F.1.0 APPENDIX F - EXPEDITIONARY OPERATIONS WARFARE AREAS - CURRENT SYSTEM OR SITUATION

Within the context of this document, Expeditionary Operations are those operations outside the Naval Warfare Areas covered in the adjacent appendixes. Expeditionary Operations are not limited to a particular region or scope and are most often conducted from the littorals. The scope of Expeditionary Operations covers the Area of Concern of the supported unit/commander spanning force level amphibious assaults to Non-Traditional Warfare missions conducted by Marine Expeditionary Units. Expeditionary Operations are the responsibility of Marine forces while embarked or pre-positioned ashore. The focus of this appendix is aviation mission planning in support of Expeditionary Operations. The responsibilities include but are not limited to Amphibious Operations and follow-on operations ashore, operations conducted by Marine Forces afloat or pre-positioned ashore, and those aviation activities supporting Non-Traditional Warfare and Operations Other Then War. The preponderance of assets involved in and supported by Expeditionary Operations are Marine and thus the governing organizational structure associated with these operations is the Marine Air Ground Task Force (MAGTF). The following is a list of Marine Corps doctrinal publications associated with this appendix.

- Expeditionary Operations (MCDP 3)
- Planning (MCDP 5)
- Command and Staff Action (FMFM 3-1)
- Anti-air Warfare (MCWP 3-22)
- Offensive Air Support (MCWP 3-23)
- Close Air Support (MCWP 3-23.1)
- Deep Air Support (MCWP 3-23.2)
- Assault Support (MCWP 3-24)
- MAGTF Aviation Planning (MCWP 5-11.1)

F.1.1 BACKGROUND, OBJECTIVES, AND SCOPE

The intent of this appendix is to introduce to the Joint Mission Planning System (JMPS) developer, the doctrinal concepts relevant to Expeditionary Operations with the emphasis on the requirements imposed on the aviation *Mission Planner*. Aviation Expeditionary Operations are divided into three functional areas doctrinally, *Anti-Air Warfare, Offensive Air Support, and Assault Support*. The scope of the JMPS developmental effort must address the influences unique to each, the significance of these influences, and the interdependent planning requirements. A description of the functional areas is included to provide background information, highlight requirements and functional area unique elements of mission planning. The majority of *Mission Planning* requirements unique to these functional areas are germane to the mission being performed and not exclusively to the asset performing the mission. The information required to effectively conduct subsequent *Flight Planning* is a by-product of the *Mission Planning* effort.

The target audience of this appendix is the JMPS developer not the mission planner. The perspective is deliberately intended to facilitate an understanding beyond the fact that

Expeditionary mission planning is different. The JMPS developer must comprehend the *WHAT, HOW* and *WHY* of this application of mission planning to successfully meet the requirements of the operator. This area of mission planning supports the most complex military operation known, the Amphibious Assault. The planning responsibilities for amphibious operations, although beyond the scope of this document, are dependent on substantial aviation support. Planning influences like mission duration, amount and type of assets required, and command relationships all contribute to the complexity of this mission area. The JMPS developmental effort must focus on augmenting these complex yet standardized aviation planning processes. *Mission Accomplishment is the ultimate goal. Efficient, Timely*, and *Flexible* mission planning combined with *Effective* briefing are significant contributors to successful Mission Accomplishment. This appendix is not a guide to operational mission planning, it is a developer-centric substantiation of this unique aspect of mission planning.

F.1.2 DESCRIPTION OF THE CURRENT SYSTEM OR SITUATION

Standardized planning principals are the cornerstones of effective mission planning. As with the adjacent appendixes, the basic planning philosophy applied to Expeditionary Operations is simple. Mission tasking is received followed by mission analysis. A general concept brief is presented to the Commander seeking initial approval and detailed guidance for subsequent detailed planning. Following detailed planning, the Commander's approval is sought again. Once the Commander is satisfied, refinements are made and detailed briefings for the operators and mission rehearsals are conducted. Throughout the process additional information is supplied/made available that can have very little or dramatic significance. The planning process is designed to accommodate the situation as it develops when possible contingencies and vulnerable aspects of the plan are identified. There are several prerequisites to the initiation of the planning effort and conditions critical to its effective and timely completion. The minimum information required to begin mission planning is the *Commanders Intent*. The earlier that this critical insight is provided, the sooner the mission commander can begin to accumulate the required situationally dependent information for analysis and incorporation into the mission planning effort. The general sequence of mission planning is the same as most aviation mission planning.

