



# AIR

**CONTROL THE SPECTRUM  
CONTROL THE FIGHT**



*Electronic Warfare (EW) Center at Naval Surface Warfare Center, Crane Division (NSWC Crane) provides a critical mass of co-located leadership to offer innovative technical solutions across Air, Ground and Maritime Domains.*

*EW Center's Air Domain experts support the Warfighter by providing Electronic Attack, Electronic Protection and Electronic Support in the area of Air Electronic Warfare.*

## SUPPORTING THE WARFIGHTER

Infrared/Radio Frequency (IR/RF) Systems Technologies experts at NSWC Crane design and develop effective and reliable infrared countermeasures (IRCM), countermeasures systems, missile warning sensors, laser-based countermeasures, and pyrotechnics, which protect Warfighters and aircraft from heat-seeking missiles by confusing the missiles' infrared guidance system. Since 1970, the EW Center has held primary IRCM leadership roles, and today its experts develop every airborne expendable countermeasure in the Navy and Marine Corps inventory.

NSWC Crane Air EW experts support numerous systems on platforms including the newly deployed EA-18G Growler EW aircraft. Crane provides extensive sustainment capabilities to keep the AN/ALQ-99 Tactical Jamming System (TJS) and the EA-6B Prowler reliable and effective for Warfighters in theater. Other systems the experts support include the C-130 variants, EP-3 Aries II and P-3 Orion.

Airborne Electronic Attack (AEA) and Airborne EW Defensive Systems experts provide support for airborne and Intelligence, Surveillance and Reconnaissance (ISR) Systems, enabling critical electronic intelligence (ELINT).



To address Warfighter needs directly, EW Center personnel also complete regular deployments. Forward deployments in theater and wing Commands allow experts to alleviate immediate Warfighter concerns. They also afford the opportunity for NSWC Crane personnel to offer more advanced, hands-on fleet training for sophisticated EW systems.

Beyond providing protection to current Warfighters, Air EW experts are dedicated to tracking and analyzing threats to anticipate and meet next-generation Warfighter needs.

## PRODUCTS AND SUCCESS STORIES

Supporting one of the largest EW initiatives in history, the EW Center provides significant engineering and logistics subject matter expertise for the Next Generation Jammer (NGJ) program. Assigned Principal Investigator for the Technical Integrated Product Team, NSWC Crane assisted in the completion of the NGJ Analysis of Alternatives in 2009 and continues to serve as the program office's Principle Investigator today.

EW Center is leading the Communications Electronic Attack with Surveillance and Reconnaissance (CEASAR) development. CEASAR is being utilized by the U.S. Army Quick Reaction Capability Effort to fill an urgent need for an AEA capability for use in Irregular Warfare missions to counter existing and emerging threats.

As the Project Lead, NSWC Crane developed the Improved Tactical Air-Launched Decoy, Jamming Variant (ITALD-J). Warfighters use the system in offensive operations to produce false targets with realistic tactical characteristics, confusing airborne and surface-based defenses.

NSWC Crane provides IRCM and IRCM Dispenser systems to offer significant Warfighter protection on numerous aircraft. Assisting in the first Department of the Navy Large Aircraft Infrared Countermeasures (DoN LAIRCM) installation on the CH-53E helicopter, NSWC Crane is a leader in IRCM solution development and testing for multiple airborne platforms for all of DoD.



# AIR

## CUSTOMERS AND PARTNERS

Primary NAVAIR customers include:

- *Advanced Composite and Fabrication Repair Facilities*
- *H-53 Heavy Lift Helicopters Program Office (PMA 261)*
- *Maritime Surveillance Aircraft Program Office (PMA 290)*
- *Commercial Derivative Aircraft Program Office (PMA 207)*
- *Advanced Tactical Aircraft Protection Systems Program Office (PMA 272)*
- *F/A-18 and EA-18G Program Office (PMA 265)*
- *AEA Systems and EA-6B Program Office (PMA 234)*
- *Aviation Support Equipment Program Office (PMA 260)*

NSWC Crane partners with numerous government organizations, including other Warfare Centers, Naval Air Station Whidbey Island, Camp Atterbury Joint Maneuver Training Center and Muscatatuck Urban Training Center. These partnerships leverage current capabilities of each activity to increase Warfighter protection.

Teaming with private industry, including Northrop Grumman, Exelis Inc. and Science Applications International Corp., further ensures that NSWC Crane provides the best service to its customers and Warfighters.

Educational partnerships further enhance NSWC Crane's expertise and capabilities. The EW Center collaborates with top academia including The Johns Hopkins University Applied Physics Laboratory, Purdue University and Penn State Electro-optics Center to research and develop innovative solutions.



## LEADERSHIP, FACILITIES AND CAPABILITIES

EW Center's more than 800 civilian, contractor and military personnel at NSWC Crane provide Air EW expertise across multiple disciplines. Leadership assignments include Integrated Product Team Lead; Fleet Support Team; Cognizant Field Activity; Project Lead; and Principal Investigator.

Air EW experts provide innovative application of system design and development engineering to meet evolving Warfighter mission requirements. Other capabilities include:

- *Science and Technology Transition*
- *Advancement in Areas of Conventional Countermeasures and Advanced Laser Countermeasures*
- *Acquisition Engineering and Logistics*
- *Automated Test Equipment (ATE) and Test Program Set (TPS) development*
- *Rapid Prototyping*
- *Modeling & Simulation Capabilities in:*
  - Mechanical and Structured Modeling and Finite Element Analysis*
  - Computational Fluid Dynamics*
  - RF Antenna Pattern Modeling of Airborne systems*
  - Optimized IRCM Dispenser Locations:*
    - \*IRCM Engagement Scenario Modeling
    - \*RF Engagement Scenario Modeling

Electronic Warfare Center offers more than 260,000 square feet of dedicated Air EW offices and laboratories. Specialized Air EW facilities include:

- *IRCM Development and Prototype Test Facilities*
- *Dedicated Classified Secure Laboratories*
- *Advanced Composite and Fabrication Repair Facilities*
- *Mobile EW Systems and Signal Simulators*
- *10k and 100k Clean Room Facilities*
- *Four Anechoic Chambers*
- *Wind Tunnel Test Facility*
- *Outdoor Antenna Test Range*

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