

MARINE AIR COMMAND AND CONTROL SYSTEM

The Marine Air Control Group (MACG) provides the ACE commander with the Marine Air Command and Control System (MACCS) agencies necessary to exercise command and control of aviation assets to support MAGTF, naval, and joint operations. These agencies provide the ability to plan, supervise, and influence the application of the six functions of Marine Aviation.

The MACCS is undergoing a modernization effort to improve and provide expeditionary air command-and-control, sensors, and weapons capabilities during the FY 2005-2008 timeframe. The key thrusts of this modernization effort include expeditionary packaging, modern information technology, and joint interoperability.

The MACCS is also preparing for a convergence of capabilities, organizations, doctrine, training, and personnel to support Expeditionary Maneuver Warfare and the massing of combat effects by dispersed and distributed naval, joint, and coalition assets. Supporting this effort, the Deputy Commandant for Aviation has chartered a MACCS Transformation Task Force to recommend doctrinal and organization changes.

COMMON AVIATION COMMAND AND CONTROL SYSTEM (CAC2S)

The CAC2S is the foundation of MACCS transformation. CAC2S will replace legacy systems within the MACG with modular, scalable, and multifunctional nodal suites. CAC2S will provide MAGTF and joint task force commanders with enhanced information and decision-support capabilities to plan, execute, monitor, and assess joint and multinational operations throughout the spectrum of conflict.

CAC2S will provide situational awareness by incorporating intuitive displays, information management functions, embedded training and simulation, self-test and diagnostic capabilities, and command dissemination to the MAGTF C4I Command Information Architecture for real-time combat direction of aviation missions.

MULTI-ROLE-RADAR SYSTEM

The Multi-Role-Radar System (MRRS) is a highly mobile, HMMWV-mounted, multi-role, modular, medium-range air surveillance radar designed to provide an early entry air surveillance capability ashore. MRRS also provides weapon cueing for short-range air defense weapon systems such as the Complementary Low Altitude Weapon System (CLAWS) and the Avenger with its Stinger surface-to-air missiles.

COMPLEMENTARY LOW ALTITUDE WEAPON SYSTEM

The Complementary Low Altitude Weapon System will marry the capability of the Advanced Medium-Range-Air-to-Air Missile (AMRAAM) capability with the mobility of the HMMWV. CLAWS will provide the MAGTF with a rapidly and easily deployed, highly mobile, maneuverable, high firepower, air defense asset that complements existing Stinger-based systems.

THE AIR SURVEILLANCE AND PRECISION APPROACH RADAR CONTROL SYSTEM

The Air Surveillance and Precision Approach Radar Control System (ASPARCS) is the next-generation, HMMWV-mounted, expeditionary air traffic control system for the Marine Corps. It contains three major components: an Air Surveillance Radar (ASR), a Precision Approach Radar (PAR), and an Operations and Communication

Subsystem (OS/CS). This system can support both ATC and air defense missions.

AN/TPS-59 RADAR

The AN/TPS-59 radar provides long-range, three-dimensional, land-based air surveillance for the MAGTF, optimized for theater ballistic missile and conventional air-breathing target detection and tracking. The AN/TPS-59 will undergo a service life extension program to improve expeditionary relevance and to enhance operational readiness. Additionally, a 3-D long-range radar (3DLRR)/Highly Expeditionary Long-Range Air Surveillance Radar (HELRSR) will be developed to replace the AN/TPS-59 radar beginning in FY 2008.

COMPOSITE TRACK NETWORK

Composite Track Network (CTN) is a key enabler for CAC2S and will contribute to the development of a Single Integrated Air Picture. It will enable MACCS radars to interface with the Navy's Cooperative Engagement Capability network and provide cueing information to CLAWS units.

AVIATION GROUND SUPPORT

A dust abatement initiative is under way by the Marine Corps Warfighting Lab

to develop materials, tactics, techniques and procedures for rapidly upgrading, repairing, or constructing expeditionary or contingency airfields in-theater while maintaining a low logistics footprint. The Marine Corps requires an organic capability to control dust in expeditionary landing zones for rotary wing operations in arid to semi-arid climates. This need was identified in recent operations in Afghanistan, where dust conditions severely limited pilot visibility. The program will develop general purpose and expeditionary methods of applying dust palliatives and field a system to four Marine Wing Support Squadrons in February.

The M-31 Expeditionary Arresting Gear System is a bi-directional, portable arresting gear system for the tactical recovery of tail hook aircraft at forward operating bases. The system will support all Marine Corps, Navy and most US Air Force and North Atlantic Treaty Organization aircraft. The M-31 System's advantages over the 40-year old M-21 is its mobility and installation time (four hours in normal soil conditions versus a minimum of 24 hours for the M-21).