anthony Jaramillo

There have been serious security concerns regarding the use of unauthorized Universal Serial Bus (USB) devices and several security incidents regarding USB activity with NGEN/NMCI workstations. This includes devices such as USB memory cards, external hard drives, cellular devices, MP3 players, government issued cellular phones and cameras, etc., that can be attached to or inserted into a USB port.

In recent weeks, the Cybersecurity department in concert with NETWARCOM has identified over 30 security violations regarding unauthorized use of USB devices including government-issued cellular phones and cameras. Department of the Navy Information Technology (DON IT) policy requires USB ports on NMCI/NGEN must only be used by approved government furnished accessories from the NMCI Certified List or Plug and Play devices such as keyboards and mice. Please note that even though they are in some instances required for workload, government issued cameras are not approved for connecting to NMCI assets.

These type of actions are in direct violation of your signed SAAR-N agreement and could result in administrative action such as complete loss of DON IT access and other disciplinary action.

Any unapproved device plugged into a NGEN/NMCI workstation will trigger an IA Violation resulting in the user's NMCI account being disabled. On the first offense, a user will have to be counseled by their respective ISSM in order to have their account enabled again. On the second offense, the user's account will be disabled for 30 days, their supervisor will be notified, and they will have to redo their IA Awareness training once they are allowed back on the network. Any subsequent offence will result in DON IT use revocation.

In February 2018 the command will be visited by a Cyber Readiness team from U.S. Fleet Cyber Command on behalf of the Defense Information Systems Agency (DISA). They will be conducting an inspection of the entire command and making an assessment of information assurance programs, non-classified and classified IP networks, traditional security programs and policies. This will include reviewing and looking for USB security violations.

I have already asked the commands leadership to take action and now I am asking for everyone's assistance in ensuring we all adhere to Navy's Acceptable Use policy concerning unauthorized use of USB devices. The ultimate goal is zero violations and we will accept nothing less.

The personnel of this command are second to none and I know you will rise to meet this challenge. As always I thank you for your continued service to our country.

**Anthony Jaramillo**
Captain, U.S. Navy
Commanding Officer


# Fleet Readiness Center Southwest

FRCSW ALMANAC

***Commanding Officer***
**Capt. Anthony Jaramillo**

***Executive Officer***
**Capt. Steven Leehe**

***Command Master Chief***
**CDMCM (AW/SW) Joel Rodriguez**

***FRCSW Command Address***

Commanding Officer
Fleet Readiness Center Southwest
P.O. Box 357058
San Diego, CA 92135-7058

***FRCSW Website*** http://www.navair.navy.mil/frcsw
***FRCSW Facebook*** https://www.facebook.com/frcsw
***FRCSW YouTube*** https://www.youtube.com/user/FRCSWPAO

***FRCSW Public Affairs Office***
Phone: 619-545-3415
Email: FRCSW_PAO@navy.mil

***Ombudsman***
**Matthew Lutz**
**Phone:** (619) 301-7091
**Email:** FRCSWombudsman@gmail.com

**Work Schedule Status & Special Instructions in Emergencies**
**1-866-269-6590**

**FRCSW Mission & Vision**

***Mission***
We generate readiness through timely and responsive production of engines, aircraft, and components for the warfighter.

***Vision***
To be the premier maintenance repair and overhaul organization in the Department of Defense by providing the best value, highest quality, and most reliable products.

FRCSW is a cornerstone of future Naval Operations which we achieve through a highly capable workforce and robust community partnerships.

***Magazine Staff***

| | |
|---|---|
| Public Affairs Officer | Mike Furlano |
| Editor | Jim Markle |
| Graphic Artist | Chuck Arnold |
| Videographer/Photographer | Scott Janes |
| Public Affairs Specialist/Photographer | Christopher Nette |

