

# THE TALOS LAND SYSTEM

The Talos missile was in a state of advanced development and ready for final production engineering in the early 1950's, although it would be several years more before the first Talos ship was ready for a load of missiles. The Talos missile represented such a considerable advance in the state of the art that it attracted the attention of the Air Force, which was interested at the time in the defense of Strategic Air Command bases. A design proposal of such a land-based system was prepared by the Laboratory and, following approval by the Air Force, a contract was let by the Bureau of Ordnance to RCA, Moorestown (N.J.) Division, to put together a land-based weapon system.

The RCA Talos Land System was the most advanced air defense system developed up to that time and also, because of automatic self-testing and fault identification, one of the most reliable. The basic components of the system were two C-band monopulse radars to track and illuminate targets, four C-band guidance radars to support midcourse guidance, a launching system that used a round-house arrangement for storage of missiles, and digital computers to control and monitor the system operations. It was engineered into an operating entity, ready for test and evaluation, in only 18 months. The figure shows the system installed in its own building at White Sands Missile Range, N.M.

The evaluation of the system demonstrated many firsts, including the completely automatic hands-off

operation of an anti-air warfare system, from target designation through target intercept. Further, the Land System demonstrated the concept of multiplexing, where several missiles are in flight simultaneously and the illuminator is directed from one target to the next at the right time for each missile's terminal phase. In addition, system capabilities were under study to use the nuclear warhead version of Talos as a last-ditch defense against ICBM's. No tests were ever carried out, but the concept has now resurfaced, some 30 years later, in the attempt to achieve survivability of missile silos.

The Talos Land System evoked a prolonged controversy between the Air Force and the Army, which was supporting the Nike Hercules system. The end of that evaluation, in the fall of 1956, was a jurisdictional decision by the Senate Armed Services Committee. It awarded the responsibility for land-based missiles with a range of up to 100 nautical miles to the Army and responsibility for missiles beyond that range to the Air Force. The Talos Land System, just starting its detailed evaluation and demonstration, was placed under the aegis of the Army, which then took over the evaluation; afterward, the system was disassembled. RCA continued to develop the Talos Land System's fire control radars, which had been under development as part of the Bumblebee Program and which later became the well-known FPS-16 Instrumentation Radars.



The Talos Land System, installed at White Sands Missile Range, included two C-band monopulse radars, two C-band guidance radars, a launching system, and a partial magazine for six missiles.