Weapons Impact Scoring System

The Weapons Impact Scoring System (WISS) provides pilot training for delivery of air-to-ground ordnance and ship's crew operational proficiency in the delivery of ship-to-shore gunfire.

WISS is an electro-optical training system designed to improve aircrew proficiency in the delivery of air-to-ground ordnance and ship's crew operational proficiency in the delivery of ship-to-shore gunfire. By computer processing impact video taken of the target area, the WISS determines the position of ordnance impacts relative to a known target location. The WISS is designed to accurately measure the impact location of air-delivered ordnance with respect to the target center. The system is adaptable to ordnance type (usually bombs, rockets and mines) and delivery method (air, surface or subsurface). The WISS is capable of scoring impacts on a variety of target types.

WISS scoring console

WISS system characteristics and capabilities include:

- Accurate bomb scoring
- Variation of weapons
- Variation of targets
- Manual scoring
- Real-time visual display
- Standardized database archival and retrieval
- Integrated facsimile transmission
- Asynchronous serial output (for data transfer)

FOR MORE INFORMATION

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CAMERAS

The WISS consists of two eight-camera arrays that cover a designated one-mile by two-mile target area in the Chesapeake Test Range. Camera arrays are located at two instrumentation sites along the Chesapeake Bay shoreline: Bay Forest and Point-No-Point.

SCORING CONSOLE

A scoring console is located in the Range Control Center. The video data from the camera groups is multiplexed, sent to the scoring console and displayed on a video monitor. The display – a composite of video strips from the cameras – is electronically marked at each impact point by the operator.

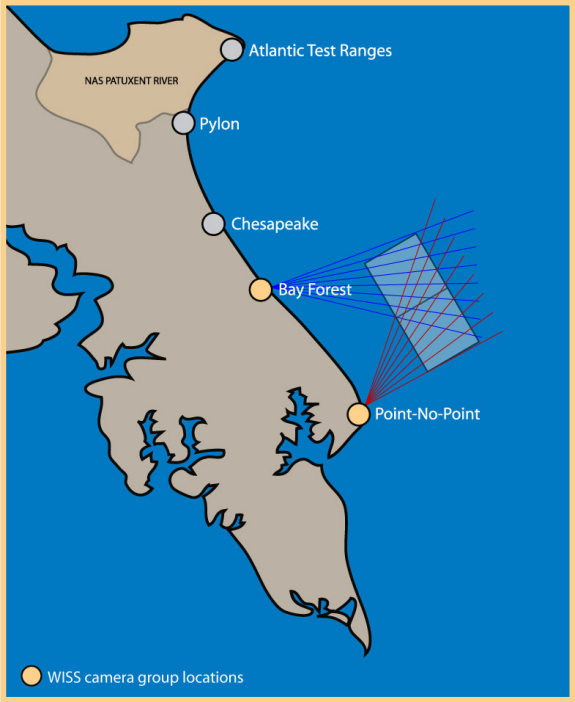
With this data and the known range geometry (distance and angles) between the camera sites and target center, the miss distance and clock code from the target center is automatically computed and displayed. Scores can be radioed to the pilots. Printouts of the mission scores are also available.

MULTIPLE IMPACT SCORING

For typical aircraft weapons separation and weapons delivery accuracy tests, three or more high-speed tracking instruments – such as the cinetheodolites and Kineto Tracking Mounts (KTM) – are used in conjunction with a triangulation algorithm to provide precise and accurate Time, Space, Position Information (TSPI). While this method yields the highest degree of precision for impact scoring, it can only be accomplished for a single store at a time.

The WISS system complements this tracking instrumentation in instances where multiple simultaneous weapons are released, or when the stores are released in rapid succession. In these cases, the WISS provides a cost effective means of scoring multiple impacts to determine dispersion patterns and for scoring when higher accuracy test or training data is not required.

WISS cameras at Bay Forest



WISS camera sites