

ADVANCED COMBAT DIRECTION SYSTEM (ACDS) BLOCK I



The AN/SYQ-20 Advanced Combat Direction System (ACDS) Block 1 consists of computer program software and associated hardware for non-Aegis combatant ships (aircraft carriers and selected amphibious warfare ships). ACDS Block 1 provides extended range display, expanded track capacity, Joint Tactical Information Distribution System interoperability, modifiable doctrine, display of mapping information, automatic gridlock, and doctrine-controlled multi-source identification. AN/SYQ-20 hardware includes computers, a display system with consoles, data terminal sets, automatic data processor, and automated status boards.

BACKGROUND INFORMATION

ACDS Block 1 represents the second phase of implementation of the Combat Direction System improvement plan of 1981, with ACDS Block 0 representing the initial phase. OPEVAL was conducted in February 1998 at the Atlantic Fleet and Puerto Rican operating areas. ACDS Block 1 was assessed as neither operationally effective nor operationally suitable. Further OT&E, conducted in FY99, indicated improvement, but ACDS Block 1 was still deficient in several areas. Subsequently, it was determined that ACDS Block 1 will be installed in no more than five ships (USS *John F. Kennedy*, USS *Dwight D. Eisenhower*, USS *Wasp*, USS *Nimitz*, and USS *Iwo Jima*).

TEST & EVALUATION ACTIVITY

During FY01, ACDS Block 1 T&E was conducted as part of the risk reduction T&E for the Cooperative Engagement Capability (CEC) OPEVAL. DT&E was conducted during December 2000. OT&E (OT-IIIE) was conducted in conjunction with the CEC OPEVAL during April and May 2001. Testing was conducted in accordance with a DOT&E-approved TEMP and test plan at the Atlantic Fleet Weapons Training Facility (AFWTF) Puerto Rico and then in the Virginia Capes (VACAPES) Operating Area. The Director observed testing in the VACAPES area. His staff and representatives observed testing at both locations. ACDS Block 1 combat systems were installed in USS *Wasp* and USS *John F. Kennedy*, as well as the land-based test site at Dam Neck, VA, for the VACAPES phase.

TEST & EVALUATION ASSESSMENT

OT-IIE used the test resources that were assembled for the CEC OPEVAL. Since the primary warfare area for CEC is air warfare, the resources were not intended to support other areas of ACDS Block 1 functionality and limited examination of areas such as undersea warfare and surface warfare.

Results indicate that ACDS Block 1 is still neither operationally effective nor operationally suitable. The following critical operational issues were resolved as unsatisfactory: own-ship mission management, composite warfare command management, doctrine management, survivability, reliability, maintainability, logistic supportability, interoperability, human factors, and documentation. It was observed that operation with CEC in conjunction with other ships, although producing enhanced situational awareness and ability to engage targets at greater range, also increased operator workload. The ACDS tactical picture was considered unmanageable as a result of extraneous tracks broadcast over the CEC network. ACDS Block 1 software mean time between faults was below threshold. Moreover, warm start capability did not work, thereby precluding rapid restoration of the tactical picture after software faults. Interoperability between ACDS Block 1 and CEC was unsatisfactory. Critical operational issues that were resolved as satisfactory include performance and casualty modes, availability, compatibility, training, safety, and security. Resolution of the training COI as satisfactory must be accompanied by the observation that ship crews were provided training beyond normal Navy pipeline training, enabling crews to maintain and operate ACDS Block 1.