

# JOINT THEATER MISSILE DEFENSE/ATTACK OPERATIONS (JTMD)



## Joint Test and Evaluation Program

Authorized Manning:	53
Total JT&E Budget (TY\$):	UNK
Other Funding Sources (TY\$):	UNK
Charter Date:	4QFY94
Completion Date:	3QFY99

## Lead Service

Air Force

## JT&E DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The Joint Theater Missile Defense Attack Operations (JTMD AO) Joint Test Force (JTF) was chartered to investigate and evaluate the U.S. capability to conduct joint TMD attack operations using existing and near term (FY98) systems and CINC-approved/proposed TMD architectures. The JTMD AO JTF contributes to three of the four *Joint Vision 2010* operational concepts: *precision engagement*, *full-dimensional protection* and *dominant maneuver* forces. The JTMD AO JTF incorporates state-of-the-art technologies in its sensors; weapons; and battle management, command, control, and communications systems. The JTMD AO JTF will help ensure that Joint Forces enjoy *full spectrum dominance* in the theater by being a primary contributor to *full-dimensional protection* of the *dominant maneuver* forces through *precision engagement* of threat ballistic missiles.

An integrated test concept was developed that includes the use of existing data, leveraged field testing, and simulation. Operational and developmental test data is being acquired for sensors, Command, Control, Communications, and Intelligence (C<sup>4</sup>I), and attack systems to establish the operational and technical capabilities for these systems. Field tests are used to fill gaps in the data available for these systems. The collected data is instrumental in ensuring that the capabilities of these systems are accurately reflected in the simulation models. A combination of field testing and simulation (distributed and constructive) provide the primary tools to investigate JTMD Attack Operations.

## **BACKGROUND INFORMATION**

Joint Theater Missile Defense (JTMD) is the integration of joint force capabilities to find targets, task resources, and attack and kill the enemy's theater missile capabilities before they can be brought to bear on friendly forces, critical assets, and areas of vital interest. This requires the capability to attack theater missiles with an appropriate mix of theater missile defense (TMD) weapons. TMD activities are currently broken into three distinct areas: attack operations, active defense, and passive defense. An integrated C<sup>4</sup>I architecture knits these elements together to form the total TMD operational capability.

*“JTMD is chartered to employ multi-Service equipment and personnel to conduct a JT&E to investigate and evaluate the capability of U.S. Forces to conduct TMD attack operations employing existing and near term (FY98) systems. JTMD will utilize CINC-approved/proposed architectures and an appropriate mix of simulation experiments and field testing to conduct an evaluation.”*

## **TEST & EVALUATION ACTIVITY**

The Phase I Attack Operations Simulation Network (AOSN), conducted in July 1996, was designed to provide the necessary data to evaluate TMD architecture, tactics, techniques, and procedures for a Southwest Asia scenario. Phase I AOSN included a carrier battle group, amphibious ready group, limited Air Force assets, and Navy Special Operations Forces. Phase I results are documented in a classified JTMD Attack Operations interim report.

The Phase II and III AOSN conducted in July 1997 used the same Southwest Asia scenario as Phase I, in which a U.S. Joint Task Force has responded to the threat country's positioning of its land, sea, and air forces and the deployment of its theater missiles (ballistic and cruise). For Phase II, the centers of the Joint Task Force were an Air Force Air Expeditionary Force and a Naval Task Force, comprised of a Carrier Battle Force and an Amphibious Ready Group (ARG). The Air Force had an Air Operations Center commanding a composite force of fighters, transport, tanker, command and control, and sensor support aircraft. Naval aviation in-theater included carrier, ARG, and land-based fighters and support assets. In addition, the Joint Task Force had access to national assets allocated for direct support of the theater commander's objectives. Phase III added additional sensors, command elements, and attack systems associated with land-based Army and Marine units. Phase II/III results are documented in a classified JTMD Attack Operations interim report.

Phase IV is designed as an in-depth study of the up-front actions in the attack operations process, Intelligence, Surveillance, and Reconnaissance. Phase I-III activities concentrated on the C<sup>4</sup>I and attack system components of attack operations and was not designed to explore alternative sensor management techniques nor the effects of intelligence preparation of the battlespace enhancements. It has become evident that focused testing is necessary to characterize and identify potential alternatives, which might enhance U.S. forces' capability in these areas.

Phase IV activities assessed attack operations as they relate to the Northeast Asia theater. The assessment capitalized on results and lessons learned from the three previously conducted AOSN activities. A detailed investigation of the Intelligence, Surveillance and Reconnaissance process and potential alternative solutions were assessed through constructive simulation via a sequence of man-in-the-loop test events. Seventh Air Force personnel conducted the exercise over a six-month period in-theater with participation. Phase IV ended in December 1998.

For leveraged testing opportunities, the JTF operationally deployed a SCUD battalion consisting of six TEL launchers together with associated missiles, decoys, and support vehicles. These assets were used to gather sensor and attack system data for the JTMD attack operations data base. An important by-product was a unique training opportunity to the operational forces participating in the test events.

The final JTMD report is currently in draft. The report and findings will not be released until the formal review is complete and the report approved. The JT&E organization has been formally transitioned into the Joint Theater Analysis Center run by the Atlantic Command and the Air Force.

## **TEST & EVALUATION ASSESSMENT**

From the broad JTMD Joint Test Force mission statement, four critical operational issues have been identified. These were developed specifically to assist in the subsequent specification of achievable program objectives. These critical operational issues are:

- Do near term sensors adequately support TMD Attack Operations?
- Do near term C<sup>4</sup>I effectively contribute to TMD Attack Operations?
- Do near term attack systems effectively execute TMD Attack Operations?
- What net impact does the conduct of TMD Attack Operations have on systems with multiple mission support requirements?

The first three critical operational issues focus attention on the three main divisions of systems that must be integrated to conduct successful JTMD Attack Operations. The fourth critical operational issue addresses the impact on individual system capability to support other requirements when the assets are assigned to support JTMD Attack Operations. The critical operational issues can be stated more concisely as:

- Can we find theater missile elements?
- Can we kill theater missile elements?
- Can we pass time critical information to an attack asset?
- What is the cost of investing critical theater attack resources into JTMD Attack Operations vice other mission areas?

## **CONCLUSIONS, RECOMMENDATIONS, LESSONS LEARNED**

Joint attack operations against theater missiles (ballistic and cruise) may have a potential for success if the persistent issues of accuracy and timeliness can be solved in a networked system of systems. Network centric warfare involves linking multiple sensor, shooter, and command and control elements into an interoperable whole or unit. Achieving both the required accuracy with the required speed and timeliness is the central challenge for such systems. Combatant and operational commands should continue training in missile target sets, add empirical sensor data to current data bases, support joint intelligence planning, and improve utilization of theater sensors.