a. Receipt of Mission
b. General Mission Analysis
c. General Estimate of Requirements
d. General Course of Action(s)
e. General Estimates of Supportability and Initial Approval
f. Detailed Mission Analysis
g. Detailed Support Requirements
h. Detailed Staff Planning
i. Detailed Briefings of Estimates, Modifications, Special Requirements and Approval
j. Detailed Operators Briefings and Mission Rehearsals

The general principals expressed in the doctrinal publications; *Command and Staff Action* (FMFM 3-1), *Expeditionary Operations* (MCDP-3), and *Planning* (MCDP 5) contain the broad insight to the *WHY* of this aspect of mission planning. Detailed insight of the *WHAT* is found in; *Anti-air*

Warfare (MCWP 3-22), *Offensive Air Support* (MCWP 3-23), *Close Air Support* (MCWP 3-23.1), *Deep Air Support* (MCWP 3-23.2), and *Assault Support* (MCWP 3-24). Essential detailed operational insight of the *HOW* is contained in the *Training Publications, Planning Considerations Checklists, Briefings Guides,* and *Planning Handbooks* available from Marine Aviation Weapons and Tactics Squadron One (MAWTS-1). MAWTS-1 is the responsible agency for the standardized operational employment of Marine Aviation and thus the single point of contact for all matters involving the operational application of Marine Aviation mission planning. The detail required to accurately and effectively substantiate the *WHY* of Expeditionary Operations mission planning is outside the context and scope of this document. The documentation relevant to this subject is essential to all personnel associated with the JMPS effort. The single most important asset available to the developing activity will be the Subject Matter Expert(s) (SME(s)) resident at MAWTS-1.

The most fundamental element of planning is a coherent and flexible planning philosophy that affords the elements involved the ability to determine the mission, its support requirements, and those critical tasks required to complete the mission. The fundamental principle of the MAGTF is that all the assets and supporting activities are combined on a mission by mission basis to fulfill the requirements of the mission. When the *Task Organizing* concept is applied, the mission planning system supporting it must be robust enough to operate across the spectrum of MAGTF operations. The MAGTF spectrum will demand physical characteristics of ruggedness, transportability, compactness, stand-alone or networked operations, data transfer device loading, and intuitive human factors. The operating system must be capable of interfacing with the necessary external applications/systems that support the information and coordination requirements of the planners.

The Expeditionary Operations standardized mission planning processes must be supported and augmented with respect to the planning/briefing sequence and products, presentation formats, standardized administrative requirements (flight schedule, support request forms, etc.), inflight products (hard-copy and electronic), and historical file development and maintenance. One of the key elements incorporated in the MAGTF concept is the use of Standardized Operating Procedures (SOP's). Established SOP's enable unfamiliar components to operate effectively based on common training goals in the absence of combined training. The planning and briefing aspects of standardized procedures are paramount. The operational prowess of the MAGTF concept is its adherence to the *Combined Arms* philosophy. The *Combine Arms* philosophy enables its subscribers to maximize their potential despite their opponent. *Information Management* is the mission planners application of the *Combined Arms* concept. Having access to information is not adequate. The ability to filter, interpret, and apply information is what determines its usefulness.

The following is a list of doctrinal responsibilities that fall under the category of Expeditionary Operations.

a. Anti-air Warfare
b. Offensive Air Support (OAS)
c. Assault Support
d. Command, Control, and Communication (C3)
e. General Aviation Support

F.1.2.1 Anti-air Warfare

Anti-air warfare (AAW) is that action required to destroy or reduce to an acceptable level the enemy air and missile threat. There are two general types of AAW: Offensive AAW (OAAW) and air defense. OAAW constitutes operations conducted against enemy air or air defense systems before they can launch or assume an attacking role. OAAW 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. Air defense consists of defensive measures designed to destroy attacking enemy aircraft or missiles or to nullify or reduce the effectiveness of such attack (Joint Pub 1-02). Air defense can be further broken down into two categories: active air defense and passive air defense. 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. It includes such measures as the use of aircraft, interceptor missiles, air defense artillery, non-air defense weapons in an air defense role, and electronic countermeasures. Passive air defense constitutes all measures, other than active air defense, taken to minimize the effects of hostile air action. These measures include the use of cover, concealment, camouflage, deception, dispersion, and protective construction.

