Chapter 3

Marine Aircraft Wings

Section I. Fundamentals

3101. General

The primary mission of Marine Corps aviation is to participate as the air component of the MAGTF in the seizure and defense of advance naval bases and to conduct such land operations as may be essential for the prosecution of a naval campaign. A collateral mission is to participate as an integral component of naval aviation in the execution of such other Navy functions as the fleet commanders so direct.

3102. Expeditionary Aspects

Marine Corps aviation is organized, trained, and equipped to function as the MAGTF ACE. The ACE must be prepared to operate from a variety of sea- and shore-based facilities (from naval shipping to austere forward operating bases (FOBs)) to support MAGTF expeditionary operations. The focus of the ACE is to support the MAGTF during the assault landing and subsequent operations ashore. Initially, support could be furnished by Marine aircraft squadrons operating from FOBs within striking distance of the amphibious objective area or by V/STOL aircraft operating from amphibious shipping.

3103. Functions

MAGTF aviation tasks are divided into six functional areas that guide the commander in planning aviation allocation and employment. The commander considers the functional area to be used, rather than the specific means (individual weapons system), for accomplishing the mission. Individual weapons systems perform missions that are part of each function of Marine aviation. The six functions of Marine aviation are described in the following paragraphs.

a. OAS

OAS is “those air operations conducted against enemy installations, facilities, and personnel to directly assist the attainment of MAGTF objectives by the destruction of enemy resources or the isolation of his military force.” (MCRP 5-12C, Marine Corps Supplement to the DOD Dictionary of Military and Associated Terms). OAS includes the categories of close air support (CAS) and deep air support (DAS).

(1) CAS. CAS is “air action by fixed- and rotary-wing aircraft against hostile targets which are in close proximity to friendly forces and which require detailed integration of each air mission with the fire and movement of those forces.” (Joint Pub 1-02, DOD Dictionary of Military and Associated Terms)

(2) DAS. DAS is “air action against enemy targets at such a distance from friendly forces that detailed integration of each mission with fire and movement of friendly forces is not required. Deep air support missions are flown on either side of the fire support coordination line; the lack of a requirement for close coordination with the fire and movement of friendly forces is the qualifying factor.” (MCRP 5-12C). DAS missions include strike coordination, air interdiction, and armed reconnaissance.

b. Antiair Warfare

AAW is “that action required to destroy or reduce to an acceptable level the enemy air and missile threat. It includes such measures as the use of interceptors, bombers, antiaircraft guns, surface-to-air and air-to-air missiles, electronic attack, and destruction of the air or missile threat both before and after it is launched. Other measures which are taken to minimize the effects of hostile air action are cover, concealment, dispersion, deception (including electronic), and mobility.” (Joint Pub 1-02) The primary purpose of AAW is to gain and maintain some degree of air superiority.
AAW includes both offensive and defensive means to accomplish its objective.

(1) **Offensive AAW.** Offensive AAW constitutes operations conducted against the enemy air or air defense system before it can be launched or assume an attacking role. Offensive AAW operations in or near the objective area consist mainly of air attacks to destroy or neutralize hostile aircraft, airfields, radars, air defense systems, and supporting areas. Offensive AAW includes theater missile defense (TMD) attack operations and suppression of enemy air defense operations.

(2) **Air Defense.** Air defense includes all defensive measures designed to destroy attacking enemy aircraft or missiles in the earth's atmosphere or to nullify or reduce the effectiveness of such attack. There are two forms of air defense: active and passive.

(a) Active air defense is direct defensive action taken to destroy attacking enemy aircraft or missiles or to nullify or reduce the effectiveness of such an attack. Active air defense includes the use of aircraft, air defense weapons, supporting weapons (weapons not typically used in an air defense role), and EW.

(b) Passive air defense constitutes all measures, other than active defense, taken to minimize the effects of hostile air action. These include the use of cover, concealment, camouflage, deception, dispersion, electronic protection, and protective construction. Passive air defense is a command responsibility of every unit commander.

c. **Assault Support**

Assault support is “the use of aircraft to provide tactical mobility and logistic support for the MAGTF, the movement of high priority cargo and personnel within the immediate area of operations, in-flight refueling, and the evacuation of personnel and cargo.” (Fleet Marine Force manual (FMM) 5-30, Assault Support) The tasks of assault support fall within the following seven categories:

(1) Combat assault transport provides mobility and logistic support to the MAGTF. It can be used to rapidly deploy forces, bypass obstacles, or redeploy forces to meet the enemy threat, thus allowing for a rapid buildup of combat power at a specific time and location.

(2) Aerial delivery operations transport equipment and supplies to FOBs or remote areas either by landing at the desired location or through air drop.

(3) Aerial refueling allows MAGTF aircraft to conduct flight-ferrying operations, extend time on station, and extend mission range. In addition, aerial refueling aids in the recovery of damaged or low-fuel aircraft by extending their time in the air, when required.

(4) Air evacuation provides transportation of personnel and equipment from FOBs or remote areas by using transport helicopters and fixed-wing aircraft.

(5) TRAP facilitates the recovery of personnel and equipment while preventing additional loss. The TRAP mission is an implied task associated with all MAGTF operations. Specially briefed aircrews are assigned to perform TRAP missions. TRAP missions are conducted when the tactical situation prevents the use of traditional search and reserve techniques. TRAP is normally conducted only when survivors and their locations are confirmed.

(6) Air logistical support operations are conducted by using fixed-wing aircraft to provide assault support of MAGTF forces on the ground in much the same manner as helicopters. Air logistical support delivers troops, equipment, and supplies to areas beyond helicopter range and lift capability or when surface transportation is slow or unavailable.

(7) Battlespace illumination can be provided by both fixed-and rotary-wing aircraft and is used to provide light in the battlespace area.

d. **Air Reconnaissance**

Air reconnaissance is “the acquisition of intelligence information by employing visual observation and/or sensors in air vehicles.” (FMFM 5-10, Air Reconnaissance)

(1) **Visual Reconnaissance.** Any airborne platform may conduct visual aerial reconnaissance operations. An observer or pilot can visually search a route, point, or area. Visual aerial reconnaissance is frequently related to offensive action such as artillery, naval surface fires (NSF), or air support.

(2) **Multisensor Imagery Reconnaissance.** Multisensor imagery reconnaissance includes photographic, side-looking airborne radar, and infrared reconnaissance.
techniques. When the imagery is processed, it provides intelligence information to all interested commands.

(3) Electronic Reconnaissance. EW-configured aircraft provide the means to detect, identify, evaluate, and locate foreign electromagnetic radiation that is emanating from other-than-nuclear detonations or radioactive sources, thereby providing up-to-date electronic order of battle and technical intelligence.

e. EW

EW is “any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy.” (Joint Pub 1-02) The three major subdivisions of EW are electronic attack (EA), electronic protection, and EW support.

(1) EA is “that division of electronic warfare involving the use of electromagnetic, directed energy, or anti-radiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability.” (Joint Pub 1-02)

(2) Electronic protection involves “actions taken to protect personnel, facilities, and equipment from any effects of friendly or enemy employment of electronic warfare that degrade, neutralize, or destroy friendly combat capability.” (Joint Pub 1-02)

(3) EW support involves “actions tasked by, or under direct control of, an operational commander to search for, intercept, identify, and locate sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition.” (Joint Pub 1-02)

f. Control of Aircraft and Missiles

The control of aircraft and missiles involves the coordinated employment of facilities, equipment, communications, procedures, and personnel that allows the ACE commander to plan, direct, and control the efforts of the ACE to support accomplishment of the MAGTF’s mission. Control of aircraft and missiles is executed through the Marine Air Command and Control System (MACCS). The control of aircraft and missiles function serves to integrate the activities of the other five functions of Marine aviation into a coordinated effort.

3104. Marine Aviation Organization

Organizationally, Marine aviation is divided into three active duty MAWs and one Reserve MAW. Each MAW has a unique organizational structure; these structures are represented in figure 3-1 on page 3-4, figure 3-2 on page 3-5, figure 3-3 on page 3-6, and figure 3-4 on page 3-7. The MAW provides the personnel and equipment for the MAGTF ACE. Operationally, the ACE task organizes with various resources from the MAW that are necessary to complete the ACE’s assigned mission.