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# FRCSW ALMANAC

Volume 10 - Issue 3 - November 2018

## Features

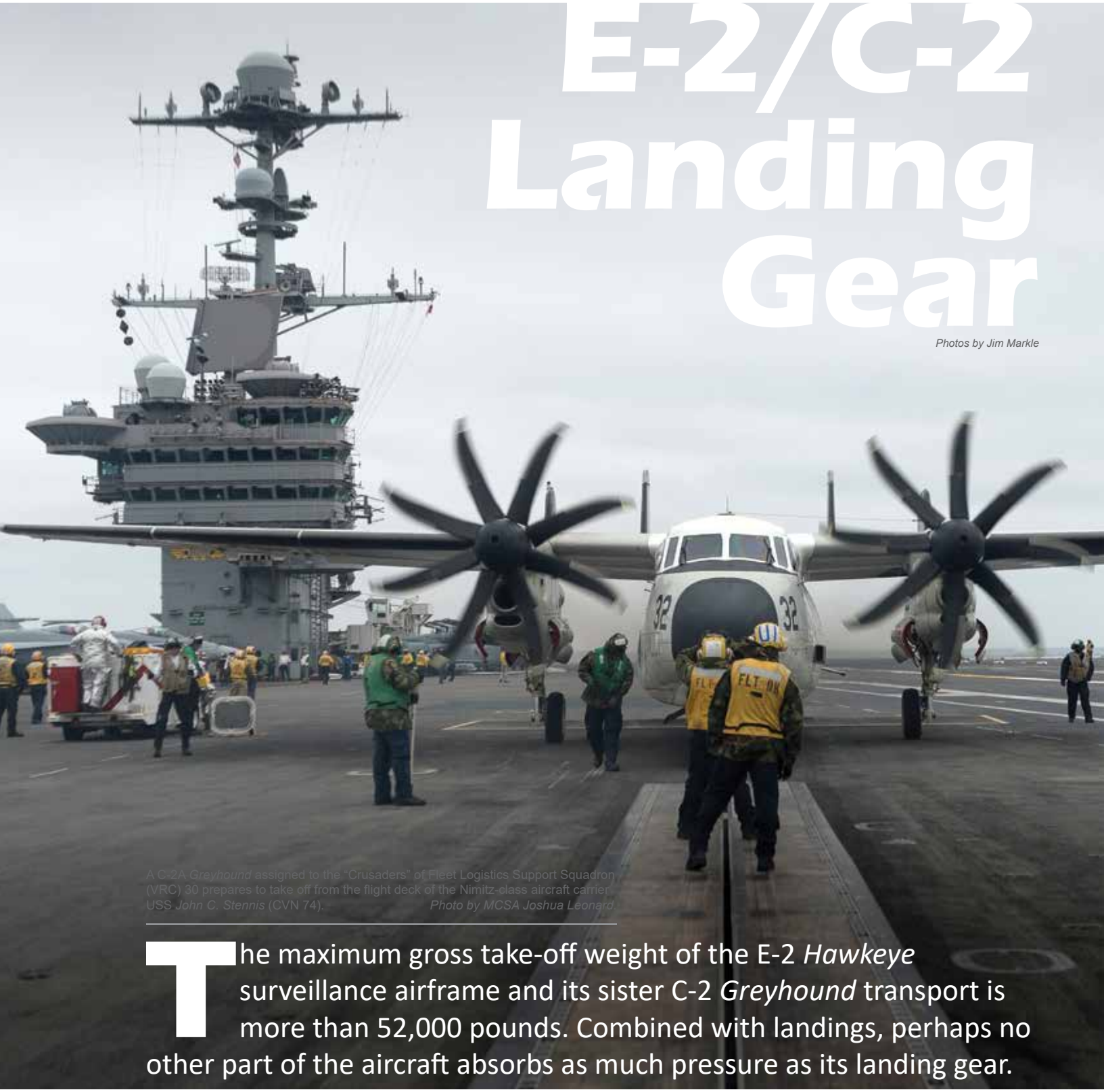



***About the Cover:***
An E-2D *Hawkeye* assigned to the "Seahawks" of Carrier Airborne Early Warning Squadron (VAW) 126 flies above the aircraft carrier USS *Harry S. Truman* (CVN 75). *Photo by MC3 Kaysee Lohmann*

An MH-60S *Sea Hawk* helicopter, assigned to the "Island Knights" of Helicopter Sea Combat Squadron (HSC) 25 transports supplies from the dry cargo and ammunition ship USNS *Wally Schirra* (T-AKE 8) to the amphibious assault ship USS *Wasp* (LHD 1) during a vertical replenishment. *Photo by MC1 Daniel Barker*

# E-2/C-2 Landing Gear

Photos by Jim Markle



A C-2A *Greyhound* assigned to the "Crusaders" of Fleet Logistics Support Squadron (VRC) 30 prepares to take off from the flight deck of the Nimitz-class aircraft carrier USS *John C. Stennis* (CVN 74). *Photo by MCSA Joshua Leonard*

The maximum gross take-off weight of the E-2 *Hawkeye* surveillance airframe and its sister C-2 *Greyhound* transport is more than 52,000 pounds. Combined with landings, perhaps no other part of the aircraft absorbs as much pressure as its landing gear.

Located in Building 472, the Fleet Readiness Center Southwest (FRCSW) landing gear shop is the sole FRC for overhauls and repairs to the Hawkeye and Greyhound nose and main landing gear.

"Landing gear are brought in for cause, like hard landings or fluid leakage, and now they are also brought in under the aircraft's planned maintenance interval (PMI) cycle," said aircraft mechanic David Pearson.

"Whenever an aircraft (E-2/C-2) comes in from Building 460, they remove the landing gear and the drag braces and bring them here for either a repair or overhaul."

Approximately seven years ago, the landing gear became part of the airframes PMI-2, a substantial disassembly of the aircraft which also includes removal of the wings, engines, and tail.

Landing gear are evaluated, reassembled and tested. Most are re-issued to the E-2/C-2 program in the Building 460 hangar.

Kits containing about 100 internal and external landing gear parts are used to streamline any overhaul process.

Pearson said that about 90 percent of all landing gear work is PMI, and of that, about 50 percent are repairs.

"For repairs we order the parts we need and reassemble the unit," said aircraft mechanic Rupert Linberg. "Depending on the repair it usually takes a couple of weeks."

Within the past three years, the landing gear shop increased its staff to 11 which includes contractor personnel.

Pearson noted that most of the repair and overhaul services to legacy F/A-18 and *Super Hornet* landing gear is done by private contractors and intermediate-level active duty personnel.

Meanwhile, the shop produced 20 landing gear last quarter, the highest throughput in the last two years.

"Our success is based upon the assistance we receive from our production control folks, engineering and quality assurance people and our supervisor," Pearson said.

Aircraft mechanics Lee Davison, right, and Jay Mamuyac (ARA-Tyonek) add hydraulic fluid to the shock absorber of an F/A-18 legacy *Hornet*.

Aircraft mechanic Eric Fountain strips the nose landing gear of an E-2C *Hawkeye* to verify the components serial and part number.

Aircraft mechanic Alisya Mahoney completes final preparations to the main landing gear of an E-2C *Hawkeye* before it is sent to quality assurance and production control.