OAAW objectives include weakening the enemy's offensive air capability to a manageable level, thereby gaining access to a zone of airspace for a specified time frame to allow friendly air operations and local air superiority in conjunction with friendly operations. These objectives can be incorporated into three specific areas: preemptive measures, suppression of enemy air defenses (SEAD), and local air superiority measures. OAAW is defined by three specific tasks, each with its corresponding objective.

F.1.2.1.1 Preemptive Measures

The objective is to weaken the enemy air threat before the enemy can make effective use of his air defense systems (air-to-air elements, ground-to-air elements, and support C3 structure) and prevent attainment of MAGTF objectives. Preemptive measures are required in the early phase of an amphibious operation and in sustained operations ashore. Preemptive measures allow subsequent air and ground operations to proceed without prohibitive interference. Preemptive measures can include:

- Air strikes on enemy airfields to destroy or damage aircraft, facilities, and logistic support.
- Attacks on command and control facilities and surveillance systems.
- Air strikes on the enemy's aircraft supply and support, such as railroads and convoys.
- Offensive air-to-air sweeps to search out and destroy enemy aircraft.

F.1.2.1.2 Suppression of Enemy Air Defenses (SEAD)

The objective of SEAD is to gain access to a defined zone of airspace that will allow MAGTF operations to proceed. SEAD may become periodic in nature, applied at a critical time that will allow air and ground forces to proceed without prohibitive interference from the enemy's air defense systems. SEAD is an important part of any campaign and the MAGTF must plan a coordinated effort against the enemy air defense threat. Sustainability of a coordinated

GCE/Aviation Combat Element (ACE) SEAD plan is a function of asset availability. See FMFM 5-40/5-41 for detailed SEAD planning. In conventional warfare, SEAD will include the following strategy mix:

- Direct confrontation of the enemy's air defense with ground forces.
- Direct confrontation of the enemy's air defense with air forces.
- Direct confrontation of the enemy's air defense with naval forces.
- Command and Control Warfare (C2W).

F.1.2.1.3 Local Air Superiority Measures

Even with successful application of preemptive measures and SEAD, a residual air threat may still exist. This threat may be of such a nature and magnitude that friendly air operations are still possible and survivable with proper application of local air superiority measures. The objective of local air superiority measures is to prevent the enemy residual air threat from affecting the execution of friendly operations to the point of prohibitive interference in a specific zone of action. Local air superiority measures may be used separately or in conjunction with preemptive measures and SEAD. Local air superiority measures can include:

- The use of offensive combat air patrols.
- Escort and self-escort tactics.
- The use of aircraft onboard countermeasures and maneuvers.

The primary purpose of AAW is to gain and maintain AIR SUPERIORITY. Air superiority is "that degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea, and air forces at a given time and place without prohibitive interference by the opposing force." The significant points for analysis in the preceding definition are "prohibitive interference" and "at a given time and place." In planning the conduct of an operation, the requirement exists to address these points in detail. For example, the single greatest vulnerability of an amphibious task force is during the ship-to-shore movement. Once forces are ashore, vulnerability still exists, but to a lesser degree. Therefore, the term "prohibitive interference" is relative to "a given time and place" and must be analyzed for each phase of a particular operation. The greater the scope of the operation, the more encompassing this analysis must be. The question arises as to the precise meaning of the term "prohibitive." A prohibitive level of interference exists for each phase or element of an operation beyond which success is improbable. The lack of success of any particular aspect of an operation is not necessarily characterized by abject failure. It may be limited to levels of damage or interference, which, if received, will seriously jeopardize the accomplishment of the assigned mission. Consequently, analysis of the major facets of the operation determines the level of interference, which is prohibitive. Once this determination is reached, the required AAW measures to minimize this "prohibitive interference" can be ascertained.

The Principles of AAW are: destruction in depth, mutual support, and centralized command and decentralized control. The application of these principles in necessary to achieve and preserve air superiority.

Destruction-in-Depth is considered the most important principle of AAW. The primary goal is to destroy the enemy air threat at its source. The area required to ensure destruction-in-depth is

designated as the Air Defense Sector. The Air Defense Sector consists of the vital area, the destruction area, and the surveillance area. By means of operation plans and orders, the Air defense Sector is made known to subordinate units of the MAGTF and to interested external commands. Effective communications range, detection range, weapons range (friendly and enemy), and the relative danger from an air or surface attack all govern the expansion or contraction of this area.