Typically, the ACE supports a MEF with one or more MAWs. Support to the MEF may include assets from more than one MAW that are task organized to form a MAW (reinforced). The ACE supports a MEU with a task-organized squadron that usually consists of a mix of rotary-wing aircraft, short take-off and landing aircraft, a Marine air control group (MACG) detachment, a fixed-wing Marine aviation logistics squadron (MALS) detachment, and a rotary-wing MALS detachment. The ACE normally supports an SPMAGTF with a task-organized squadron that consists of a mix of rotary-wing aircraft, short take-off and landing aircraft, a MACG detachment, a fixed-wing MALS detachment, and a rotary-wing MALS detachment. Actual squadron composition will depend on mission requirements.

MAWs include Marine aircraft, air control, and wing support groups. Each group includes the squadrons and/or battalions that are necessary to complete the groups’ roles in Marine aviation. MAWs and groups are not organized according to tables of organization (T/Os), but rather are task organized to accomplish the missions assigned. Each of the four wings may have a different organization; however, each wing is capable of performing all six functions of Marine aviation.

3201. General

The notional MAW is task organized to provide a flexible and balanced aviation organization that is capable of providing the full range of aviation operations in a variety of areas without the requirement for prepositioned support, control, and logistical facilities. The MAW is the smallest unit with the inherent capability of performing all six functions of Marine aviation. The wing is composed of the subordinate units depicted in figure 3-5. Aviation organizations smaller than a wing can provide the capabilities to accomplish any or all aviation functions by using task organization.
Figure 3-1. 1st MAW.
Figure 3-2. 2d MAW.
Figure 3-3. 3d MAW.
Figure 3-4. 4th MAW.
Section II. Marine Aircraft Wing

3202. Marine Wing Headquarters Squadron (MWHS)

a. Mission

The MWHS provides command, administrative, and supply support for a MAW headquarters and certain elements of the MACG.

b. Tasks

w Provide camp facilities and services, including food service, for all elements of the Marine wing headquarters and for the Marine tactical air command squadron (MTACS) and Marine wing communications squadron (MWCS) of the MACG.

w Maintain the capability of deploying as an integral unit when augmented with maintenance support personnel.

w Provide detachments for supported units as required.

w Provide for internal security of the MAW headquarters.

Figure 3-5. Notional MAW.
c. Concept of Organization

This organization will normally function as an integral unit. It is structured to operate as a subordinate unit of the MAW to support the units mentioned above.

d. Concept of Employment

The MWHS provides support for wing headquarters and certain elements of the MACG.

e. Administrative Capability

The MWHS is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. The MWHS is capable of organizational (1st echelon) maintenance on all assigned equipment and organizational (2d echelon) maintenance on organic infantry weapons. Organizational maintenance (2d echelon) on motor transport and engineer equipment is provided by the Marine wing support group (MWSG). Organizational (2d echelon) maintenance support for communications equipment is provided by the MWCS.

(2) Supply. The MWHS is capable of organic supply functions.

(3) Medical. The MWHS is capable of providing routine and emergency medical support for all elements of the wing headquarters.

(4) Transportation. The MWHS has no logistic transportation capabilities; support is provided by the MWSG.

(5) Messing. The MWHS provides food service support for all elements of the wing headquarters, MTACS, and MWCS.

(6) Selected Items of Equipment. For selected items of equipment, see table 3-1.

3301. General

The mission of the MACG is to provide, operate, and maintain the MACCS. The MACG contains subordinate units that provide the major facilities of the MACCS. It normally consists of a MTACS, a Marine air support squadron (MASS), one Marine air control squadron (MACS), a low-altitude air defense (LAAD) battalion, and an MWCS. (See figure 3-6.)

The tactical air command center (TACC), furnished by the MTACS, is the principal air command agency. The major air control agencies are the tactical air operations center (TAOC) and Marine air traffic control (ATC) detachments.

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<td>Tactical Combat Operations (TCO) System</td>
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<tr>
<td>E09893</td>
<td>Machine gun, medium, 7.62 mm, M240G</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 3-1. Selected Items of Equipment for the MWHS.
Section III. Marine Air Control Group

(MATCDs), which are furnished by the MACS, and a direct air support center (DASC), which is furnished by the MASS. The MAGTF’s organic surface-to-air weapons are provided by the LAAD battalion.

3302. Marine Air Control Group Headquarters

a. Mission

MACG headquarters coordinates all aspects of air command and control and air defense within the MAW. It provides the command and staff functions for the MACG commander when deployed as part of the MAGTF ACE.

b. Tasks

w Provide the CE of the MACG or MACG detachment for the MAGTF ACE.

w Plan and coordinate the operations, maintenance, and supply of the MACCS.

w Plan and coordinate the air defense operations of the MAGTF.

w Coordinate with appropriate commands to plan for the deployment and employment of the MACG and its separately deployable detachments as the MACCS of an ACE.

w Coordinate with other U.S. Services and allies for planning and conducting MAGTF air operations in joint and multinational force operations.

Figure 3-6. Marine Air Control Group.
Advise the ACE commander on applicable matters pertaining to the employment of agencies comprising the MACCS.

Perform command and staff functions associated with fulfilling the MACG’s mission.

Conduct operations while in a nuclear, biological, and chemical (NBC) and/or EW environment.

Maintain the capability for deploying independent units.

c. **Concept of Organization**

The MACG headquarters is organized to accomplish the command and staff functions necessary to fulfill the MACG’s mission in support of the MAW and MAGTF ACE.

d. **Concept of Employment**

The MACG headquarters is employed with the combined assets of the MACG as a component of the MACG as a component of the ACE; normally at the MEF or MEF(FWD) element level. Before establishment of a MEF, in conjunction with MAGTF task organization, specific MACG headquarters personnel may be required to augment the MTACS. For additional information on MACCS employment, see MCWP 3-25.3, *Marine Air Command and Control System Handbook*.

e. **Administrative Capabilities**

The MACG headquarters is capable of self-administration.

f. **Logistic Capabilities**

1. **Maintenance.** All maintenance support is provided by the associated MTACS.

2. **Supply.** All supply support is provided by the associated MTACS.

3. **Transportation.** All motor transport is provided by the associated MTACS.

4. **Medical.** Medical personnel assigned to the MACG headquarters medical department are provided to perform administrative functions and to coordinate, oversee, and augment the actions of those medical personnel who are assigned to subordinate units of the MACG. Routine and emergency medical support will be provided by the medical personnel who are organic to the associated MTACS.

5. **Messing.** All food service support is provided by the MWHS.

3303. **Marine Tactical Air Command Squadron**

a. **Mission**

The MTACS provides equipment, maintenance, and operations for the TACC of the ACE as a component of the MAGTF. It equips, mans, operates, and maintains the current operations section of the TACC. It also provides and maintains a facility for the TACC future operations and future planning sections and installs and maintains associated automated systems.

b. **Tasks**

1. **Provide the operational command post (CP) for the ACE commander of a MEF or the forward element of a MEF.**

2. **Assist in coordinating air operations to meet the operational requirements of the MEF.**

3. **Assist in planning air operations.**

4. **Maintain the capability to accomplish TACC functions while displacing.**

5. **Conduct operations while in an NBC and/or EW environment.**

6. **Assist in coordinating with other U.S. Services and allies for the conduct of MAGTF air operations in joint and multinational force operations.**

7. **Perform command and staff functions associated with fulfilling the MTACS mission.**

8. **Coordinate with the appropriate commands to plan for the deployment and employment of the squadron.**
c. Concept of Organization

The MTACS is organic to the MACG of the MAW.

d. Concept of Employment

The MTACS is employed as an element of the MACG by providing the TACC, which is the senior agency of the MACCS. MTACS can furnish a TACC capability of varying sizes to meet operational needs and the capabilities required by the ACE and MAGTF commanders. The TACC battlestaff requires personnel augmentation from the MACG headquarters and the ACE to provide operations and planning functions. For additional information on the TACC, see MCWP 3-25.4, Tactical Air Command Center Handbook.

e. Administrative Capabilities

The MTACS is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. The MTACS is capable of organizational (1st echelon) maintenance on all equipment; organizational (2d echelon) maintenance on motor transport equipment, ground-common high-frequency (HF) radios, and infantry weapons; intermediate (3d echelon) maintenance on electrical systems of mobile electric power generators, air conditioning equipment, and ground-common communications-electronics equipment except HF radios and switchboards; and intermediate (3d and 4th echelon) maintenance on aviation-peculiar critical low-density secondary repairables and end items.

