Welcome from the Director, Strategy & Innovation

In this issue we explore the exciting frontiers of additive manufacturing, also known as 3D printing. Sophisticated additive manufacturing tools and techniques have increasingly demonstrated great potential to revolutionize the Department of the Navy’s logistics, supply-chain, and acquisition systems. Better still, there is a growing effort within the enterprise to make this technology accessible to more Sailors, Marines, and DON Civilians—motivating and empowering the innovators of the future.

Innovation, with its continuous cycle of self-assessment, future scanning, and adaptation, must continue to ensure the success of our naval forces. We look forward to enhancing our partnerships with our network of innovators in the Fleet and the Force to maximize current capabilities—and promote development of future concepts—for a more agile and adaptive DON.

Robert Marshall

New Pentagon Naval Additive Manufacturing Display

We are pleased to announce that, for the first time, additive manufacturing demonstration items are displayed in the Pentagon E-Ring! The items were installed between the 6th and 7th corridors, next to the SECNAV and UNSECNAV offices on the 4th floor.

(U.S. Navy photo by Mass Communication Specialist First Class Armando Gonzales/Released)

The pieces displayed are (L to R):

- Hand wheel with lattice structure, courtesy NSWC Dahlgren Division
- 60mm steel mortar round, courtesy NSWC Indian Head EOD Tech Division
- Quad-copter Unmanned Air System (UAS), courtesy USMC and MITRE
- MV-22B Osprey titanium Nacelle link and fitting, courtesy NAVAIR Additive Manufacturing Integrated Product Team

We hope you will have an opportunity to stop by and view the display on your next visit to the Pentagon. A big thank you to our innovation partners for making this idea a reality!
A Fabrication Laboratory, or “Fab Lab,” supports additive manufacturing, digital fabrication, and other parts manufacturing technologies which differ significantly from conventional methods. Fab Labs comprise a suite of digital fabrication and rapid prototyping machines, typically including a high resolution Computer Numeric Control milling machine, laser cutter, wood router, 3D printer, and the accompanying computers, software, and electronics for design, programming, and machine communications.

Additive manufacturing affords extraordinary agility over traditional manufacturing, procurement, and acquisition methods, enabling the DON in the future to radically enhance fleet life cycle logistics, increase the operational availability of our naval forces, and reduce total ownership costs.

The global Maker movement has found a home in the United States Marine Corps. It pairs modern and relatively inexpensive digital manufacturing tools with a Do It Yourself approach. By pairing the training and tools of the Maker movement with the Marine Corps’ culture of “adapt and overcome,” it catalyzes the initiative and experience of Marines to design and fabricate solutions to a myriad of future unknowable problems. This effort is known as Marine Makers.

Over the past 14 months, and through the direct support of the Secretary of the Navy’s Strategy & Innovation office, the Marine Corps has greatly increased its exploration of additive manufacturing, better known as 3D printing. In the long-term, 3D printing offers the possibility to reduce maintenance costs, increase equipment readiness, and improve combat effectiveness. In the near-term, the Marine Corps has begun testing 3D printing to solve current-day and low-risk challenges, such as those on aircraft, vehicles, weapons, and communications equipment. This testing is supported by the first service-level statement for 3D printing technologies, found in the “Interim Policy on the use of Additive Manufacturing” via MARADMIN 489/16. In addition to these equipment-focused benefits, the Marine Corps sees great value in creating an environment where Marines of all specialties can design, test, and create solutions to any operational challenge they face.

To facilitate this vision, the Next Generation Logistics Innovation cell (NexLog) of HQMC Installations & Logistics has established the Marine Maker initiative. This initiative connects and enables the rapidly growing community of Marine Makers. The components of Marine Maker include Maker Units, Maker Labs, Maker Mobile Training, and digital collaboration.
Ribbon Cutting Officially Opens New Submarine Innovation Lab

By LT Tia Nichole McMillen, Submarine Force Pacific Public Affairs

RADM Frederick “Fritz” J. Roegge, Commander, Submarine Force, U.S. Pacific Fleet (CSP), joined industry partners to open the CSP Innovation Lab (iLab) on 7 November 2016. Roegge announced the opening of the CSP iLab at Naval Submarine Training Center Pacific (NSTCP). The iLab is an unclassified space allowing submarine sailors to prototype Virtual Reality (VR) and Augmented Reality (AR) technologies and generate ideas for low-cost solutions to fleet training and operational challenges. Squadron commodores and unit commanding officers are highly encouraged to send their sailors to the CSP iLab to: See cutting-edge VR/AR technologies; Share ideas for using VR/AR onboard submarines; and Shape the future of submarine training, operations, and maintenance.

As RADM Roegge stated at the event: “It’s imperative that we create an innovative space for our personnel to identify, research, and use emerging technologies to address the Navy’s most pressing challenges.”