A vital area is a designated area or installation to be defended by air defense units. It contains the facilities, units, and installations necessary for the MAGTF to accomplish its mission. The outward edge or boundary of the vital area is always the reference point in applying destruction-in-depth principles. There may be one or more vital areas, depending on the scope of the operation. The probable method of air delivery, the anticipated weapons to be used by the enemy, and an overall standoff range by which enemy air attacks must be destroyed are examined in determining and designating the vital area. The vital area corresponds with designated Air Defense priorities.

The destruction area is an area in which it is planned to destroy or defeat the enemy airborne threat. It begins at the edge of the vital area. The size of the destruction area will depend upon the situation; however, the goal of every air defense system should be to make the destruction area as large as possible. The three factors which normally determine the size of the destruction area are the capabilities of the air defense weapons system, engagement sequence, and surveillance capabilities. The destruction area is normally divided into four geographical subdivisions: the missile engagement zone, crossover zone/line, fighter engagement zone and base defense zone. The missile engagement zone is that geographical division of the destruction area where surface-to-air missiles have primary responsibility for destruction of airborne targets. It is normally established to include the maximum range of the surface-to-air missile system. The crossover zone/line is that area in which a target normally ceases to be an air intercept target and becomes a surface-to-air missile target. The use of a crossover zone/line may not be necessary with aircraft using INS manning the Fighter Engagement Zone (FEZ). The fighter engagement zone is that part of the destruction area in which interceptor aircraft have the responsibility for destroying airborne targets. The base defense zone is an air defense zone established around an air base and limited to the short range air defense weapons system defending that base.

The surveillance area is the area in which air search, detection, and tracking are accomplished. It must extend beyond the destruction area to allow enough time for warning and identification so that reaction time will permit engagement as the target reaches the destruction area. This surveillance area is not coincidental with the destruction area as it is not limited by intercept positive control restrictions. Further, the destruction area is oriented totally toward the assigned air defense sector of responsibility, while the surveillance area might extend into another air defense sector. Special visual zones in specific avenues of approach may be used beyond the vital area or surrounding installations to further supplement surveillance coverage. The surveillance area must be large enough to provide maximum reaction time and a maximum number of engagements and destruction with minimum penetration of the vital area.

The mutual support concept involves the simultaneous engagement of a target by multiple elements of the same type weapon. In this way, the MAGTF increases the probability of preventing the penetration of the vital area by hostile aircraft or missiles. Proper location and/or employment of assets ensures that each target is within range of several AAW elements. This

integrated and overlapping pattern of mutual support and continuity of engagement minimizes any reduction in effectiveness of the AAW system resulting from the loss of one or more of its elements.

Centralized Command and Decentralized Control is the third principle of AAW and offers the best means of achieving economy of forces while minimizing reaction time and vulnerability to losses. Coordinated operations and economy of force require centralized command. To achieve a system that has minimum reaction time, maximum damage resistance, and inherent self-sufficiency requires the capability to function under decentralized control.

Successful accomplishment of AAW requires that the total capability of the MAGTF be merged into a single, flexible AAW system. This system must be capable of operating independently or as an integral part of the overall amphibious task force or joint task force AAW system. An effective AAW system integrates all available AAW assets and requires that the task of surveillance, control and weapons employment be performed. Surveillance concerned with detecting, locating, and identifying hostile targets on the ground and in the air and transmitting this information to a control agency. Control is the function of directing and coordinating the employment of weapons systems involved in destroying the enemy air capability. The AAW system should also provide the means to maintain positive control over friendly air support operations to prevent mutual interference in the accomplishment of missions. Weapons Employment involves the effective utilization of assets to destroy or reduce the enemy's capability for an air attack.

F.1.2.2 Offensive Air Support

Offensive Air support is defined as, "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." The MAGTF's inherent combat power is enhanced by the concept of combined arms. Combined arms is the full integration of arms in such a way, that in order to counteract one, the enemy must make himself more vulnerable to another. To accomplish this, a task organized MAGTF will integrate its aviation assets with its organic fire support assets, to effectively support the MAGTF scheme of maneuver. OAS operations apply firepower against the opponents' war making and sustaining capabilities. This firepower may be applied for one of two functions; either the neutralization or destruction of the assigned target(s). Destruction missions destroy enemy forces, equipment, supplies and installations. Destruction of the target may be difficult to achieve contingent upon the threat, target composition, MAGTF aviation assets and available weapons. Neutralization missions render areas, weapons, or enemy forces ineffective for a specified time. Neutralization may be applied when we can not afford to dedicate the assets to destroy the opponent, or when we decide that the most efficient application of force would be to "shut him down" for a set period of time, rendering the requirement for destruction unnecessary.