(2) Supply. The MTACS is capable of performing supply and fiscal functions that are required for squadron and MACG headquarters operations and managing secondary repairable floats for critical low-density aviation-peculiar equipment.

(3) Transportation. The MTACS possesses sufficient motor transport equipment to support operations once the TACC is emplaced. It requires external support for equipment deployment, echelon displacement, materiel handling, and motor transport retrieval.

(4) Medical. The MTACS is capable of providing routine and emergency medical support required to meet squadron and associated MACG headquarters needs by using organic Navy corpsmen.

(5) Messing. Food service support is provided by the MWHS.

(6) Selected Items of Equipment. For selected items of equipment, see table 3-2.

3304. Marine Air Control Squadron

a. Mission

The MACS provides air surveillance and control of aircraft and surface-to-air weapons for AAW; continuous all-weather radar and nonradar ATC services and airspace management in support of a MAGTF.

b. Tasks

- Perform command and staff functions associated with fulfilling the MACS mission.
- Coordinate with appropriate commands to plan for the deployment and employment of the squadron and its separately deployable detachments.
- Provide deployable detachments that are capable of air surveillance, airspace management, and control of aircraft and SAMs for AAW in support of the MAGTF.
- Provide deployable detachments that are capable of providing ATC services at existing or expeditionary airfields and remote area landing sites.
- When reinforced with a TMD detachment, provide SAM fires in assigned zones in defense of vital areas and installations therein against theater missile attack, and be prepared to engage surviving fixed-wing aircraft and helicopter threats.
- Serve as the operational point of contact between the MACCS and national/international ATC agencies.

c. Concept of Organization
The MACS (see figure 3-7a) is comprised of a squadron headquarters, a TAOC detachment, and two ATC detachments. One MACS organization includes four TMD detachments. The TMD detachment is designed with a liftable T/O and table of equipment (T/E) that can be assigned to support any MACS with TMD assets. A reinforced MACS is shown in figure 3-7b on page 3-14.

d. Concept of Employment

The MACS is organized and equipped for employment in the ACE of a MEF. TAOC, ATC, and TMD detachments, augmented by the appropriate elements of the headquarters, may be deployed separately to provide air control, ATC, and TMD of vital areas for a task-organized MAGTF. For additional information on MACS detachments, see MCWP 3-25.6, Sector Antiair Warfare Coordinator Handbook; MCWP 3-25.7, Tactical Air Operations Center Handbook; MCWP 3-25.8, Marine Air Traffic Control Detachment Handbook; and MCWP 3-25.9, Air Defense Detachment Handbook.

e. Administrative Capability

The MACS headquarters is capable of self-administration. The TAOC, EW/C, and ATC detachments are capable of limited self-administration.

f. Logistic Capability

(1) Maintenance. The MACS is capable of organizational (1st echelon) maintenance on all equipment;

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<td>A0012</td>
<td>Contingency Theater Automated Planning System</td>
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<td>Operations central, AN/TYQ-51</td>
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<td>Emulator unit, data link, SM822/GYQ</td>
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<td>A0662</td>
<td>FMF downsized end-user computer equipment</td>
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<td>Operations group (TACC), AN/TYA1</td>
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<td>A2534</td>
<td>Tactical Combat Operations (TCO) System</td>
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<td>D1059</td>
<td>Truck, cargo, 5 ton, 6 x 6, M923A1</td>
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<td>D1061</td>
<td>Truck, cargo, 5 ton, long bed, M928</td>
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<td>Multiple Source Correlation System</td>
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Figure 3-7a. Marine Air Control Squadron.
organizational (2d echelon) maintenance on motor transport equipment, ground-common HF radios, and infantry weapons; intermediate (3d echelon) maintenance on electrical systems of mobile electric power generators, refrigeration units, air conditioning equipment, and ground-common communications-electronics equipment except for HF radios; intermediate (3d and limited 4th echelon) maintenance on aviation-peculiar secondary repairables and end items; and organizational and intermediate (1st through 4th echelon) maintenance on assigned Navy-furnished equipment.

(2) Supply. The MACS is capable of performing supply and fiscal functions that are required for squadron operations and managing secondary repairable floats for aviation-peculiar equipment. The MACS requires support from a MALS for missile resupply and for performing Navy supply and fiscal functions.

(3) Transportation. The MACS possesses sufficient organic motor transport equipment to satisfy the routine administrative transportation requirements of the squadron. It requires support from an MWSG for the movement and tactical emplacement of TAOC, EW/C, and ATC detachment equipment.

(4) General Engineering. Intermediate mechanical maintenance (3d and 4th echelon) for mobile electric power generators and air conditioners is provided by the FSSG.

(5) Health Services. The MACS is capable of providing routine and emergency medical support by using organic Navy corpsmen.

(6) Messing. Food service support is provided by the MWSG or supported unit.

(7) Selected Items of Equipment. For selected items of equipment, see table 3-3.

3305. Marine Wing Communications Squadron

a. Mission

The MWCS provides expeditionary communications for the ACE of a MEF, including the phased deployment of task-organized elements thereof.

b. Tasks

w Provide for the effective command of subordinate detachments.

w Assist in the systems planning and engineering of ACE communications. Install, operate, and maintain expeditionary communications for command and control of the MEF ACE.

w Provide operational systems control centers, as required, to coordinate communication functions internally and externally to the ACE.
w Provide calibration and repair facilities for all ground-
common test measurement diagnostic equipment
(TMDE) in the MAW.

w Provide the digital backbone communications
support for the ACE CE, FOBs, and MACCS
agencies for up to two airfields per detachment.

w Provide tactical automated switching and telephone
services for the ACE CE and the TACC.

w Provide electronic message distribution for the ACE
CE, primary MACCS agencies, and tenant units.

w Provide external single-channel radio and radio
retransmission communications support for ACE
operations as required.

w Provide deployed wide area network (WAN) and
deployed local area network (LAN) server support
for the ACE CE and primary MACCS agencies.

w Provide the support cryptographic site for all
ground-common and MACCS-assigned commu-
nications security equipment within the ACE.

w Plan and coordinate individual and unit training as
required to qualify subordinate detachments for
tactical deployment and combat operations.

w Provide maintenance support for ground-common
communications equipment in the MAW.

c. Concept of Organization

The MWCS consists of a headquarters element and one or
two MWCS detachments.

d. Concept of Employment

The MWCS provides communications support for the
ACE headquarters and TACC. Each MWCS detachment
may be independently deployed to provide external
communications for up to two airfields and four forward
bases. For additional information on the MWCS, see
MCWP 3-25.12, Marine Wing Communications Squad-
ron Handbook (under development).

e. Administrative Capabilities

The MWCS and detachments are capable of self-
administration.

f. Logistic Capabilities

(1) Maintenance. The MWCS is capable of organizational
(1st echelon) maintenance on all organic equipment;
organizational (2d echelon) maintenance on infantry

Table 3-3. Selected Items of Equipment for the MACS.

<table>
<thead>
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<th>TAM Number</th>
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<th>MACS (Rein) Quantity</th>
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<td>A2525</td>
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<td>D1061</td>
<td>Truck, cargo, 5 ton, long bed, with winch, M928</td>
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<td>Q0945</td>
<td>ATC tower system, AN/TSQ-120 A/B</td>
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weapons, engineer, motor transport, and automated data processing equipment; intermediate-level (3d echelon) maintenance on communications-electronics equipment, communications security equipment, automated data processing equipment, electrical systems of mobile electric power generators, and air conditioning/refrigeration equipment; and intermediate-level (4th echelon) maintenance support for assigned critical low-density ground-common end items and associated secondary repairables. It is also capable of providing support cryptographic sites for all ground-common and MACCS-assigned communications security equipment within the ACE and calibration of TMDE.

(2) Supply. The MWCS is capable of performing supply and fiscal functions that are required for squadron operations and managing secondary repairable float for critical low-density ground communications-electronics equipment and associated A stocks.

(3) Transportation. The MWCS possesses sufficient organic motor transport equipment to satisfy the routine administrative requirements of the squadron. Additional transportation requirements are provided by the MWSG.

(4) Medical. Medical support is provided by the MWSG.

(5) Messing. Food service support is provided by the MWSG or the supported unit.

