

Mission. Completed in 2011, this two-story conference facility provides a focal point of the Navy's Weapon and Armament RDT&E. It combines state-of-the-art meeting rooms for symposia, as well as office bays, management suites, and secure laboratory spaces.

Unique Features. The facility was designed to achieve Low-Energy Electron Diffraction (LEED) Silver Certification and incorporates anti-terrorism / force protection measures in the building and site design.

RDT&E Main Facilities

- **Conference Facilities.** The building includes eight conference rooms, five of which seat up to 55 people each, and three rooms seat 13 to 15 people each. Rooms can be combined to seat as many as 300. In addition, the facility features a technical library, shower rooms, break / lunch room areas, a communication room, and SIPRNET communication room. The center houses nonsecure as well as controlled and secure access areas. Secure access is located in the west wing, which contains 14 suites and 7 open office bays.
 - **Audio Visual.** There are five conference rooms containing audio and video teleconferencing capabilities. The rooms are fully equipped with six projectors for laptop projection, lectern microphones connected to the podiums, table microphones, white boards, printers, video graphics array (VGA) / high-definition multimedia interface (HDMI) connectivity.
- **Office Bays.** Three of the open office bays and six management suites are located on the first floor level, while four office bays and eight management suites are on the second level. The three remaining office bays are laid out in the single story north wing. This wing is accessible through a secure suite corridor, which also accesses the secure engineering suites. Open office areas with modular furniture cubicles are provided for technicians, scientists, and engineers.
- **Vehicle and Trailer Access.** Access is located on the east end of the structure.
- **Bridge Cranes.** There are bridge cranes and monorails hoist/ cranes in many areas.



Engineering Laboratories / High Bay Facilities. The east wing houses secure engineering laboratories and secure high bay laboratories. In addition, the building has electrical laboratories with raised flooring and a dedicated HARM missile laboratory.

Programs Using McLean Laboratory

- | | |
|---|--|
| <ul style="list-style-type: none"> • Advanced Medium-Range Air-to-Air Missile (AMRAAM) • Evolved Sea Sparrow Missile (ESSM) / Sparrow • High-speed Anti-Radiation Missile (HARM) / Advanced Anti-Radiation Guided Missile (AARGM) • Intercept Technology • Joint Standoff Weapon (JSOW) • Long-Range Anti-Ship Missile (LRASM) • Naval Sea Systems Command (NAVSEA) Project Management • Naval Strike Missile (NSM) • Precision Attack Weapons System (PAWS) | <ul style="list-style-type: none"> • Rolling Airframe Missile (RAM) • Stand-off Land Attack Missile - Expanded Response (SLAM-ER) / Harpoon • Standard Missile (SM) • Tactical Weapons Office • Targets • Theater Ballistic Missile Defense (TBMD) • Threat-Signal Processor-in-the-Loop (T-SPIL) • Threat Systems • Tomahawk • Warfighter Response Center (WRC) |
|---|--|

Size / Description / Scope. 178,000 SF of office, laboratories, and conference rooms. 50,000 SF are devoted to general engineering laboratories. **Plant Value:** \$76M+.

Major Facilities

HARM / AARGM Laboratories. The HARM and AARGM have specialized facilities within McLean Lab. The ARM TPO mission is to support the AGM-88 B/C/E series of air-to-ground missiles to the U.S. Navy (USN), USMC, U.S. Air Force (USAF), and FMS/cooperative partner fleets.

- Update electronic intelligence (ELINT) data supporting all variants in the U.S. Fleet
- Provide maintenance and problem resolution for the Command Launch Computer (CLC) and mission planning software
- Provide specialized subject matter expert (SME) training for deployed and training units including advice on mission planning, weaponing, and emerging threats
- Sponsor ARM University (ARM U). This quarterly, week-long class provides graduate-level training to squadron SMEs. Activities include lectures, exercises, tours, and interactions with our AGM-88 and ELINT SMEs. Training provides in-depth exposure and examples of real-world ARM issues. The TPO also provides critical acquisition support to the fleet through PMA-242.



Facilities include a secure room for modeling/simulation. Secure SIPR ports are available as well as a secure AARGM-only connection to the prime contractor ATK. Another secure room hosts our CLC lab, and the Advanced HARM Workstation (AHWS) is used for testing ELINT products. The secure high bay hosts our Captive Air Training Missile assembly and test operations.

Long Range Anti-Ship Missile (LRASM). LRASM is the next generation, semi-autonomous, precision-guided Anti-Surface Warfare (ASuW) weapon designed to meet the needs of USN and USAF warfighters from standoff in a robust threat environment. LRASM is an accelerated acquisition program scheduled for early operational capability in 2018. NAWCWD provides engineering, test and evaluation, aircraft integration, M&S, and product support.