The MAGTF commander utilizes OAS throughout the operational spectrum to assist in attaining MAGTF objectives. "The MAGTF commander shapes the battlefield by focusing combined arms against critical enemy vulnerabilities. The destruction or neutralization of these targets creates the conditions for decisive action. The firepower, mobility, and flexibility provided by OAS are critical in establishing favorable conditions for deep, close, and rear operations."

OAS operations are divided into two major categories; Close Air Support (CAS) and Deep Air Support (DAS). Deep air support can be conducted in the form of either armed reconnaissance or air interdiction. The MAGTF commander utilizes DAS to shape the battlefield. DAS is defined as "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." Contrary to popular opinion, DAS can be conducted on both sides of the Fire Support Coordination Line (FSCL). When DAS is required short of the FSCL, coordination with the friendly forces is required. Air interdiction is defined as; "Air operations conducted to destroy, neutralize, or delay the enemy's military potential before it can be brought to bear effectively against friendly forces at such distance from friendly forces that detailed integration of each air mission with the fire and movement of friendly forces is not required." (Joint Pub 1-02). Armed reconnaissance is defined as "locating and attacking targets of opportunity, i.e., enemy material, personnel, and facilities, in assigned general areas or along assigned ground communication routes, and not for the purpose of attacking specific/located briefed targets." (Joint Pub 1-02) Given the structural weaknesses in the MAGTF's deep targeting capability, armed reconnaissance offers the MAGTF commander a capability to address mobile enemy force structure targets en-route to the battlefield. CAS is defined as; "air action 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) The MAGTF commander depends upon CAS to provide a major proportion of his firepower due to the MAGTF's structural deficiencies in artillery support.

The ACE executes OAS missions as either; preplanned or immediate air support. Preplanned missions are either scheduled or on-call. MAGTF/ACE planners will estimate the offensive air support required for different evolutions. With this estimate of anticipated support, OAS assets will be "fragged" to provide support at a specific time or be "on the ready" to provide support when the MAGTF scheme of maneuver requires it. The use of preplanned missions allows the MAGTF commander to manage his limited OAS assets more efficiently. A Preplanned Scheduled mission is scheduled to be executed at a specific time. The MAGTF commander may use a scheduled CAS mission to provide support for a planned attack, where the attack pilots have a specific Time on Target (TOT) and target. The preplanned scheduled classification is not restricted to CAS missions alone. Air interdiction missions or armed reconnaissance missions may be assigned specific TOTs or TOSs in as preplanned scheduled OAS.

Preplanned On-call missions represent the most efficient use of MAGTF OAS assets. On-call missions are pre-loaded and pre-briefed for a particular target array/location and then placed in an appropriate ground/air alert conditions. The pilots anticipate a launch based upon their alert status. As the MAGTF order of battle dictates, the alert status will be upgraded, and if required for an attack mission, the aircraft will be launched. Immediate missions can be utilized to meet unexpected OAS requirements. The immediate classification is utilized to meet fire support needs that could not be pre-planned by the ACE planners. The immediate JTAR may be filled by diverting an attack element from a pre-planned mission. While the ordnance load may not be tailored to the specific target array, the shock value of the diverted aircraft's ordnance effects may be enough to achieve the desired result. While immediate missions are utilized to cover unexpected needs, the ACE planners must assume that they will be required to cover battlefield contingencies. In this light, ordnance loads should be utilized that cover the majority of expected target types identified in the IPB process.

OAS represents a large percentage of the MAGTF's combat power. The MAGTF commander relies upon OAS to attack targets that other supporting arms cannot, due to capability or availability. The MAGTF should integrate the fires of all its assets to achieve a combined arms effect. Historically, the fires provided by attack aviation assets have provided capabilities against targets that the GCE weapons could not address. The MAGTF commander utilizes OAS as an integral part of his combined arms team. OAS constitutes a large percentage of the MAGTF's combat power.

F.1.2.3 Assault Support

Assault support provides the MAGTF commander the ability to concentrate his strength against selected enemy weaknesses using speed and surprise. It provides operational and tactical mobility as well as logistics support to the MAGTF. The MAGTF commander bases his decision about the extent and use of assault support on the following METT-TSL considerations:

- MAGTF's mission and concept of operations.
- The enemy's capability to interrupt movement of assault support assets.
- The effect of terrain and weather on assault support missions.
- Helicopter availability and lift capability.
- Time available for planning, rehearsal and briefing.