(6) Selected Items of Equipment. For selected items of equipment, see table 3-4.

3306. Marine Air Support Squadron

a. Mission

The MASS provides DASC capabilities for control and coordination of fixed- and rotary-wing aircraft operating in direct support of MAGTF forces.

b. Tasks

w Provide operational planning for MAGTF air support operations.
w Receive, coordinate, and process immediate requests for direct air support.
w Provide equipment, facilities, and personnel for the operation of air support elements.
w Conduct air support control as required to meet MAGTF operational requirements.
w Maintain the ability to provide continuous control of direct air support while displacing by echelon.
w Provide personnel and facilities for the simultaneous operation of the DASC and DASC (airborne).

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</tr>
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<td>A2508</td>
<td>Switching unit, telephone, automatic, SB3865</td>
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<td>D1059</td>
<td>Truck, cargo, 5 ton, 6x6, M923A1</td>
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</tbody>
</table>
Coordinate and integrate MAGTF direct air support operations with those of other Services, allies, and nations.

c. Concept of Organization

The MASS is organic to the MACG. When supporting the MAGTF, the MASS is task organized as part of the ACE.

d. Concept of Employment

The MASS supports the MAGTF by control, coordination, and integration of direct air support operations in support of naval expeditionary, joint, and multinational operations. For additional information on the DASC, see MCWP 3-25.5, Direct Air Support Center Handbook.

e. Administrative Capabilities

The MASS is capable of self-administration.

f. Logistic Capabilities

1. Maintenance. The MASS is capable of organizational (1st echelon) maintenance on all equipment; organizational (2nd echelon) maintenance on motor transport equipment, ground-common HF radios, and infantry weapons; intermediate (3rd echelon) maintenance on electrical systems of mobile electric power generators, air conditioning equipment, and ground-common communications-electronics equipment except for HF radios; and intermediate (3rd and 4th echelon) maintenance on aviation-peculiar critical low-density secondary repairables and end items.

2. Supply. The MASS is capable of performing supply and fiscal functions that are required for squadron operations and managing secondary repairable floats for critical low-density aviation-peculiar equipment.

3. Transportation. The MASS possesses sufficient motor transport equipment to provide for the combat transportation requirements of the squadron. This includes the ability to displace in echelon.

4. Medical. The MASS is capable of providing routine and emergency support by using organic Navy corpsmen.

5. Messing. Food service support is provided by the supporting element.

(6) Selected Items of Equipment. For a list of items of equipment, see table 3-5 on page 3-18.

3307. Low-Altitude Air Defense Battalion

a. Mission

The LAAD battalion provides close-in, low-altitude, surface-to-air weapons fires in defense of MAGTF assets defending forward combat areas, maneuver forces, vital areas, installations, and/or units engaged in special/independent operations.

b. Tasks

1. Provide for the effective command, administrative, communications, supply, and logistic support of subordinate batteries.

2. Maintain a primary capability as a highly mobile, vehicle-mounted, and man-portable surface-to-air weapons component of the MAGTF with the ability to rapidly deploy in the assault echelon of an expeditionary operation.

3. Provide surface-to-air weapons support for units engaged in special/independent operations.

4. Provide for the separate deployment of subordinate batteries and platoons to accommodate special tactical situations and task organizations.

5. Plan and coordinate requirements for liaison and combinations with appropriate commands to ensure the most effective integration of LAAD units within the integrated air defense system.

6. Provide early warning of hostile air threats to other elements of the air defense system.

c. Concept of Organization

The LAAD battalion is comprised of a battalion headquarters, a headquarters and service (H&S) battery, and two firing batteries. The H&S battery has been divided into an H&S battery (-) and an H&S battery detachment. This organization facilitates the logistical support of separately deployed firing batteries. (See figure 3-8.)
d. Concept of Employment

The LAAD battalion is organized to provide LAAD capabilities that are consistent with the size of the MAGTF and the scope of the air defense plan. The battalion will normally be employed within the integrated air defense system of the MEF. For additional information on the LAAD battalion, see MCWP 3-25.10, *Low Altitude Air Defense Battalion Handbook*.

**e. Administrative Capabilities**

The H&S battery, as well as each firing battery, is capable of self-administration.

**f. Logistic Capabilities**

**1) Maintenance.** The LAAD battalion is capable of organizational (1st echelon) maintenance of organic surface-to-air weapons system components and training devices; organizational (1st and 2d echelon) maintenance of all other organic equipment, including motor transport, engineering, communications, and individual weapons; and intermediate (3d and 4th echelon) maintenance on the Avenger weapon system, except for the missiles.

**2) Supply.** The LAAD battalion is capable of organic supply.

**3) Transportation.** The LAAD battalion possesses sufficient organic motor transport assets to support the unit mission.

**4) Medical.** The LAAD battalion is capable of providing routine and emergency medical support by using organic Navy corpsmen.

**5) Messing.** The LAAD battalion is capable of providing organic food service support.

**6) Selected Items of Equipment.** For a list of equipment items, see table 3-6.

3401. General

The MAG is an administrative and tactical CE. It is the smallest aviation unit that is designed for independent operations with no outside assistance except access to a source of supply. Each MAG is task organized for the assigned mission. There are two types of MAGs within the MAW: rotary-wing (MAG VH) and fixed-wing (MAG VF/VA).
The primary mission of a MAG VF/VA is to conduct AAW and OAS operations from advance bases, FOBs, and aircraft carriers. MAG VF/VAs may consist of any combination of Marine attack squadron (VMAs), Marine fighter attack squadrons (VMFAs), Marine all-weather fighter attack squadrons (VMFA(AW)s), Marine aerial refueler transport squadrons (VMGRs), Marine unmanned aerial vehicle (UAV) squadrons (VMUs), Marine tactical EW squadrons (VMAQs), or MALS (fixed wing). The primary mission of the MAG VH is to provide assault support. Normally, the MAG VH includes one Marine light/attack helicopter squadron (HMLA), three Marine medium helicopter squadrons (HMMs), and two Marine heavy helicopter squadrons (HMHs), and one MALS (rotary wing). Each fixed- and rotary-wing MAG has a MALS.

### Table 3-6. Selected Items of Equipment for the LAAD Battalion.

<table>
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<th>TAM Number</th>
<th>Item</th>
<th>Quantity</th>
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<td>Radar set, alert, defense, tactical, AN/UPS3</td>
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<td>Truck, wrecker, 5 ton, 6 x 6, M936</td>
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<tr>
<td>E0727</td>
<td>Interrogator set, IFF (Stinger), AN/PPX3B</td>
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</tr>
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<td>E0990</td>
<td>Machine gun, .50 cal, M923</td>
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</tr>
<tr>
<td>E0993</td>
<td>Machine gun, 7.62 mm, M60E3</td>
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</tr>
<tr>
<td>E1836</td>
<td>Control central, battery, missile, guided (Avenger), AN/TWQ1</td>
<td>60</td>
</tr>
</tbody>
</table>
Section IV. Marine Aircraft Group (MAG)

The MAG headquarters provides the staff support necessary for the effective command of subordinate squadrons of the MAG.

b. Tasks

- Perform those command and staff functions that are necessary to accomplish the MAG mission.
- Plan and coordinate the deployment and employment of the MAG and its separately deployable squadrons.
- Plan and coordinate individual and unit training to prepare subordinate squadrons for tactical deployment and combat operations.
- Provide Marine Corps property supply support for subordinate squadrons.
- Maintain cognizance over all fiscal functions accomplished within the MAG.

(2) Supply. The MAG headquarters is capable of providing the Marine Corps supply and fiscal functions that are required for MAG operations.

(3) Medical. The MAG headquarters is capable of providing routine and emergency medical support.

(4) Transportation. Motor transport is provided by the Marine wing support squadron (MWSS).

(5) Messing. Food service is provided by the MWSS.

c. Concept of Organization

The MAG headquarters is organized into individual departments that are capable of performing the broad range of required staff functions.

d. Concept of Employment

The MAG headquarters will be employed with the ACE, where it may function in either a senior or subordinate staff role.

e. Administrative Capability

The MAG headquarters is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. The MAG headquarters is capable of organizational (1st echelon) maintenance on all organic Marine Corps equipment and organizational (2d echelon) maintenance of assigned infantry weapons and NBC equipment.
Organization of Marine Corps Forces

Figure 3-9. Notional MAG (Rotary Wing).

