

Sophisticated cutting edge technology used in new laboratory

by Mary F. Flores

A state-of-the-art facility with two large aircraft bays, two briefing rooms, three storage rooms for equipment and classified information, an arms vault, a network and communications room, and other sophisticated equipment make up the area surrounding the newly developed Weapons System Test and Integration Laboratory (WSTIL).

The \$5 million laboratory was developed to test various types of sensors and upgrades on aircraft and allows test engineers to identify problems associated with the integration of air-platform weapons systems and onboard avionics systems. It can aid to implement corrective actions and record them.

Other testing capabilities in the laboratory include a data acquisition and analysis subsystem, a data/video archive and retrieval subsystem, and a mobile global positioning system (GPS) that can be relocated from one bay to the next. An array of computers and large cables running along the walls from one room to the next fill the facility.



William Packham, deputy program manager, demonstrates how the new equipment in the newly developed Weapons System Test and Integration Laboratory will enhance their capabilities. (Photo by Mary Flores)

To create real-life scenarios for testers, the laboratory is equipped with simulators to simulate wind speeds at various altitudes amid changing atmospheric conditions.

This allows engineers and test directors within the Air Combat Systems Test Directorate to provide good customer service to test engineers, providing them with real-time data as

information is recorded for future analysis. WSTIL facilities enable testers to evaluate the performance, response and sensitivities of software algorithms by precise control of avionics processor inputs and automated real-time and post-test analysis.

The project took three years to complete and was overseen by William Packham, Test Officer at the Air Combat Systems Test Directorate and deputy program manager for the WSTIL. He worked closely with the Program Manager Instrumentation, Targets and Threats Simulators which funded the project. Many YPG offices contributed to making the lab into a reality.

"One of the best things about the WSTIL is that test scenarios can easily be repeated in the future with a click of a button," Packham said. "The WSTIL enables engineers to find catastrophic problems with equipment while safe on the ground rather than in the air." During a flight test, if a test rocket was accidentally fired from an aircraft, he explained, and went in the wrong direction, it could be both costly and deadly if it was the real thing.

Located inside a large hangar, the WSTIL has one data analysis center for data collection and two separate test control centers equipped with five computer workstations. Engineers and testers are able to view real-time data while watching the performance of the test at the same time.

For the customer's privacy, the WSTIL was designed with test control centers on either side of the data analysis center for competition sensitive tests. This allows two customers competing for the same contract to test simultaneously.

Packham says management officials are hoping to expand WSTIL testing capabilities in the future to test vehicles, parachute delivery, guidance systems, and other types of equipment.



A ribbon cutting ceremony was held in January at the new Weapons System Test and Integration Laboratory. Left to right are Darrell Wright, project director for Instrumentation Targets and Threats Simulators (ITTS), Bill Packham, aviation test officer, Col. Stephen Zarbo program manager for ITTS, and Lt. Col. Stephen Milton, commander, Yuma Test Center. (Photo by Yolie Canales)



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