The MAGTF commander uses assault support to focus combat power at the decisive place and time to achieve local combat superiority. Using assault support, the commander can rapidly concentrate forces or re-deploy those forces as necessary. It allows him to apply and sustain combat power and strike the enemy where he is unprepared. This function comprises those actions required for the airlift of personnel, supplies and equipment into or within the battle area by helicopters or fixed wing aircraft. The general categories of assault support are:

- Combat assault operations
- Aerial delivery
- Aerial refueling
- Air evacuation
- Tactical Recovery of Aircraft and Personnel (TRAP)
- Air logistical support
- Battlefield illumination

Assault support operations may be tactical, logistic or administrative in nature. As with any operation conducted by the MAGTF, assault support requires detailed, coordinated and concurrent planning at all echelons to increase operational efficiency and the chances for success. Marine helicopters provide air mobility of personnel, supplies and equipment, combat utility support, close air support and other air support for the landing force during ship to shore movement and within the objective area during subsequent operations ashore. Tactical missions generally consist of helicopter-borne assaults to seize critical terrain, isolate enemy formations, attack an enemy's flank/rear or conduct raids or patrols. Administrative and logistical missions

include supply or re-supply of troops, movement of equipment, messenger and liaison service, and casualty and prisoner of war evacuation.

F.1.2.3.1 Marine Medium Helicopter Squadron (HMM: 12 CH-46E)

The HMM squadron, operating medium lift helicopters, is organized to conduct operations as an entire squadron. This is the mainstay of the Marine Corps' troop-lift capability. The mission of the HMM is to provide assault support of combat troops, supplies and equipment during amphibious operations and subsequent operations ashore.

F.1.2.3.1.1 Tasks

- Provide combat assault support of troops, supplies and equipment. Troop assault is the primary function, and movement of supplies and equipment is secondary.
- Conduct assault support for evacuation operations and other maritime special operations.
- Provide support for mobile forward arming and refueling points (FARPs).
- Provide airborne control and coordination for assault and assault support operations.
- Maintain a self-defense capability to counter 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 deploy and conduct extended range operations, employing auxiliary internal aircraft refueling.
- Maintain the capability to operate at night in adverse weather, and under instrument flight conditions at extended ranges.
- Augment local search and rescue (SAR) assets and provide aero-medical evacuation of casualties from the field to suitable medical facilities or other aero-medical aircraft.

F.1.2.3.1.2 Marine Heavy Helicopter Squadron (HMH: 16 CH-53E or 8 CH-53D)

The HMH squadron, operating heavy lift helicopters, is organized to conduct operations as either an entire squadron or in detachments operating under the control of another command element. The mission of the HMH is to provide assault support of equipment, supplies and combat troops during amphibious and subsequent operations ashore. This is the only heavy lift asset for the Marine Corps.

F.1.2.3.1.2.1 Tasks

- Provide combat assault support of heavy weapons, equipment, supplies, and troops. Movement of heavy weapons, equipment, and supplies is the primary function, and troop assault is secondary.
- Conduct tactical retrieval and recovery operations for downed aircraft, equipment, and personnel (TRAP).
- Conduct combat assault and assault support for evacuation operations and other maritime special operations.
- Provide support for mobile forward arming and refueling points either in the form of a Rapid Ground Refueling (RGR) platform or re-supply for an established FARP.

- Augment local SAR assets and provide aero-medical evacuation of casualties from the field to suitable medical facilities or other aero-medical aircraft.
- Provide airborne control and coordination for assault support operations.
- Maintain a self-defense capability to counter 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 deploy and conduct extended range operations, employing auxiliary internal aircraft refueling.
- Maintain the capability to operate at night, in adverse weather, and under instrument flight conditions at extended ranges.

F.1.2.3.3 Marine Light/Attack Helicopter Squadron (HMLA: 18 AH-1W/9 UH-1N)

The HMLA squadron, operating both utility and attack helicopters, is organized to conduct operations as either an entire squadron or in detachments operating under the control of another command element. The Mission of the HML/A is to provide combat assault helicopter support and attack helicopter fire support and fire support coordination for aerial and ground forces during amphibious operations and subsequent operations ashore. Support is provided in relation to specific aircraft tasks.

F.1.2.3.3.1 Tasks

F.1.2.3.3.1.1 Specific Utility Helicopter Tasks

- Provide an airborne command and control platform for command elements.
- Augment local SAR assets and provide aero-medical evacuation of casualties from the field to suitable medical facilities or other aero-medical aircraft.
- Conduct combat assault and assault support for evacuation operations and other maritime special operations.
- Maintain an offensive weapons capability for air-to-ground threats and self-defense capability for air-to-air-threats.