Figure 3-10. Notional MAG (Fixed Wing).
3403. Marine Aviation Logistics Squadron: Fixed Wing/Rotary Wing

a. Mission

The MALS provides aviation-logistic support, guidance, and direction to MAG squadrons on behalf of the commanding officer, as well as logistic support for Navy-funded equipment in the supporting MWSS, MACS, and Marine wing mobile calibration complex.

b. Tasks

- Provide intermediate-level maintenance for aircraft and aeronautical equipment of all supported units and, when authorized, perform first-degree repair on specific engines.
- Provide aviation supply support for aircraft and Navy-funded equipment to all supported units.
- Provide class V(A) ammunition logistic support to the MAG’s squadrons. This support encompasses the requisitioning, storage, handling, assembly, transportation, and inventory reporting of class V(A) ammunition. Be capable of planning for and operating an airfield ammunition issue point at expeditionary airfields.
- Interpret, implement, audit, inspect, and provide oversight for the MAG commanding officer of all policies and procedures relating to the administration and management of operations and maintenance, Navy funds (except temporary additional duty funds), aviation supply, aircraft maintenance, aircraft ordnance, avionics, and cryogenics production for all units/squadrons within a MAG.
- Coordinate with the MWSG, the MACG, the MAW calibration complex, and other supporting Navy and Marine Corps activities/agencies in planning for the support required to execute the Marine aviation logistic support program (MALSP).
- Screen and inspect nonserviceable aeronautical materiel for testing and repair, shipment to another repair facility, or disposal.
- Maintain the capability to deploy and provide MALSP support packages (including personnel) as an integral unit or as tailored logistic elements assigned to another MALS to support MAG aircraft assigned to a different MAG/ACE.
- Conduct individual and unit training to qualify organic and supported squadron personnel for performing assigned missions and tasks.
- Provide data processing support to facilitate execution of the aviation supply, aircraft maintenance, and Navy-funded (except temporary additional duty funds) financial management functions of the MAG.

c. Concept of Organization

This squadron is organized as a core unit that is supplemented by aircraft-specific, MWSS, and MACS augmentees. This concept allows the squadron to provide logistical support to the MAG’s aircraft squadrons, MWSSs, and MACSs in garrison or as a task-organized ACE.

d. Concept of Employment

The MALS is employed as an integral unit of a MAG within an ACE or can provide elements/support packages to another MALS that is supporting a MAGTF ACE.

e. Administrative Capability

The MALS is capable of self-administration.

f. Logistic Capability

(1) Maintenance. The MALS is capable of organizational (1st echelon) maintenance on all organic Marine Corps equipment and organizational (2d echelon) maintenance on assigned infantry weapons.

(2) Supply. The MALS is capable of performing aviation supply and fiscal functions that are required to support MAG operations and aircraft maintenance.

(3) Medical. The MALS is capable of providing routine and emergency medical support.

(4) Transportation. Transportation is provided by the MWSS.

(5) Messing. Food service support is provided by the MWSS.

3404. Marine Aerial Refueler Transport Squadron
a. Mission

The VMGR provides aerial refueling service in support of Fleet Marine Force (FMF) air operations and provides assault air transport of personnel, equipment, and supplies.

b. Tasks

- Provide tactical aerial refueling service to FMF units.
- Provide long-range aerial refueling service for air movement of FMF squadrons when other suitable means of aerial refueling services are not readily available.
- Provide assault air transport for air-landed and air-delivered troops, supplies, and equipment when other suitable means of assault air transport are not readily available.
- Provide an aircraft platform for the airborne DASC.
- Provide ground refueling service to aircraft when other suitable means of aircraft refueling are not available.
- Provide air transport service for the evacuation of casualties and noncombatants when other means of transportation are not available.
- Within the capability of assigned aircraft and equipment, maintain the capability to operate under day, night, and all weather flying conditions; operate to/from a logistic air head, advance base, expeditionary airfield, or tactical landing zone in the objective area or battle area; and operate with or without the assistance of airborne, surface, or ground controllers.

3405. Marine Tactical Electronic Warfare Squadron

a. Mission

The VMAQ conducts airborne EW in support of FMF operations.

b. Tasks

- Conduct airborne EA and EW support operations.
- Conduct EA in support of training of FMF units or other forces as assigned.
- Process and provide mission data from tape recordings obtained on EW missions for updating and maintaining an electronic order of battle.
- Maintain the capability of operating from aircraft carriers, advance bases, and expeditionary airfields.
- Maintain the capability to operate during darkness and under all weather conditions.
Maintain the capability to deploy or conduct extended-range operations that require aerial refueling.

Perform organizational maintenance on assigned aircraft.

c. Concept of Organization

The VMAQ is organized to function independently with its own logistic and administrative support capabilities. The squadron is structured to operate as a subordinate unit of a MAG or carrier air wing. Each squadron has five EA-6B aircraft.

d. Concept of Employment

The VMAQ will normally be employed in general support of the FMF or other assigned forces.

e. Administrative Capability

This squadron is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. This squadron is capable of organizational (1st echelon) maintenance on all assigned Marine Corps-funded equipment and organizational (2d echelon) maintenance on infantry weapons. It is authorized to perform 1st through 4th echelon maintenance on Tactical Electronic Reconnaissance Processing and Evaluation System (TERPES) commercial-off-the-shelf or nondevelopmental items (COTS/NDI), with 5th echelon maintenance being performed by equipment manufacturers/vendors. It is capable of performing organizational maintenance on assigned aircraft and Navy-funded equipment. Intermediate-level ordnance, avionics, aircraft maintenance, and other aviation logistic support is provided by the supporting MALS.

(2) Supply. Supply support is provided by the MALS and the MAG headquarters.

(3) Transportation. Motor transport support is provided by the MWSS.

(4) Medical. The VMAQ is capable of providing routine and emergency medical support.

(5) Messing. Food service support is provided by the MWSS.

3406. Marine Unmanned Aerial Vehicle Squadron

a. Mission

The VMU operates and maintains a UAV system to provide unmanned aerial reconnaissance support to the MAGTF.

b. Tasks

Conduct reconnaissance, surveillance, and target acquisition (RSTA). This includes performing airborne surveillance of designated target areas, MAGTF areas of interest/influence, and other areas as directed; airborne surveillance for search and rescue (SAR) and TRAP; and reconnaissance of helicopter approach and retirement lanes in support of vertical assaults.

Provide real-time target information to the DASC and fire support coordination center (FSCC) to facilitate adjusting fire missions and CAS.

Provide information to assist adjusting indirect-fire weapons and to support and facilitate DAS and air interdiction.

Collect battle damage assessments (BDAs).

Support rear area security.

Provide remote receive capability and liaison to designated units.

Conduct individual and unit training to prepare for tactical employment and combat operations.

c. Concept of Organization

The VMU is organic to the MAW and is structured to operate as a subordinate unit of one of the MAGs. The VMU is organized into various sections that give it the capability to operate and maintain one UAV system and associated support equipment. Its MALS augment section is designed to provide intermediate-level aviation maintenance and supply support. The VMU has one Pioneer system with five UAVs.
d. Concept of Employment

The VMU can support any size MAGTF. Normal employment would be as an integral unit of an ACE in support of MAGTF operations. The squadron is capable of limited independent operations.

e. Administrative Capability

The squadron is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. The squadron is capable of conducting 1st and 2nd echelon maintenance on assigned Marine Corps ground equipment, including motor transport, engineering and communications equipment, and infantry weapons. The CSS detachment (CSSD) performs 3rd and 4th echelon maintenance on ground equipment. The squadron is also capable of performing organizational maintenance on aviation equipment. The MALS performs limited, specialized intermediate-level maintenance on aviation equipment.

(2) Supply. Supply support is provided by the MAG and the MALS.

(3) Transportation. The squadron is capable of providing sufficient motor transportation to displace the operational capability of one UAV system. Additional transportation support is required to displace all equipment of the VMU simultaneously.

(4) Medical. The squadron is capable of providing routine and emergency medical support.

(5) Messing. Food service support is provided by the MWSS.