The LRASM Kill Chain Test bed (KCT) is an all-digital, end-to-end system-of-systems simulation used to model the entire kill chain from threat surveillance to weapon employment and battle damage assessment. It is the primary tool being used to evaluate overall system performance over a wide range of scenarios. This distributed software environment uses the Test and Training Enabling Architecture (TENA) to bring together new and existing models in either real- or non-real-time simulations depending on the level of fidelity selected. The KCT is hosted on a small cluster of high-end PCs located in the LRASM laboratory in the new McLean facility.

Threat-Signal Processor-in-the-Loop (T-SPIL). T-SPIL models IR-guided surface-to-air and air-to-air threats using actual threat signal-processing electronics responsible for target tracking and weapon guidance. Its assessment capability spans the entire missile-aircraft engagement envelope from threat search-and-acquisition through flyout and terminal encounter.



Threat Simulation Integration High Bay Facility. The Electronic Threat Simulation Branch designs, fabricates, and supports surrogate threat systems for use on combat training ranges. These systems can be as simple as a physical shape or as complex as an electronic package that mimics the RF signature of military threat systems. These surrogates are currently used on multiple military ranges to support joint-service training operations. Recent enhancements to the systems allow for the presentation of a realistic target heat signature that support multi-spectral imaging sensors, slave the emitter antennas to range data, and allow the system to continuously track and illuminate aircraft during training exercises. The electronics are a blend of commercial off-the-shelf components and custom-designed circuitry that follow industry standards for documentation, development, and delivery.

Warfighter Response Center (WRC). WRC is a nationally recognized Tier II center that provides engineering and logistics support and rapid solutions for the warfighter. WRC uses the SIPRNET with reactive Distance Support (DS) capability for operations, maintenance, and support personnel to have accelerated access to authoritative information sources, tools, and technical expertise required to efficiently and effectively execute operations globally.



- **Unique Features.** The WRC serves as an emergency operations center providing expertise and direction for Level 1 support during any crisis, man-made or natural disaster. The WRC staff has SMEs in using common message processor (CMP). The staff conducts annual training in writing naval messages and provides support to numerous weapon programs regarding classified data communication. The unclassified portals have received hundreds of thousands of visitors over the past 10 years of WRC operation. Classified portals receive thousands of visits annually.

- **Combat Support.** When America was attacked on 11 September 2001, the Weapons Division immediately set up a command center. In only three weeks, walls were removed, classified and unclassified networks and systems were set up, and video teleconferencing and other communications systems were installed and operational. Since then, WRC has supported the worldwide deployments of personnel (active duty reservists) for the Tactical Dissemination Module and Rapid Precision Targeting System (TDM / RPTS) and the Digital Precision Strike Suite (DPSS).

For example, during Operation Iraqi Freedom, TDM / RPTS successfully executed more than 2,000 combat missions to multiple aircraft, and WRC sustainment support was integral in ensuring equipment and personnel were able to perform and execute situational awareness (SA) missions, thus providing ground forces with SA imagery products to identify and locate improvised explosive devices and targets of opportunity.

- **Size / Description.** WRC encompasses one of four unique classified secure spaces totaling 2,000 SF. The modular facility includes a 15-person classified conference room hosting a secure video telephone conference (S/VTC) and secure telephone equipment for discussions and meetings. The SIPR Café hosts SIPR workstations allowing complete classified e-mail and access to the SIPR gig for research and communications with all warfighters and various laboratories throughout the globe.
- **Instrumentation.** WRC has six SIPRNET terminals with secure e-mail, file transfer protocol (FTP), S/VTC services, and full support for recall, logistic, and deployment of reservists.

Historical Significance. The new McLean Laboratory is named in honor of William B. McLean (1914–1976), the famed U.S. Navy physicist who conceived and developed the first heat-seeking Sidewinder missile. Even today, it is still the world's premiere air-to-air missile. McLean earned a PhD in 1939. During World War II, he worked on ordnance equipment and testing at the National Bureau of Standards in Washington, D.C. Following the war, he moved to NOTS, Inyokern / China Lake, California where he led the project team developing the Sidewinder from 1945–1954. In 1954, he was appointed as technical director. For his brilliant work, he was formally recognized by President Eisenhower. A Memorial Award for Dr. William B. McLean was established in 1968 to recognize creativity in employees who furthered the mission with significant inventions. In 2008, the Navy announced that the dry cargo ship USNS *William McLean* would be named in his honor.