ARA-Tyonek aircraft mechanic Jay Mamuyac drains hydraulic fluid from the shock absorber of an F/A-18 legacy *Hornet*.

## FRCSW Teammate Develops Fixture to Improve Plating Process

About six months ago, Fleet Readiness Center Southwest (FRCSW) plating shop work leader Binh Huynh was faced with a question:

Could a landing gear piston be salvaged by plating its inside?

Working with engineering and manufacturing Huynh developed a fixture for chrome plating the inside of the piston, not only salvaging the component, but foregoing the approximate $100,000 replacement cost, as well.

The piston, or bottom cylinder, acts as the bottom portion of an aircraft's shock struts where it is attached to the landing gear. The top cylinder is attached to the aircraft.

"We never had the capability of plating the inside diameter of the piston with chrome," he said. "The inside is tricky, but the outside is easy. We tried it first on a dummy piston and it worked."

Born in Saigon, Vietnam, the 44-year-old Huynh relocated to the United States at the age of 15 in 1988.

"My dad served with the south Vietnamese military and that's how we came here, as refugees," he said.

Having worked for the Boeing Co. for two years, and then six years operating a machining shop in West Covina established by his brother, Huynh developed the skills that qualified him to begin work as a contractor in the plating shop in 2012.

"I worked as a contractor for three years and then converted to a federal employee, and was promoted to the plating shop lead last year," he said.

Located in Building 472, he oversees the shop's 10 electroplaters who service the nose and main landing gear piston of the F/A-18 *Hornet/Super Hornet* and E-2 *Hawkeye*/C-2 *Greyhound* airframes.

All of the pistons are plated with chrome, cadmium and nickel.

"The pistons have approximately a four-inch diameter. We grind them to about 20,000th under size, then plate them and then they go to the machine shop for processing. It's really like painting, except we use metals," Huynh said.

The plating process is a lengthy one, requiring roughly 50 hours for the metallic application alone.

"At each process you have to bake them to release hydrogen which takes about 23 hours. And after you bake, you have to mask it because the piston is an L-shape and you only plate the barrel," Huynh noted.

During his visit in late June Commander, Naval Air Systems Command Vice Adm. Dean Peters recognized Huynh's innovation and the plating shop for its role in the landing gear overhaul and refurbishment program that marked its highest quarterly throughput of 20 landing gear in two years.

"We all have the same goal here, and that's to support the fleet," Huyhn said.

# FRCSW School Qualifies Navy Welders

Aviation Structural Mechanic 2nd Class Chase Weishaupt practices a T-weld on two pieces of stainless steel during exercises in the FRCSW welding school in Building 4.
*Photo by Jim Markle*


AM2 Wayne Balantac stands outside of the FRCSW welding school at Building 4 and holds the truck he created as part of the school's curriculum to develop the skills to handle basic to intricate welds which may be required during fleet operations. Made of aluminum, Balantac built the truck in four days after completing one month of training at the school.
*Photo by Jim Markle*

From repairing hitches on tow tractors to transition ducts in MV-22 *Osprey* aircraft, many shipboard repairs in the fleet require the skills of a qualified welder.

For more than 40 years the Fleet Readiness Center Southwest (FRCSW) welding school in Building 4 has provided Sailors and Marines the instruction, knowledge and certification to handle any essential welding projects which may arise in theatre.

The two-month long course totals 320 hours of instruction and is taught by instructors Jason Rice and Alex Pimentel. Both are certified by the American Welding Society (AWS).

Rice has been a welder for 30 years, and Pimentel, a former Marine, is a 2012 graduate of the FRCSW welding school and became an instructor two years ago.

Rice said that classes are typically a mix of four Sailors and four Marines and students earn AWS certification upon graduation.

"We have students from Japan, Hawaii, Italy, just about everywhere," he said. "The Sailors are either aviation structural mechanics or aviation support equipment technicians, and the Marines are usually welders or sheet metal mechanics."

Students are taught welding of four different metals: aluminum, stainless steel, mild steel (wrought iron steel) and Inconel, an alloy made of nickel, chromium and iron.

"Inconel is an exotic metal and is used on aircraft exhaust," Rice said. "It can get hot and cold many times and won't crack and is corrosion resistant, as well."

"One sheet of aluminum costs $150, while a sheet of Inconel is about $4,500, which is why it's the last metal we weld because of the expense. But the students must learn to work with it because about 90 percent of the H-60s and H-53s helicopter exhausts are made this metal."

Students are required to recertify their welding credentials yearly, either by retaking the course or submitting samples for analysis.

Instructors, as well, must recertify every five years.

The FRCSW school is one of three Naval Air Systems Command welding schools. The other two are on the East Coast.

# FRCSW Site Camp Pendleton Inducts Last AH-1W *Super Cobra*


An AH-1W *Super Cobra* attack helicopter with Marine Light Attack Helicopter Squadron 469, based out of MCAS Camp Pendleton, Calif., provides close air support during exercises at the Chocolate Mountain Aerial Gunnery Range. *Photo by Pfc. George Melendez*

The last AH-1W *Super Cobra* helicopter to undergo the Integrated Maintenance Program (IMP) at FRCSW Site Camp Pendleton awaits further processing outside of the hangar. The aircraft was inducted July 18 from Marine Light Helicopter Attack Squadron 775 (HMLA-775), and is scheduled to complete the IMP by the end of September and return to the squadron. *Photo by Jim Markle*

Artisans at Fleet Readiness Center Southwest (FRCSW) Site Camp Pendleton marked the end of an era July 18 with the induction of the last AH-1W *Super Cobra* to undergo the Integrated Maintenance Program (IMP).