F.1.2.3.3.1.2 Specific Attack Helicopter Tasks (OAS)

- Conduct point target/anti-armor operations.
- Conduct anti-helicopter operations.
- Provide point and limited area air defense to counter threat aircraft.
- Conduct armed and visual reconnaissance.
- Augment local search and rescue assets.

F.1.2.3.3.1.3 Combined Attack/Utility Helicopter Squadron Responsibilities and Tasks.

- Provide armed escort, airborne control and coordination for vertical assault support operations.
- Control, coordinate, and provide terminal guidance for supporting arms to include offensive air support, artillery, mortars, and naval surface fires.
- Provide fire support and security of forward and rear area forces.
- 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, and under instrument flight conditions at extended ranges.

F.1.2.3.4 Fixed Wing

Fixed wing operations contribute to the support of the MAGTF in a manner similar to helicopters. Fixed wing aircraft are employed to deliver troops, equipment and supplies to areas beyond the range and lift capacity of the helicopter. They also provide medical evacuation, airborne command and control, illumination and in-flight refueling. Marine Aerial Refueling/Transport Squadron (VMGR: 12 KC-120). The Marine aerial refuel/transport squadron (VMGR) provides aerial refueling and assault support to the MAGTF. The squadron also provides ground refueling to MAGTF air and ground assets. The mission of the VMGR is to provide aerial refueling service in support of Fleet Marine Force air operations and provide assault air transport for personnel, equipment and supplies.

F.1.2.3.4.1 Tasks

- Provide tactical aerial refueling service to FMF squadrons.
- 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 command post.
- 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 suitable means of transportation are not readily available.
- Maintain the capability to:
    - Operate under day, night, and all-weather flying conditions.
    - Operate to/from a logistic air head, advanced base, expeditionary airfield or tactical landing zone in the objective area or battle area.
    - Operate with or without assistance of airborne; surface or ground controllers.

Assault support missions are divided into two categories: preplanned and immediate. Both types of missions are executed in response to specific requests by elements of the MAGTF. These requests are usually transmitted on the Tactical Air Request/Helicopter Request net to the

TACC/DASC, using the Assault Support Request (ASR) or Joint Tactical Airlift Request (JTAR) format. Preplanned missions provide, by far, the most economical and efficient use of assets. In order to effectively employ assault support assets, the MAGTF commander must establish priorities and study the needs of the MAGTF. Preplanned missions are requested far enough in advance to allow coordination between the requester, the support unit, and fire support/air command and control agencies. Scheduled Missions are requested in advance and permit detailed mission planning and close coordination with the appropriate MAGTF elements. Scheduled missions are executed at a specific L-Hour or TOT. This type of mission allows pre-mission planning to be conducted well prior to takeoff. On Call Missions critical elements are location and time. Assets must be positioned close enough to provide a timely response. For on-call missions, only the time for execution must be relayed. Keeping helicopters airborne, awaiting activation, is not an efficient means of reducing response time. However, staging assets (strip alert) at forward operating bases (FOB) or FARPs will meet this requirement. Good intelligence and proper planning should identify periods of vulnerability and "strip alert" assets can cover these time periods. Placing assets on strip alert for extended periods of time is counterproductive and ultimately reduces efficiency. Immediate missions are those which arise suddenly and can not be planned, in detail, in advance. They are launched in support of any requesting unit within the MAGTF. In order to efficiently support the immediate needs of MAGTF units, the commander will generally allocate some of his assets to provide an immediate response through the Direct Air Support Center/Helicopter Direction Center (DASC/HDC). The DASC/HDC may divert airborne assets from missions of lower priority or launch them from a FOB or FARP in response to an immediate request. Normally, very little detailed planning can be accomplished in advance of these missions. Therefore, the request must include the same detailed information provided in a preplanned request.

Allocation of assault support assets will be determined by a number of factors. They normally include aircraft availability, lift requirements, aircraft capabilities, threat analysis, escort and fire support requirements, time, space and logistical requirements, and unit proficiency level. When determining asset allocation, the following should also be considered:

F.1.2.3.5 GCE Responsibilities Receiving Assault Support

- To maintain tactical integrity of units, insofar as loading space allows, for commitment in the objective area.
- To properly prepare and identify equipment to be air transported.
- To determine which equipment is to be assigned to rear and follow-up echelons.
- To prepare appropriate air movement plans and forms according to the capabilities of the aircraft involved.
- To establish the priority of loads and movement considering available aircraft and the intended tactical employment once landed.
- To ensure the accomplishment of the specialized training required for embarkation, aircraft ditching, in-flight safety, and unloading.

