



The **TPS-59(V)3** Radar is the primary long-range air surveillance sensor for the Marine Corps Air Group Tactical Force (MAGTF). When deployed as an integral component of the MAGTF's Tactical Air Operations Center (TAOC), the Radar provides Identification Friend or Foe (IFF) returns and detections identified as Air Breathing Targets (ABTs) to the Tactical Air Operations Module (TAOM). Targets identified as TBMs are routed to the Air Defense Communications Platform (ADCP).

During autonomous, standalone operation, internal air situation displays and voice comm equipment enable operators situated within the Radar's electronics shelter to perform Ground Controlled Intercept (GCI) and TBM early warning.

Background: The TPS-59(V)3 Radar is the result of a Product Improvement Program for the TPS-59(V)1 Radar, funded by the Missile Defense Agency during 1994-1999 to upgrade and modernize the Radar's suite of electronic equipment. The Radar upgrade was performed with little or no modification to the TPS-59(V)1's trailer-mounted, solid-state, electronic phased-array antenna. The most significant result of the upgrade was the addition of the capability to detect targets having relatively small radar cross sections (.1 sq meter targets) over long ranges (up to 400 miles).

Description: The two major system components are the radar antenna and a 10-foot shelter that houses the electronics and data processing/display equipment. The radar antenna is a 54-row phased array that can be disassembled and transported on three separate trailers that form the base of the antenna when

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erected. The antenna operates in the 1215–1400 MHz frequency range, mechanically rotating at either a 5-second or 10-second rate to provide a 360° azimuth scan. The elevation scan is accomplished by electronic beam steering from 0° to 19° for ABT surveillance and up to 60° for TBM tracking.

MCTSSA Support: MCTSSA provides engineering support to MARCORSYSCOM for system life cycle support and product enhancements performed by the system's prime contractor, Lockheed Martin, Syracuse. MCTSSA provides direct support to the operating forces by assisting in the delivery of software upgrades and rebuilding and replacing inoperable Radar hard disks containing baseline software executables.

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