The AH-1W is being retired and replaced with the newer AH-1Z *Super Cobra*.

"The technology is more advanced in the Z than the W," said Site Camp Pendleton manager Cary Mocanu. "It has better engines, and the airframe is more rigid and stronger. The W is primarily sheet metal where the Z is more cast aluminum parts."

Manufactured by Bell Helicopter, the AH-1W *Super Cobra* twin-engine attack helicopter was created for the Marines. For the past 32 years it has primarily been used in ground support missions and special operations.

The IMP was developed to keep the aircraft mission-ready by targeting the integrity of the airframe through two assessment events: Planned Maintenance Interval-one (PMI-1) and PMI-2.

Mocanu said that the AH-1W PMI-1 occurs every 50 days at which time the aircraft are disassembled and evaluated.

Prior to PMI-1, the squadron removes the aircraft's blades, and the site's artisans remove the intermediate and tail gear boxes, panels, engines and the transmission and inspect those areas.

"The fuel cells and crew seats are removed and all of the oil, fuel and hydraulic systems hoses are also changed during PMI-1," Mocanu said.

The AH-1W PMI-2 cycle is held every 78 days with inspections similar to those of the PMI-1, except the aircraft are also stripped using a particle media blast (PMB) and painted.

The Site Camp Pendleton staff of approximately 40 artisans and 12 contractors have a paint and PMB facility which provides a faster return of aircraft to the squadrons.

Damages outside of the IMP scope are reported to the squadron and are ordinarily repaired as in-service repairs (ISR).

Mocanu said that AH-1W ISRs averaged about 140 per year.

"A lot of those aircraft had the same discrepancies such as the transmission pylon channels, stub wing lugs, 214 bulkhead repairs, and landing gear supports. Many of these issues were the result of hard landings or fatigue to the airframe," he said.

The AH-1W IMP is scheduled for completion by the end of September when the aircraft will be returned to its squadron: Marine Light Helicopter Attack Squadron 775, 4th Marine Aircraft Wing.

Meanwhile, the artisans of Site Camp Pendleton will remain busy continuing IMP procedures to the AH-1Z and the UH-1Y *Super Huey*.

"We have plenty of work. We have Y and Zs coming up and should be putting out 40-50 aircraft a year within the next couple of years," Mocanu said.

# FRCSW and NAVAIR Exploring Blockchain Technology

*By George Blackwood*
*Logistics Management Specialist*


Vidal Nuno, work leader for the fuel cells installation shop in Building 94, opens a storage cage where ready-for-issue fuel cell parts are stored for legacy F/A-18 *Hornets*. A joint project by NAVAIR and FRCSW using blockchain technology will improve the efficiency of the distribution system for all parts within the naval aviation community.
*Photo by Jim Markle*

Naval Air Systems Command (NAVAIR) is exploring the use of "blockchain" technology to help track aviation parts at maintenance facilities across the country.

Tracking parts from their origin and understanding the history of flight-critical aircraft parts is a resource consuming process that drives up the cost to operate military aircraft.

To increase efficiency and save money, the Navy is working to change the way it tracks the lineage of parts.

Currently, when parts are delivered they are tracked with pen and paper on scheduled removal component cards that get manually entered into a database.

Through the use of permissioned blockchain technology, the Naval Aviation Enterprise is working toward a 21st century solution to aircraft maintenance logistics.

Indiana Technology and Manufacturing Company (ITAMCO) are the developers of a blockchain product called "SIMBA Chain".

SIMBA is a result of a Defense Advanced Research Project Agency (DARPA) Small Business Innovation project that looked into tracking secure messages using blockchain technology.

A Cooperative Research and Development Agreement (CRADA) allows Fleet Readiness Center Southwest's (FRCSW) Advanced Technology and Innovation Team to partner with ITAMCO and bring this technological innovation to the Navy.

Additionally, the agreement with ITAMCO allows the Navy to gain access to cutting edge chain code as well as innovative protocols that can quickly and securely recall data; setting the stage for the Navy to use blockchain technology to deliver large amounts of data securely. The technology will be a useful tool set among Navy, DoD and external industry partners.

In addition to assisting the Navy in the use of these software tools, ITAMCO will gain an understanding of various facets of the Navy, as well as a better understanding of how the supply chain operates.

The goal of the CRADA is to develop a conceptual architecture for what a connected and transparent supply chain could look like.

A major hurdle to successful implementation is information assurance (IA). IA is the practice of assuring the safety of information and managing risks related to the use, processing, storage and transmission of data.

Using ITAMCOs accreditation for a distributed information system is a sizable departure from the centrally-controlled database design the DoD currently operates.

Though the ability to manage large data sets is not inherent to blockchain, the Navy plans to combine file access tracking and blockchain into a technology bundle that will provide the capability to manage critical aircraft part life events and allow for custody of these events on a distributed ledger electronically. This will permit the Navy to reap the benefits of a more efficient system.

When all of the nodes supporting a supply chain become connected it increases potential vulnerability, so special consideration must be given to cyber-security.

Bringing experts together early in the development phase provides a better understanding of the risks and rewards of a connected distribution system. This will allow for sound decision making in an effort to ensure any data transmitted is well protected.

The Navy already has a trusted network, so blockchain technology would loosely resemble public blockchains.

Public blockchains start with zero trust and rely on computation power in the "proof of work" consensus method.

