

Edited extract from: *Department of the Army Historical Summary, FY 1972*
(Washington, D.C.: U.S. Army Center of Military History, 1974, pp. 176-177.)

Advanced Ballistic Missile Defense

A more flexible Army Advanced Ballistic Missile Defense (ABMD) program has been developed to permit easy modification in the event that the Strategic Arms Limitation Treaty (SALT) talks lead to limitations on ABMD research and development projects. The program can also be stretched out should treaty ratification result in decreased emphasis upon ABMD and cuts in budgetary support.

Numerous projects relating to the ABMD program registered gains during the year. In the area of designation and discrimination techniques, a preliminary set of engagement specifications was published that set forth requirements for resource allocation, radar scheduling, and passive discrimination. Detailed design for an L-band solid state radar (that operates on a 15-30 cm wavelength and a frequency of 2-4 GHz) was completed and a 32-element fractional array was constructed and successfully tested. In March 1972, UPSTAGE, the major test vehicle for advanced interceptor development with reference to the terminal defense mission, underwent successful flight testing. Also, preliminary vulnerability and hardness levels were determined for both terminal and area interceptors, and a multiburst fratricide study was initiated and lethality assessments completed for re-entry body designs.

The Advanced Ballistic Missile Agency's Data Processing Testbed was established to serve as the focal point in the development and verification of program software. A key component of the facility is a sophisticated System, Environment, and Threat Simulator (SETS) that simulates battle scenarios-including re-entry vehicles, decoys, junk, ground clutter, interceptors, and nuclear effects-and validates the application of data. During the year a data link connecting the testbed with the Hard Point Defense Acquisition Radar (HAPDAR) at White Sands Missile Range, New Mexico, was established that permits field test simulations to be run to validate operational software in real time.

In other developments, significant progress was made in preparing the Kiernan Reentry Measurement Site (KREMS) test complex in the Kwajalein Atoll for the impending flight test program; a new concept solid propellant engine with both thrust modulation and thrust vector control was successfully fired; and the design of a Homing Interceptor Terminal (HIT) was completed and construction of a prototype model for testing begun. Work also continued on the development of a real time data processor; design and development of the Midcourse Airborne Target Signature (MATS) sensor system were completed and final hardware environmental checks initiated; and a study was begun to evaluate the applicability of various advanced laser concepts in support of area defense.