3407. Marine Fighter Attack Squadron

a. Mission

The VMFA intercepts and destroys enemy aircraft under all weather conditions and attacks and destroys surface targets.

b. Tasks

w Intercept and destroy enemy aircraft in conjunction with ground or airborne fighter control under all weather conditions.
w Maintain the capability to attack and destroy surface targets by using all types of conventional weapons that are compatible with assigned aircraft.
w Provide escort of friendly aircraft under all weather conditions.
w Maintain the capability to deploy and operate from aircraft carriers and advance bases.
w Conduct day and night CAS under adverse weather conditions.
w Maintain the capability to deploy or conduct extended-range operations by using aerial refueling.
w Maintain the capability to conduct suppression of enemy air defense (SEAD) operations.
w Perform organizational maintenance on assigned aircraft.

c. Concept of Organization

This squadron will normally function as an integral unit. It is structured to operate as a subordinate unit of a MAG. Each squadron has 12 F/A-18A/C aircraft.

d. Concept of Employment

The VMFA will normally be employed as an integral unit of an ACE.

e. Administrative Capabilities

This squadron is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. The VMFA is capable of organizational (1st echelon) maintenance on all assigned equipment and organizational (2nd echelon) maintenance on infantry weapons. It is capable of performing organizational maintenance on assigned aircraft and support equipment.

(2) Supply. Supply support is provided by the MALS and the MAG headquarters.
(3) **Transportation.** Motor transport support is provided by the MWSS.

(4) **Medical.** This squadron is capable of providing routine and emergency medical support.

(5) **Messing.** Food service support is provided by the MWSS.

### 3408. Marine All-Weather Fighter Attack Squadron

**a. Mission**

The VMFA(AW) attacks and destroys surface targets, day or night, under adverse weather conditions; conducts multisensor imagery reconnaissance; provides supporting arms coordination; and intercepts and destroys enemy aircraft under all weather conditions.

**b. Tasks**

- Conduct day and night CAS, under all weather conditions.
- Conduct day and night DAS, under adverse weather conditions, including armed reconnaissance, radar search and attack, air interdiction, and strikes against enemy installations, by using all types of weapons that are compatible with assigned aircraft.
- Conduct multisensor imagery reconnaissance, including prestrike and poststrike target damage assessment and visual reconnaissance.
- Conduct day and night supporting arms coordination, including forward air control, tactical air coordination, and artillery/naval gunfire spotting.
- Intercept and destroy enemy aircraft in conjunction with ground and airborne fighter direction.
- Conduct battlespace illumination and target illumination.
- Conduct armed escort of friendly aircraft.
- Maintain the capability to operate from aircraft carriers, advance bases, and expeditionary airfields.
- Maintain the capability to deploy or conduct extended-range operations by using aerial refueling.
- Maintain the capability to conduct SEAD operations.
- Perform organizational maintenance on assigned aircraft.

**c. Concept of Organization**

The VMFA(AW) will normally function as an integral unit. It is structured to operate as a subordinate unit of a MAG. Each squadron has 12 F/A-18D aircraft.

**d. Concept of Employment**

This squadron will normally be employed as an internal unit of an ACE.

**e. Administrative Capability**

This squadron is capable of self-administration.

**f. Logistic Capabilities**

1. **Maintenance.** This squadron is capable of organizational (1st echelon) maintenance on all assigned Marine Corps equipment and organizational (2d echelon) maintenance on infantry weapons. It is also capable of performing organizational maintenance on assigned aircraft and support equipment.
2. **Supply.** Supply support is provided by the MALS and MAG headquarters.
3. **Transportation.** Motor transport is provided by the MWSS.
4. **Medical.** This squadron is capable of providing routine and emergency medical support.
5. **Messing.** Food service is provided by the MWSS.

### 3409. Marine Attack Squadron

**a. Mission**
The VMA attacks and destroys surface targets under day and night visual meteorological conditions and provides helicopter escort.

b. Tasks

- Conduct CAS.
- Conduct armed reconnaissance, air interdiction, and strikes against enemy installations by using all types of conventional munitions that are compatible with assigned aircraft.
- Conduct air defense operations within the capability of assigned aircraft.
- Maintain the capability to operate during darkness and under instrument conditions.
- Maintain the capability of deployment or extended operations by employing aerial refueling.
- Maintain the capability to operate from aboard carriers, other suitable seagoing platforms, expeditionary airfields, and remote tactical landing sites.
- Conduct armed-escort missions in support of helicopter operations.
- Perform organizational maintenance on assigned aircraft.

c. Concept of Organization

This squadron will function either as an integral unit or as a squadron (-) with a deployed aircraft detachment. This concept of organization facilitates dual-site operations, provides for the support of simultaneous contingencies, and allows for the fulfillment of continuous unit deployment program requirements. Each squadron has 16 AV-8B aircraft, 10 in the squadron and 6 in the detachment.

d. Concept of Employment

This squadron will normally be employed as an integral unit of an ACE. The squadron may be employed as a complete squadron or as a squadron (-) with a deployed six-aircraft detachment.

e. Administrative Capability

This squadron is capable of self-administration.

f. Logistic Capability

(1) Maintenance. This squadron is capable of organizational (1st echelon) maintenance on all assigned Marine Corps equipment and organizational (2d echelon) maintenance on infantry weapons. It is also capable of performing organizational maintenance on assigned aircraft and support equipment.

(2) Supply. Supply support is provided by the MALS and the MAG headquarters.

(3) Transportation. Motor transport support is provided by the MWSS.

(4) Medical. This squadron is capable of providing routine and emergency medical support.

(5) Messing. Food service support is provided by the MWSS.

3410. Marine Heavy Helicopter Squadron (CH-53D)

a. Mission

The HMH provides assault helicopter transport of heavy weapons, equipment, and supplies during amphibious operations and subsequent operations ashore.

b. Tasks

- Provide combat assault transport of heavy weapons, equipment, and supplies as a primary function.
- Provide combat assault transport of troops (exclusive of initial assault wave infantry) as a secondary function.
- Conduct tactical retrieval and recovery operations for downed aircraft, equipment, and personnel.
- Conduct assault support for evacuation operations and other maritime special operations.
- Provide support for mobile forward arming and refueling points (FARPs).
Augment local SAR and provide aeromedical evacuation of casualties from the field to suitable medical facilities or other aeromedical aircraft.

Provide airborne control and coordination for assault support operations.

Maintain a self-defense capability from ground-to-air and air-to-air threats.

Maintain the capability to operate from amphibious shipping, other floating bases, and austere shore bases, as required.

Maintain the capability to operate at night, in adverse weather conditions, and under instrument flight conditions at extended ranges.

Perform organizational maintenance on assigned aircraft in all environmental conditions.

c. Concept of Organization

This squadron will function either as an integral unit or as a squadron (-) with one or two separate detachments. This concept of organization facilitates dual-site operations, provides support for simultaneous contingencies, and allows for the fulfillment of continuous unit deployment program requirements. Each squadron has eight CH-53D aircraft organized in two detachments of four aircraft each. All squadrons fall under the aviation support element based in Kanehoe Bay, HI. Squadrons are sourced out as operational needs arise.

d. Concept of Employment

This squadron, or its separate detachments, will normally be employed as an integral unit of an ACE. The squadron may be employed as a single unit or with one or two separate four-plane detachments.

e. Administrative Capabilities

This squadron is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. This squadron is capable of organizational (1st echelon) maintenance on all assigned equipment and organizational (2d echelon) maintenance on infantry weapons. It is capable of performing organizational maintenance on assigned aircraft and support equipment.

(2) Supply. Supply support is provided by the MALS and the MAG headquarters.

(3) Transportation. Motor transport support is provided by the MWSS.

(4) Medical. This squadron is capable of providing routine and emergency medical support.

(5) Messing. Food service support is provided by the MWSS.

3411. Marine Heavy Helicopter Squadron (CH-53E)

a. Mission

This squadron provides assault helicopter transport of heavy weapons, equipment, and supplies during amphibious operations and subsequent operations ashore.

b. Tasks

Provide combat assault transport of heavy weapons, equipment, and supplies as a primary function.

Provide combat assault transport of troops (exclusive of initial assault wave infantry) as a secondary function.

Conduct tactical retrieval and recovery operation for downed aircraft, equipment, and personnel.

Conduct assault support for evacuation operations and other maritime special operations.

Provide support for FARPs.

Augment local SAR assets and provide aeromedical evacuation of casualties from the field to suitable medical facilities or other aeromedical aircraft.