The Navy model will be a permissioned chain with a consensus mechanism requiring less computing power. Conceptually developing consensus methods that maintain the integrity of the data while providing for all stake holders will be a collaborative effort.

FRCSW is excited to be in the middle of this collaboration. As a Maintenance Repair and Overhaul facility that currently manages relationships with much of the Naval Aviation Enterprise, the command is well positioned to assist the Navy in reducing costs and increasing efficiencies for maintenance programs across the country and around the world.

An inside view of the furnace chamber which may reach temperatures exceeding 2700° F.
*Photo by Jim Markle*

# New Vacuum Furnace Heats Up FRCSW LM2500 Engine Program

Fleet Readiness Center Southwest's (FRCSW) LM2500 engine program will get a bump in production thanks to the recent installation of a new vacuum furnace in Building 379.

The LM2500 turbine is used by the Navy to power *Spruance* and *Kidd*-class destroyers, *Oliver Hazard Perry*-class frigates, *Ticonderoga*-class cruisers, and *Arleigh Burke*-class destroyers.

The $1.9 million furnace will be used to "stress test" LM2500 parts. The unit can heat up to 2,800 degrees. After heating and the engine's metallic components contract, technicians can look for any cracks or flaws and conduct further testing as needed.

It will not be used for the heat treating or plating of LM2500 parts.

Manufactured by the Seco/Warwick Group, the furnace was purchased via FRCSW's Capital Investment Program (CIP) which invests in new technologies and equipment to improve production efficiencies.

"The furnace was custom made for our use and took almost a year to manufacture," noted (CIP) project manager Martha Hoffman. "The equipment arrived May 15, and the sign off (acceptance) was July 2."

The furnace chamber may accommodate components up to 60 inches in diameter and height. It is operated through a Program Logic Control (PLC) interface system that will log and archive events through date, time and duration. The console will also notify the operator if the unit is faulting and location of the fault.

"The PLC is user-friendly. The operator will input the amount of time and temperature for the heating process and if or when the part needs to be turned," Hoffman said. "The computer will retain that information. So when another part comes in for treatment, the operator will just enter that part number or identifier and will be ready to go. This minimizes the room for error."

The furnace operates under a chill water and closed-looped system.

"We have a secondary tank for the water and one for the argon (cooling). It's all regulated by the PLC and the pump so the pressure is the same every time the furnace is used," Hoffman said.

In addition to maintaining consistent pressure, other safety features include an automatic shut down if the unit exceeds a set temperature or if the argon level falls below a set threshold or its flow is interrupted, and railings and walkways with harnesses for fall protection.

In June, approximately 20 FRCSW personnel completed a 48-hour training session conducted by the manufacturer.

The new unit replaces a model that was more than 50-years old with a four-year history of sporadic operation. Difficulty in maintenance and increasingly obsolete replacement parts often resulted in a 60-80 percent down time, causing some LM2500 work to be contracted out.

Hoffman said that the new unit will save the command about six months in turn-around time per part vice contracted workload, and that 12-15 components will be tested weekly.

FRCSW is scheduled to overhaul about 15 LM2500 engines annually.

# FRCs Slated for Production Quality Makeover

**Production quality throughout the Fleet Readiness Center (FRC) domain will undergo a transformation through a concerted effort from artisans to senior leadership by the end of this year.**

Fleet Readiness Center Southwest (FRCSW) Quality Manager Adam Kimmerly said that a COMFRC policy (COMFRCINST 48855.1) released late last year directed the formation of Integrated Quality Teams (IQT) as part of the FRC-wide Quality Management System (QMS).

The QMS targets production quality and delivery of products to the fleet.

"IQTs are an integrated product type structure which brings people from different competencies together to fulfill a specific task. And the task is to enforce quality in our industrial production shops," Kimmerly said.

"That will encompass everything from new item manufacturing to basically all of the depot-level production that we do here (maintenance, repair, and overhaul)," he added.

## *Tiers and Teams*

The IQTs will be divided into three tiers:

The Tier 1 team is at the COMFRC level and manages the overall program.

The Tier 2 team is located at each FRC and is led by the quality manager and consists of top-level leadership across the production industrial spectrum, including engineering, logistics and industrial operations, industrial production and COMFRC's industrial production, and safety and environmental compliance.

"These are the members that will manage the implementation of the COMFRC quality policy at the FRC level," Kimmerly noted.

The Tier 3 team is aligned to the production integrated product teams.

"For example, here we're going to have 11 IQTs. The first three we established are aligned to the processing and manufacturing side of things that includes plating, paint, machining, NDI, and heat treat --- kind of building our foundation and getting our QMS implemented," Kimmerly said.

Three IQTs were formed during the spring to manage component overhaul including avionics, hydraulics and dynamic components.

By the end of June three IQT leads will be assigned to the aircraft production lines:

- F/A-18 legacy, *Super Hornet* and EA-18G
- E-2 *Hawkeye* and C-2 *Greyhound*
- Vertical Lift.

Lastly, two IQTs will be established during the summer for all engines, the test line, voyage repair team, and FRCSW detachments.

All IQTs should be fully operational by Dec. 31, 2018.

"Each of the Tier 3 IQTs is led by an industrial engineer who has a background in process control, quality management, and continuous process improvement," Kimmerly said.

With a focus on Lean and Six Sigma, the foundations of AIR*Speed*, the engineers hold Green and/or are working toward Black Belt certifications, Kimmerly added.

## *Operational Targets*

The IQTs will target four operational areas identified by COMFRC to enforce production quality: personnel, technical publications, work documentation, and tooling and equipment.