Full Article  http://go.usa.gov/x9tv6

Marine Corps Stands Up Rapid Capabilities Office

By MCWL/FD Public Affairs

The Marine Corps Rapid Capabilities Office (RCO) was recently established to accelerate prototyping, demonstration, experimentation, and limited equipping of emerging capabilities. Its ultimate goal is to increase the operating force’s survivability and lethality while informing future force requirements and investment planning.

The Marine Corps RCO seeks to reduce the time between requirement identification and delivery of warfighting capabilities to operating forces. Under the cognizance of the Marine Corps Warfighting Laboratory, the RCO draws upon support from Marine Corps Systems Command while collaborating with organizations such as the DoD Joint Test and Evaluation Program, Defense Innovation Unit Experimental (DlUx), Strategic Capabilities Office, DARPA, Marine Corps Operational Test and Evaluation Activity, PEO Land Systems (LS), and Marine Corps Special Operations Command.

Full Article  http://go.usa.gov/x9tcp

NAVAL INNOVATION ADVISORY COUNCIL

By LT Tia Nichole McMillen, Submarine Force Pacific Public Affairs

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Information Mobility – The NIAC has partnered with Defense Innovation Unit Experimental in Silicon Valley on several projects. One project for the Naval School Explosive Ordnance Disposal (NAVS COLEOD) Knowledge Management program aims to push recent intelligence and emerging trends from the battlefield to deployed forces and training environments.

In the coming months, the NIAC will be completing a second tranche of projects on mobility, data management, and predictive analytics. Stay tuned for updates!

Did You Know?

The Globe Valve Training Aid – a one-inch valve mock-up built for classroom training at Norfolk Naval Ship Yard – is being used to familiarize engineers and mechanics with valve operation and repair procedures. The original system costs $50,000 but NSWC Dahlgren Division engineers use 3D printing to manufacture an identical system for $500.

Source: Dr. John Burrow, Deputy Assistant Secretary of the Navy for Research, Development, Test and Evaluation (DASN RDT&E) at the DON Additive Manufacturing Showcase on 20 April 2016

Full Article  http://go.usa.gov/x9tv6

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2016 SECNAV Innovation Awards

We would like to thank the many DON Innovators who submitted nominations for this year’s Awards program! The caliber of nominations is truly impressive. Judges are currently reviewing submissions and we will release additional updates after they have concluded this process.

Challenge Winners/Finalists
Maj Thomas L. Waldron
LCpl Aaron J. Urbanski
Capt Christopher D. Luger
1stLt Warren W. Choi
LtCol Kenneth K. Goedecke
Capt Matthew M. Morse

Marine Corps Commandant’s Innovation Challenge Results

Congratulations to the winners of the recent Marine Corps Commandant’s Innovation Challenge! Launched in 2016, it solicits innovative ideas from Marines, Sailors, and government civilians from across the Marine Corps. Winners may be afforded the opportunity to work with the Marine Corps Warfighting Laboratory (MCWL) to discuss and develop a way ahead for implementing their innovative submission.

Read more about the selected ideas and details on the next Commandant’s Innovation Challenge in MARADMIN 667/16. The next challenge begins March 2017.

Marine Corps Award for Logistics Excellence in Innovation

The Deputy Commandant for Installations and Logistics is pleased to announce the results for the Fiscal Year 2016 Marine Corps Award for Logistics Excellence in Innovation. The Marine Corps Logistics Organization of the Year for Innovation is 1st Maintenance Battalion, Combat Logistics Regiment 15, 1st Marine Logistics Group, I Marine Expeditionary Force, Marine Forces Pacific.

Sea-Air-Space Exposition 2017

Meet the DON Innovation team at the Navy League Sea-Air-Space Exposition from 3-5 April 2017 at the Gaylord Convention Center! The Sea-Air-Space Expo was founded in 1965 to bring together the U.S. defense industrial base, U.S. private sector companies, and key military decision makers for an annual innovative, educational, professional, and maritime event in the heart of Washington, DC. Sea-Air-Space is now the largest maritime exposition in the U.S. and an invaluable extension of the Navy League’s mission of maritime policy education and sea service support.

For more information on Sea-Air-Space 2017, click here. Look forward to seeing you at the event!

History of Innovation in the DON—Making a Difference

When the Navy Built Airplanes—and More

By Randy Papadopoulos, Ph.D.

Just under a century ago, the United States joined the Entente Powers fighting what we now call World War I. That conflict saw America rearm quickly, ramping up production of weapons, especially aircraft. To meet an urgent need, Secretary of the Navy Josephus Daniels ordered establishment of the Naval Aircraft Factory (NAF), near Philadelphia, Pennsylvania.

In March 1918, the facility’s first H-16 flying boat flew. Built under license from the Curtiss Company and delivered less than seven months after the secretary’s order, the same plane operationally deployed to England the next month. That rapid delivery, less than 15 years after the world’s first airplane flight, showed the flexibility of the government-run facility.