F.1.2.3.6 ACE Responsibilities

- To provide troop units with aircraft availability and capacities according to type.
- To assign aircraft serials and schedules for takeoffs and landings in accordance with identified troop unit mobility.
- To provide adequate ground handling for securing equipment in the marshalling area.
- To provide for in-flight safety and other advisory services where aircraft are concerned.

F.1.3 EMPLOYMENT CONSIDERATIONS

Direct Support vs. General Support. Assault support assets are usually employed in general support of the MAGTF. However, consideration can be given to direct support of MAGTF elements for a particular phase of an operation or a specified period of time. There will be trade-off's to this type of support. A major planning factor will be logistical support for the aviation assets. Generally speaking, direct support will involve frequent movement and operation from austere sites. Logistical support will be a constraining factor. However, in certain scenarios, direct support may be the most responsive means of providing aviation support to elements of the MAGTF.

F.1.3.1 Helicopters Capabilities

- Vertical ascent/descent into and out of clear but unprepared landing areas for loading and unloading.
- Load or discharge troops and cargo while hovering.
- Achieve a degree of cover and concealment by use of terrain features and vegetation.
- Provide significant speed, mobility, and flexibility of movement in the battle area.
- Perform shuttle services, bypassing obstacles insurmountable to ground vehicles.
- Operate from all types of aircraft carriers as well as platforms upon or alongside amphibious ships.
- Operate under conditions of low ceilings and reduced visibility or during periods when surf conditions prohibit waterborne movement by small craft.
- Transport supplies rapidly to ground units.
- Load troops and cargo from ships underway.
- Transport personnel and cargo to areas inaccessible by other means.

F.1.3.1.1 Helicopter Limitations

- Greater logistic support required in terms of fuel, maintenance, and support personnel than with other means of support.
- Noise or rotor wash may compromise position or create difficulty in communications and vision.

- Operations are restricted under icing conditions, and heavy winds,.
- Lift capabilities are directly affected by altitude, humidity, and temperature.
- Internal loads require careful calculation for safe weight and balance.
- Helicopters are vulnerable to antiaircraft fire, surface-to-air missiles, and supporting arms and small arms fire of both enemy and friendly forces. Coordination with friendly supporting arms is of paramount importance.
- Large-scale operations require good visibility, illumination and adequate landing areas.

As with helicopters, the ground commander may not have a detailed knowledge of fixed wing characteristics. Generally, the limited number of Marine transport aircraft available will restrict operations to those conducted in conjunction with amphibious assaults, support of operations ashore or contingency plans established by appropriate commanders.

F.1.3.2 KC-130 Capabilities and Limitations

- The KC-130 can provide RGR for both helicopters and AV-8Bs at FARPs and forward road sites. A KC-130 can fly 200nm, land on a 4000' dirt or highway strip and give away 45,000 lbs of fuel.
- The DASC(A) is an airborne extension of the MACCS, in particular the ground DASC. It can serve to extend UHF-VHF communications coverage of the C-3 system, provide a limited echelon capability to the DASC and/or conduct DASC functions in a designated sector. The DASC(A) utilizes the UYQ-3A van.
- The KC-130 can work out of unimproved short fields, day or night, utilizing the PPN-119 radar beacon for terminal guidance. The PPN-119 also provides terminal guidance for night or bad weather cargo and para-ops.
- In a permissive environment, the KC-130 can be used to deliver flares for battlefield illumination.
- The KC-130 will require standoff or dedicated fighter escort in the tanker role if threat dictates.
- The KC-130 can provide up to 58,000 lbs fuel (giveaway) during aerial refueling operations.

The responsibility to assign assets to specific requirements rests with the Mission Commander and the planning cell. The Ground Combat Element (GCE) establishes the support requirements necessary to accomplish its mission and then requires the ACE to manage the available assets to provide that support. Assault Support mission planning and briefing is a dynamic process. Mission planning is conducted from both centralized and decentralized locations. The planning cells are responsible to develop coherent plans from sites that range from embarked aboard USN assets to sustained operations ashore and include all possible combinations of the two. Conductivity requirements range from an established hardwired network to dislocated standalone operating systems at unimproved sites. The diversity of environmental influences and broad scope of assets involved make Assault Support mission planning an extremely demanding task.