From his office in Building 378 aboard Fleet Readiness Center Southwest, quality manager Adam Kimmerly is assembling Integrated Quality Teams (IQT) at the command as part of the FRC-wide Quality Management System to improve production and delivery of products to the fleet.

*Photo by Jim Markle*

Personnel issues will address staffing and training needs, and ensure artisans have the appropriate certifications and proficiency levels required for their jobs.

"We need good technical publications that are clear in what they are requiring, are available to the people who use them so they have access to the most current version of the tech pub, and are up-to-date with the latest and accurate processes," Kimmerly said.

Creating work documentation that accurately reflects the processes in tech pubs and provides artisans with clear instructions on what they are supposed to do, will provide traceability to what work was done.

"When an operation is completed it needs to be clearly documented on paper, or electronically, in the future. This way we can tell if a landing gear component was inspected properly and what the results of that inspection were, for example," Kimmerly said.

Reliable machinery and equipment must consistently be available to artisans for them to perform their work.

"How each of the IQTs focus on these things will probably vary a bit depending on what the major problems are on their areas of focus, and what's hindering production and impacting quality," Kimmerly noted.

## *An Overhaul On How We Do Things*

"In the past, the FRCs relied strictly on our industrial quality department to manage quality," Kimmerly said. "And after some of the quality escape experiences, it was decided that we need some degree of engineering involvement or oversight with respect to quality."

"Typically, in the aerospace industry, there is a quality engineering department and we haven't had that until now. So this is really a new structure and new alignment of quality to engineering."

Kimmerly stressed that the existing Quality Assurance (QA) department will not be altered.

"We need their support more than ever to help implement this quality management system, and provide their expertise in audits and in QA and product conforming verification," he said.

Getting a jump on the official release of the COMFRC policy, FRCSW established the first FRC IQT in June 2017 at its canopies and windscreen and flight controls shop. Since then, the shops have already seen benefits.

"In one case, the IQT identified a need for a design change to a part on an F/A-18 windscreen. The design was a little too thick causing the windshield assembly to delaminate and fail prematurely. The artisans knew that and often saw it, but that feedback never got back to engineering to trigger that change to happen. So the IQT helped to facilitate that feedback loop and helped to initiate that design change," Kimmerly explained.

"Also, some of the windshields were getting dented because the work stands they were being stored on didn't have the right padding in the right places. So we were causing discrepancy work orders to fix a problem that we were causing because our work stands were insufficient. That triggered a change to the work stands to reduce damage and improve the overall quality."

Kimmerly said that IQT leads will routinely walk through the shops to identify issues and problems the artisans may be experiencing and review quality data on a monthly basis.

"This whole structure is new and it is within industry standards to have quality engineers to manage this stuff," he said.

## FRCSW Environmental and Safety Complete

# ISO, British Standard Audits

Occupational health and safety specialist Chris Gibson, left, and National Technology Associates auditor Jeanell Bausback discuss safety procedures with electrician Ruel Dionisio in the Voyage Repair Team's spaces in Building 249 as part of the FRCSW Safety Management System's internal audit program. *Photo by Jim Markle*

To ensure its procedures are the best possible in its environmental and safety programs, Fleet Readiness Center Southwest (FRCSW) recently completed an International Organization for Standardization (ISO) and British Standard (BS) audit, respectively.

The audits were conducted by Intertek, which issued certificates of registration on June 7.

The ISO 14001 is the standard specification FRCSW follows for its Environmental Management System (EMS). The Intertec audit was an upgrade from the ISO 14001:2004 standard to the ISO 14001:2015.

The BS Occupational Health and Safety Assessment Series 180001 (BS OHSAS 18001:2007) is the standard the command follows for its safety management systems (SMS).

FRCSW established its EMS in 1999 and registered to the ISO 14001 environmental standard that same year as part of its efforts to improve environmental performance on a continual basis. The move distinguished the command as the first federal facility to register to the ISO 14001.

"The EMS is required in a lot of Navy installations, but it is Commander, Fleet Readiness Centers (COMFRC) who is asking us to maintain our EMS to that 14001 standard," said environmental engineer Shelli Craig.

She said that the 2015 standard requires continual improvement and that performance is measured and now reported to management.

To achieve the upgrade from the ISO 14001:2004 to the 2015 standard, auditors examined all work shifts comprising three years of data and looked for indications of continual improvement over that period. For the upgrade, the data had to indicate and prove that all of the elements of the standards that were previously set as goals were acquired.

"A big change between the 2004 and 2015 standard is now that top management owns the whole system. That includes the commanding and executive officers, the senior civilian and the executive steering committee. So, there's a lot more buy-in at all levels within the organization," Craig said.

Other changes reflected in the 2015 standard expands the EMS coverage and scope; requires interactions with external parties; and new documentation, legal compliance, and operational control requirements.

EMS extended staffing includes approximately 30 material management specialists with environmental collateral duties, 10 environmental reps, 17 members of the Environmental Program Office, and six chemical handlers who collect and dispose of hazardous waste.

The EMS oversees six different programs including air, water and pollution prevention. Four environmental protection specialists monitor the EMS in 20 command locations.

"Two of the four walk the entire site every morning on a daily basis," Craig noted.

Craig said that a recent chemical spill that required the EMS to ensure corrective actions had taken place.

"Chemical handlers collect liquid waste from various parts of the plant and transport it in large tanks to the industrial waste water treatment plant run by contractors here," she said. "We had a mishap that was contained, nothing escaped to the environment, but the contractors were also ISO-certified required by Naval Facilities Engineering Command (NAVFAC)."