Provide airborne control and coordination for assault support operations.

Maintain the capability to deploy and conduct extended-range operations by employing aerial refueling.
w Maintain a self-defense capability from ground-to-air and air-to-air threats.
w Maintain the capability to operate from amphibious shipping, other floating bases, and austere shore bases, as required.
w Maintain the capability to operate at night, in adverse weather conditions, and under instrument flight conditions at extended ranges.
w Perform organizational maintenance on assigned aircraft in all environmental conditions.

**c. Concept of Organization**

This squadron will normally function either as an integral unit or as a squadron (-) with one or two separate detachments. This concept of organization facilitates dual-site operations, provides for the support of simultaneous contingencies, and allows for the fulfillment of continuous unit deployment program requirements. Each squadron has 16 CH-53E aircraft.

**d. Concept of Employment**

This squadron or its separate detachments will normally be employed as an integral unit of an ACE. The squadron may deploy as a complete squadron or as one or two four-plane detachments.

**e. Administrative Capabilities**

This squadron is capable of self-administration.

**f. Logistic Capabilities**

1. **Maintenance**. This squadron is capable of organizational (1st echelon) maintenance on all assigned equipment and organizational (2d echelon) maintenance on infantry weapons. It is capable of performing organizational maintenance on assigned aircraft and support equipment.

2. **Supply**. Supply support is provided by the MALS and the MAG headquarters.

3. **Transportation**. Motor transport support is provided by the MWSS.

4. **Medical**. This squadron is capable of providing routine and emergency medical support.

5. **Messing**. Food service support is provided by the MWSS.

**3412. Marine Medium Helicopter Squadron**

**a. Mission**

The HMM provides assault transport of combat troops in the initial assault waves and follow-on stages of amphibious operations and subsequent operations ashore.

**b. Tasks**

w Provide combat assault troop transport as a primary function.
w Provide combat assault transport of supplies and equipment as a secondary function.
w Conduct assault support for evacuation operations and other maritime special operations.
w Provide support for mobile FARPs.
w Provide airborne control and coordination for assault support operations.
w Maintain a self-defense capability from ground-to-air and air-to-air threats.
w Maintain the capability to operate from amphibious shipping, other floating bases, and austere shore bases.
w Maintain the capability to operate at night, in adverse weather conditions, and under instrument flight conditions at extended ranges.
w Augment local SAR assets and provide aeromedical evacuation of causalities from the field to suitable medical facilities or other aeromedical aircraft.
w Perform organizational maintenance on assigned aircraft in all environmental conditions.

**c. Concept of Organization**

This squadron will normally function as an integral unit. It is structured to operate as a subordinate unit of a MAG. Each squadron has 12 CH-46E aircraft.

Tactical HMMs will begin replacing the CH-46E helicopter with the MV-22 tilt-rotor aircraft beginning in fiscal year 2002. The MV-22 is a dual-piloted, multiengine, self-deployable, medium-lift, vertical takeoff and landing
(VTOL) tilt-rotor aircraft that provides combat assault support, CSS, and special operations support worldwide. The aircraft will operate from air-capable ships, main bases ashore, and austere forward operating locations. The MV-22 is capable of in-flight refueling, has a 2,100 nautical mile deployment range, and can carry 24 combat-equipped troops or a 10,000-pound external load. The squadron may have a mission and tasks similar to those of the current unit operating with CH-46E aircraft.

d. Concept of Employment

This squadron will normally be employed as an integral unit of an ACE.

e. Administrative Capability

This squadron is capable of self-administration.

f. Logistic Capabilities

1. Maintenance. This squadron is capable of organizational (1st echelon) maintenance on all assigned equipment and organizational (2d echelon) maintenance on infantry weapons. It is capable of performing organizational maintenance on assigned aircraft and support equipment.

2. Supply. Supply support is provided by the MALS and the MAG headquarters.

3. Transportation. Motor transport support is provided by the MWSS.

4. Medical. The HMM is capable of providing routine and emergency medical support.

5. Messing. Food service support is provided by the MWSS.

3413. Marine Light/Attack Helicopter Squadron

a. Mission

The HMLA provides combat utility helicopter support, attack helicopter fire support, and fire support coordination during amphibious operations and subsequent operations ashore.

b. Tasks

1. Utility Helicopter Tasks

w Provide an airborne command and control platform for CEs.

w Provide armed escort for assault support operations.

w Provide combat assault transport of troops, supplies, and equipment.

w Provide airborne control and coordination for assault support operations.

w Augment local SAR assets and provide aeromedical evacuation of casualties from the field to suitable medical facilities or other aeromedical aircraft.

w Conduct combat assault and assault support for evacuation operations and other maritime special operations.

w Control, coordinate, and provide terminal guidance for supporting arms, including CAS, artillery, mortars, and naval gunfire (NGF).

w Provide fire support and security for forward and rear area forces.

w Maintain a self-defense capability from surface-to-air and air-to-air threats.

w Maintain the capability to operate from amphibious shipping, other floating bases, and austere shore bases, as required.

w Maintain the capability to operate at night, in adverse weather conditions, and under instrument flight conditions at extended ranges.

w Perform organizational maintenance on assigned aircraft in all environmental conditions.

2. Attack Helicopter Tasks

w Provide fire support and security for forward and rear area forces.

w Conduct point target/antiarmor operations.

w Conduct antihelicopter operations.

w Provide armed escort, control, and coordination for assault support operations.
Control, coordinate, and provide terminal ordnance for supporting arms, including CAS, artillery, mortars, and NGF.

Provide point and limited-area air defense from threat fixed-wing aircraft.

Conduct armed and visual reconnaissance.

Augment local SAR assets.

Maintain the capability to operate from amphibious shipping, other floating bases, and austere shore bases as required.

Maintain the capability to operate at night, in adverse weather conditions, and under instrument flight conditions at extended ranges.

Perform organizational maintenance on assigned aircraft in all environmental conditions.

c. Concept of Organization

This squadron will function either as an integral unit or as a squadron (-) with separate aircraft composite detachments. This concept of organization facilitates dual-site operations, provides for the support of simultaneous contingencies, and allows for the fulfillment of continuous unit deployment program requirements. Each squadron has 18 AH-1W and 9 UH-1N aircraft.

d. Concept of Employment

The HMLA will normally be employed as an integral unit of an ACE. The squadron may deploy as a complete unit, or in three detachments consisting of six AH-1 and three UH-1 aircraft per detachment.

e. Administrative Capability

This squadron is capable of self-administration.

f. Logistic Capability

(1) Maintenance. This squadron is capable of organizational (1st echelon) maintenance on all assigned Marine Corps equipment and organizational (2d echelon) maintenance on infantry weapons. It is capable of performing organizational maintenance on assigned aircraft and support equipment. Detachments of this squadron are not capable of self-support and will be assigned to applicable units that possess the general organizational capability for their remaining logistic requirements.

(2) Supply. Supply support is provided by the MALS and the MAG headquarters.

(3) Transportation. Motor transport support is provided by the MWSS.

(4) Medical. This squadron is capable of providing routine and emergency medical support.

(5) Messing. Food service support is provided by the MWSS.
Section V. Marine Wing Support Group

3501. General

The MWSG (figure 3-11) provides all essential ground support requirements to aid designated fixed- or rotary-wing components of a Marine FOB. The MWSG typically includes a headquarters and headquarters squadron (H&HS), two MWSSs (fixed wing), and two MWSSs (rotary wing). The group is organized to provide motor transport, engineering services, and organizational maintenance (motor transport and engineering) for units of the MAW. The MWSG is organized and equipped for employment as an integral unit in support of the MAW. It is structured to provide deployable elements in support of the garrison or deployed posture of the MAW.

3502. Headquarters and Headquarters Squadron

a. Mission

The H&HS provides administrative support for the group and squadron headquarters.

b. Tasks

- Provide command, control, administrative, and ecclesiastical support for assigned units.
- Provide routine and emergency sick call functions.

3502.1. Concept of Organization

This organization will normally function as an integral unit. It is structured to operate as the command and control element of the MWSG.

d. Concept of Employment

This organization functions as an integral unit of the MWSG in support of the MAW and its assigned unit(s).

e. Administrative Capabilities

This organization is capable of self-administration.

f. Logistic Capabilities

(1) Maintenance. This organization is capable of organizational (1st echelon) maintenance on all assigned

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Figure 3-11. Marine Wing Support Group.
equipment and organizational (2nd echelon) maintenance on assigned NBC defense equipment.

