Edited Extract from: *Department of Defense Annual Report for Fiscal Year 1963*, (Washington, D.C.: USGPO, 1964)

Annual Report of the Secretary of Defense, Operational Forces, pp. 15-18:

Continental Defense

Operational responsibility for continental defense is vested in the North American Air Defense Command (NORAD), a combined U.S.-Canadian command with headquarters at Colorado Springs, Colorado. Composed of elements from the U.S. Army, Navy, and Air Force and from the Royal Canadian Air Force, NORAD coordinates and directs the activities of about 175,000 people. Its major components include early warning, command, control, and communications systems, manned aircraft and surface-to-air missiles, the Ballistic Missile Early Warning System (BMEWS), and the Space Detection and Tracking System (SPADATS).

Continued progress was made during fiscal year 1963 in practically all continental defense activities. Primary emphasis was placed on improving the survivability of our existing system in case of missile attack and on developing an antimissile missile that might provide an effective defense against long-range enemy missiles….

In the field of ballistic missile defense, the BMEWS constitutes our primary source for advance warning of an attack. It represents an investment of about $1.0 billion. Of the three BMEWS stations, the ones at Thule, Greenland, and Clear, Alaska, were in operation during the past fiscal year, while the one at Fylingdales, England, was scheduled to start operating before the end of calendar year 1963. The addition of a new tracking radar at Thule and the installation of improved electronic countermeasures substantially increased the system's capabilities. Various other improvements are under study, including the development of over-the-horizon (OTH) radar, which could provide earlier information on missile attacks and additional confirmation of the data gathered by BMEWS. As successor to the Bomb Alarm System, designed to relay information on nuclear detonations in the NORAD area, an improved Nuclear Detection and Reporting System (NUDETS) is being tested. The new equipment would furnish automatically much additional information to military as well as civil defense authorities for purposes of damage assessment and fallout prediction.

The program for the development of an antimissile weapon was reoriented in fiscal year 1963 to incorporate improvements essential for an effective defense. The newly established NIKE-X development will include three features that had not been planned for its predecessor, the NIKE-ZEUS. First, the new high-acceleration SPRINT missile will, with its speed, provide additional time for discriminating between warheads and decoys. Secondly, the proposed Multifunction Array Radar (MAR) will have the capability to detect and track a large number of objects simultaneously. And finally, the components of the system can be sufficiently hardened to make a direct attack on these defense facilities unprofitable. The development contract for SPRINT was awarded in March 1963, and work was started on the construction of a prototype MAR. Continuing

tests of the NIKE-ZEUS provided additional information on reentry phenomena and defense techniques, and the successful interception from Kwajalein Island of test vehicles launched 5,000 miles away by ATLAS and TITAN boosters demonstrated the basic soundness of the ZEUS equipment. Scientific research covering many aspects of the missile defense problem is being carried forward under Project DEFENDER, administered by the Advanced Research Projects Agency (ARPA). Considerable effort is also being expended on improving our capabilities to counter submarine-launched missiles, while advanced methods to detect, track, and destroy enemy submarines are being studied as part of our over-all antisubmarine warfare program.

The resolution of technical problems, however, can not by itself determine the eventual deployment of an antimissile defense system. Its potential effectiveness must be weighed against many additional factors, including the degree of protection provided against various types of attack, the cost of deployment to the United States in comparison with the cost to an aggressor developing means to penetrate the new defenses, and, above all, the extent to which the system is backed up by an adequate civil defense shelter program to reduce the loss of American lives. A careful evaluation of strategic and economic considerations of this type is essential before a final decision on deployment can be reached. Our immediate objective, however, is to pursue the development of the NIKE-X system with highest urgency. Success in this undertaking should provide more of the information required for reaching a sound judgment.