"During the follow-up, I was told they would now lock off some of their connecting hoses so nobody could come to their site and offload waste without knowing about the waste profile. They are contracted for five other sites and made corrections there, as well."

Craig said that the EMS was cited for one major and three minor discrepancies during the Intertec audit. A few opportunities for improvement (OFI), or recommended actions to prevent findings in the future were also noted.

"Our facility gets continued and repeated high marks for housekeeping," she said. "This is a hugely meaningful strength in that the corners are clean, no hazmat all over the place, trash and hazardous wastes are clearly labeled, marked and separated. Good housekeeping speaks to many overlapping areas and gives auditors a sense of a tight ship."

## *The OHSAS 18001:2007*

Like the ISO 14001:2015, COMFRC created an instruction directing FRCSW to follow the OHSAS 18001:2007 standard. From 2014 to 2016, the command has worked to meet the directive.

Certification and conformance to the OHSAS 18001:2007 is overseen by the command's Safety Management System (SMS) which was formed in 2014.

The SMS operates under three primary components: An internal audit group which includes a second party auditor from National Technology Associates (NTA) for the evaluation of command spaces; an implementation team comprised of wage grade employees, managers, supervisors, and the same top management personnel who oversee the EMS; and a third party (Intertec) verification and registration to the standard.

The SMS established the criteria used in its internal audit.

"When we meet these criteria, we report up to COMFRC and advance through one of three levels. We're currently at the Bronze level," said occupational health and safety specialist Chris Gibson.

"We have about 30 people who manage various FRCSW buildings. They are called 'champions.' They meet with the safe site leads who are often wage grade employees that serve as shop safety representatives as a collateral duty to monitor the white communication boards throughout the plant that any employee can express their concern on to help clear any road blocks. And if the champion can't clear it, he'll go to the CO," Gibson said.

Gibson noted that the CO holds a monthly SMS meeting which includes an open forum for wage grade artisans to express their issues and concerns.

A successful SMS or EMS rely upon employee compliance within their daily operations, he said, and that conformance to a standard cannot be achieved without it.

"There's the specialists, managers and supervisors ensuring compliance. The conformance part comes in if the manager or supervisor is absent or transfers, and the employee acts as if they are still there getting that same message across every day."

Intertec's recertification visit consisted of five auditors for a day and a half who cited the SMS for one major and four minor discrepancies.

"I've updated some internal policies and procedures to address the findings," Gibson said. "And also changed policies and procedures of how I interact with the second party auditor and that her actions within the FRC are consistent with what the third party (Intertec) is looking for on their visits. The others were routine like updating a form."

"We needed to prove to them with audits, metrics, graphs and all documentation that we are doing exactly what we say we are going to do," Gibson added.

Within three years, the SMS must transition from the BS OHSAS 18001:2007 to the ISO 45001.

Meanwhile, both the EMS and SMS are adapting to the ISO's new Annex SL, a generic outline applicable to all management systems. With its 10 common clauses addressing issues that include operation, support and improvement, the annex is intended to increase consistency within management system structures.

The next Intertec audit for the EMS and SMS is scheduled for April 2019.

Occupational health and safety specialist Chris Gibson and National Technology Associates auditor Jeanell Bausback prepare to inspect an automated external defibrillator in Building 249 as part of the FRCSW Safety Management System's internal audit program. *Photo by Jim Markle*

# NAVAIR, FRCSW Hold Annual Diversity and Inclusion Day

Photos by Jim Markle

Teammates take a stroll through the classic car display at the annual NAVAIR Diversity and Inclusion Day June 15 aboard Fleet Readiness Center Southwest.

The Hung Vuong Sports Club performs a traditional Vietnamese lion dance during NAVAIR's annual Diversity and Inclusion Day.

The Teye Sa Thiosanner African Drum and Dance Company perform during NAVAIR's annual Diversity and Inclusion Day.

Naval Air Systems Command (NAVAIR) celebrated its annual Diversity and Inclusion Day June 15 aboard Fleet Readiness Center Southwest (FRCSW) to recognize the heritage and many cultures which comprise its active duty and civilian workforce.

Keynote speaker Claude Koehl of Intercultural Services, an organization that helps develop cross-cultural communication and leadership, spoke of the importance in keeping an open mind when developing first impressions.

"We need to go beyond the 'what we see is what we get'," she said. "Visual clues and auditory clues need to be questioned because we tend to be a surprising mix of characteristics, interests and experiences."

"For example, former heavy weight champion Mike Tyson's hobby is raising pigeons, the very symbol of peace. And NFL running back Herschel Walker practiced ballet as a means of training during his career," she said.

Koehl concluded her remarks by encouraging the audience to create a dialogue with others as a means to learn about the other person.

"There is no other way to go beyond first impressions and development an accurate three-dimensional read of our social partners unless we ask questions about who they are, how they see themselves and what they like to do," she said. "If we don't ask, we won't really know if they are actually similar or dissimilar to us."

Afterward, teammates enjoyed West African music and dance by the Teye Sa Thiosanner African Drum and Dance Company. The Hung Vuong Sports Club followed with a traditional Vietnamese lion dance and a kung fu exhibition. The Portuguese American Dancers of San Diego concluded the cultural presentation of the event.

Other festivities during the 90-minute program included a wide range of food from barbeque to Asian and Mexican cuisine and a classic car display.

This year's event was sponsored by the FRCSW Equal Employment Opportunity Advisory Committee and NAVAIR's Diversity Advisory Teams, and held at FRCSW's Building 325 tarmac.