(2) **Supply.** The H&HS possesses the capability to perform organic supply functions. It supervises organic supply functions of subordinate MWSG units.

(3) **Transportation.** Transportation is provided by collocated MWSG unit(s).

(4) **Medical.** The H&HS is capable of providing routine and emergency sick call.

(5) **Messing.** Messing support is provided by collocated MWSG unit(s).

3503. Marine Wing Support Squadron: Fixed Wing/Rotary Wing

a. **Mission**

The MWSS provides all essential aviation ground support requirements to a designated fixed-wing/rotary-wing component of an ACE and all supporting or attached elements of the MACG.

b. **Tasks**

The MWSS conducts airfield operations, except for ATC, for supported ACE unit(s). These operations include:

- Providing internal airfield communications, including tactical telephone service in and about the airfield as well as for tenant ACE units, communications for airfield security, communications for ground transportation management, and communications between an airfield and its adjacent facilities (i.e., ammunition dump and petroleum, oils, and lubricants sites).
- Providing weather services.
- Providing expeditionary airfield services, including maintaining M-21 aircraft recovery equipment, fresnel lens, communications, airfield lighting, and other related equipment necessary to support air operations.
- Supplying crash/fire/rescue and structural firefighting equipment.
- Providing aircraft and ground refueling.
- Providing essential engineer services, including engineer reconnaissance/survey; repair, improvement, and maintenance of existing road nets within the ACE area of responsibility; construction and maintenance of expedient roads; construction (except for subsurface and surface preparation) improvement and maintenance of V/STOL facilities, not to exceed 900 feet; construction and maintenance of mission-essential base camp requirements, including tactical airfield fuel distribution systems and helicopter expeditionary refueling system installations, temporary bunkers, temporary aircraft revetments, and strongbacks; technical and equipment assistance for erection of shelters; utilities support, including essential mobile electric power, water, and hygiene support; development, improvement, and maintenance of drainage systems; supervision of camouflage requirements; equipment and personnel required for rapid runway repair; materials handling equipment to support base operations; limited mine detection capability; and limited combat engineer services.
- Providing motor transport for operations internal to the air base.
- Providing messing facilities.
- Providing routine and emergency sick call and aviation medical functions.
- Providing individual and unit training or organic personnel and selected personnel of support units.
- Providing organic NBC defense.
- Providing security and law enforcement services, including security of flight line and critical airfield facilities; traffic control/enforcement, convoy escort, and traffic accident investigation; straggler collection and refugee control; and criminal investigation, physical security surveys, and related activities.
- Providing air base commandant functions.
c. Concept of Organization
The MWSS will normally function as an integral unit. It is structured to operate as a subordinate unit of the MWSG.

d. Concept of Employment
This organization functions as an integral unit of the ACE.

e. Administrative Capabilities
This organization is capable of self-administration.

f. Logistic Capabilities
(1) Maintenance. This organization is capable of organizational (1st and 2nd echelon) maintenance of all assigned engineer, motor transport, communications, field food service, and NBC defense equipment, as well as weapons. It is capable of intermediate (3d and limited 4th echelon) maintenance on expeditionary airfield systems equipment and provides organizational (2d echelon) maintenance of engineer and motor transport equipment of supported unit(s), except for the elements of the MACG.

(2) Supply. This organization is capable of performing supply and fiscal functions that are required for squadron operations with the exception of Navy-funded equipment, which requires support from a designated aviation element.

(3) Transportation. This organization possesses sufficient motor transport equipment to accomplish assigned missions and tasks.

(4) Medical. This organization is capable of providing routine and emergency medical support.

(5) Messing. This organization provides food services support for the air base/facility.

(6) Selected Items of Equipment. For a list of equipment items, see table 3-7.
### Table 3-7. Selected Items of Equipment for the MWSS.

<table>
<thead>
<tr>
<th>TAM Number</th>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>A0421</td>
<td>Communications system, crash/fire/rescue (base station mode), AN/GRC237</td>
<td>3</td>
</tr>
<tr>
<td>A0422</td>
<td>Communications system, crash/fire/rescue (vehicle mode), OG196/PRC</td>
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</tr>
<tr>
<td>A0815</td>
<td>Lighting set, helicopter, portable</td>
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<tr>
<td>A1011</td>
<td>Marine CSS Command and Control System</td>
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<tr>
<td>A1415</td>
<td>Radar set (LBSR), AN/PPS15A(V)2</td>
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<tr>
<td>B0055</td>
<td>Bath shower unit, expeditionary, field</td>
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<tr>
<td>B0443</td>
<td>Crane, high speed, high mobility, with pile-driver capacity</td>
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</tr>
<tr>
<td>B0471</td>
<td>Demolition equipment, engineer squad</td>
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<td>B0475</td>
<td>Detecting set, mine, metallic, portable, AN/PSS12</td>
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<td>B0590</td>
<td>Excavator, hydraulic, multipurpose, wheeled, MC40DR</td>
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<td>Excavator, hydraulic, medium weight, rough terrain, MC1085C</td>
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<td>B0675</td>
<td>Fuel dispensing system, airfield, tactical (Firestone), MM1966</td>
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<tr>
<td>B1082</td>
<td>Grader, road, motorized, 130G</td>
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<tr>
<td>B1135</td>
<td>Refueling system, expedient, helicopter</td>
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<td>B1226</td>
<td>Laundry unit, field, MTR-3510-013</td>
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<td>B1300</td>
<td>Platform, maintenance, crane, air mobile</td>
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<tr>
<td>B1775</td>
<td>Ripper attachment, three shank, MTG F/TRCTR, full-tracked D7G</td>
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<tr>
<td>B1785</td>
<td>Roller, compactor, vibratory, 420-C RAYGO</td>
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<tr>
<td>B2460</td>
<td>Tractor, full tracked, with angle blade, T5</td>
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<tr>
<td>B2462</td>
<td>Tractor, full tracked, medium, D7G</td>
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<tr>
<td>B2464</td>
<td>Tractor, full tracked, with multipurpose bucket, MC1150E</td>
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<td>B2482</td>
<td>Tractor, all wheel drive, with attachments, FLU 419</td>
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<tr>
<td>B2561</td>
<td>Truck, forklift, extendable boom, DT-970424</td>
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<td>Truck, forklift, rough terrain, 4,000 lb, 8606</td>
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<td>Tractor, rough terrain, articulated steer, 644E</td>
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<td>B2604</td>
<td>Purification unit, water, reverse osmosis</td>
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<td>B2628</td>
<td>Purification unit, water, fresh, medium, 3,000-gal limit</td>
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<td>Semitrailer, refueler, 5,000 gal, four wheel, M970</td>
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<td>Semitrailer, low bed, 40 ton, M870A1</td>
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<td>D0876</td>
<td>Trailer, powered, 22 1/2 ton, container hauler, 4 x 4, make 14 model 0</td>
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<td>D0878</td>
<td>Trailer, powered, fifth wheel, semitrailer adapter, 4 x 4, make 16 model 0</td>
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<td>D1061</td>
<td>Truck, cargo, 5 ton, long bed, M928</td>
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</tr>
<tr>
<td>D1064</td>
<td>Truck, fire fighting, aircraft and structure, A/S32P19A</td>
<td>25</td>
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<tr>
<td>D1072</td>
<td>Truck, dump, 5 ton, 6 x 6, M929</td>
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<tr>
<td>D1082</td>
<td>Truck, fire fighting, 1 1/4 ton, 4 x 4, M1028FF</td>
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<tr>
<td>D1212</td>
<td>Truck, wrecker, 5 ton, 6 x 6, M936</td>
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<tr>
<td>E0312</td>
<td>Dual mount, machine gun, MK93 model 0</td>
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<tr>
<td>E0980</td>
<td>Machine gun, .50 cal, Browning, heavy barrel, flexible, M2</td>
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<tr>
<td>E0989</td>
<td>Machine gun, medium, 7.62 mm, ground version, M240G</td>
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<tr>
<td>E0993</td>
<td>Machine gun, 7.62 mm, M60E3</td>
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</tr>
<tr>
<td>E0994</td>
<td>Machine gun, 40 mm, MK19 model 3</td>
<td>6</td>
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</tbody>
</table>