# FRCSW Earns SECNAV Platinum Level Energy Award

Fleet Readiness Center Southwest (FRCSW) has earned the Secretary of the Navy's (SECNAV) Fiscal Year (FY) 2017 Energy Conservation and Water Management Platinum level award for FY 2016 environmental accomplishments.

FRCSW's efforts recognized by the "Platinum" level category designates a "an outstanding" energy and water conservation program, with "…an exceptional year for energy project execution."

The award is primarily based upon a reduction in utility consumption, noted FRCSW Energy Program Manager Benjamin Green.

During FY 17, the command reduced its combined use of electricity, natural gas and steam by 11.5 percent per square foot from an FY 15 baseline.

Green said that much of the utilities and energy reduction may be attributed to the formation of Energy Savings Performance Contracts (ESPC).

An ESPC is a contract between a federal agency and an energy provider, and does not require congressional funding or up-front capital. ESPCs enable agencies to make facility improvements while simultaneously gaining reduction in energy expenditures.

Energy providers or contractors and new equipment are paid through the energy savings costs generated by the ESPC. Additional energy savings beyond that belong to the agency.

FRCSW established four major ESPCs during FY 16 which addressed lighting and lighting controls; compressed air decentralization and upgrades to the Navy Primary Standards Laboratory heating, ventilation and air conditioning (HVAC); an HVAC retrofit to the calibration laboratory; and water conservation efforts.

The ESPC lighting upgrade included a retrofit of high bay 1,000 watt lamps in the Building 466 paint complex with dual occupancy photocell sensor LEDs, and a retrofit of more than 2,300 fluorescent fixtures with LEDs and occupancy sensors in three other buildings.

Totaling approximately $1,945,661, the lighting retrofits and upgrades will save almost $200,000 annually and over 1,348,000 kilowatt-hours (kWh) per year.

Work to the Navy Primary Standards Laboratory in Building 379 included removal of a single pass water system with a new chiller and boiler system. A solar thermal system for preheating the boiler and hot water heaters was also installed.

Installation of an upgraded wind tunnel system with a variable-frequency drive (VFD) and an energy management control system was added to the lab, as well.

The compressed air decentralization ESPC will garnish more than $1,290,000 in annual savings through the installation of 19 new compressed air plants throughout the command. The consequent air use reduction will exceed 323,160 kCF per year.

A comprehensive HVAC retrofit to Building 463 included the addition of a new chiller that uses oil-free centrifugal compressors and a VFD, and the replacement of 30 rooftop air handlers and conditioners with new efficient units. The move will result in a utility savings of approximately $1,026,000 yearly, and an annual electricity reduction of more than 3,390,000 kWh.

In water conservation efforts, the hot water mixing valves used for wash racks in the paint complex were upgraded to enable adjustable temperatures and shut off capability.

Zero-bleed cooling towers were installed in Buildings 463, 469 and 472.

The towers are used to remove calcium, magnesium and particulates from make-up water.

Water conservation programs will save the command over $61,000 in yearly utility savings and reduce annual water usage by 2,460 kGal.

Overall, the total utility cost savings from the ESPCs will exceed $2.4 million annually and a total energy savings of 8,613 British Thermal Units (MMBTU).

Total contract value, which includes equipment operation and maintenance costs for 13 years, is approximately $46,866,000. Guaranteed cost savings to the command is more than $47,658,000.

FRCSW was one of only eight naval commands recognized at the SECNAV Platinum level of achievement in energy and water conservation.

The SECNAV award includes $5,000 which may be earmarked toward future energy conservation efforts within the command.

# Awards & Retirements

## Civilian of the Quarter

### *2nd Qtr*

Ballesteros, Jesse

## Golden Wrench

Array, Eugene
Bagtas, Nimitz
Ferreras, Krystle
Lee, Frank
Twork, Christopher
Schultze, Michael
Valladares, Walter

## Retirements

Aguilar, Aaron J.
Albon, Jr., Robert W.
Alcobia, Roy
Bayani, Victor D.
Benjamin, Eric A.
Best, Glenn S.
Castaneda, Fernando J.
Clarke, Raina T.
Del Real, Jose R.
Del Rosario, Amor M.
Estes, Jr., Lawrence H.
Ferrell, Gregory G.
Flores, Marcos A.
Gonzales, Maria De Jesus
Graham, Craig C.
Grela, Gary L.
Grunseth, Timothy A.
Hartt, Joel E.
Hayes, Gary H.
Ke, Chau K.
Lamaitre, John J.
Le, Hanh T.
Malmsten, Matthew S.
Maltezo, Dalmacio A.
Manalili, Reynaldo L.
Marquez, Ramon A.
McCarley, Carol A.
McCormick, John P.
Miramontes, Louis A.
Morales, Cesar L.
Murphy, Joshua L.
Nichols, Gary M.
Oakes, Brian J.
Oleary, Sean P.
Payne, Jason M.
Pena, Reynaldo M.
Pham, Jimmy
Pham, Thong Q.
Phee, Marcelino R.
Phillips, David A.
Ramirez, Jose T.
Richardson, Robert L.
Rios, Francisco
Ross, III, Harold F.
Siqueiros, Albert L.
Thai, Hao
Thompson, Timothy N.
Trowsdell, James D.
Tuscano, Wilfredo A.
Whitehead, Frank
Williams, Jesse D.
Woo, Jennifer Y.
Wright, Adrian L.
Yambao, Jeremias S.
Yu, Loc P.

# A Century of Service! Our 100th Anniversary is Coming Up!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