MCWP 3-21.2

AVIATION LOGISTICS

U.S. Marine Corps

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DEPARTMENT OF THE NAVY
Headquarters United States Marine Corps
Washington, DC 20380-0001

Date

FOREWORD

1. PURPOSE AND SCOPE

Marine Corps Warfighting Publication (MCWP) 3-21.2, *Aviation Logistics*, applies the philosophy in Marine Corps Doctrinal Publication (MCDP) 4, *Logistics*, to Marine aviation logistics. It is the link between higher order doctrine (contained in the MCDP series and MCWP 4-1, *Logistics Operations*) and the tactics, techniques, and procedures contained in other Marine aviation and logistics doctrinal publications. In establishing the doctrinal basis for the planning and execution of aviation logistics, this publication provides the philosophy for employment of Marine aviation logistics in support of the prosecution of war and other operations in support of the Marine Corps' mission as the nation's expeditionary force in readiness.

This publication is intended primarily for commanders and staff officers who are responsible for the planning and execution of aviation logistics. Nonetheless, it should be read by all Marines who are supported by or involved in the execution of aviation logistics. It is also intended for other doctrine centers, joint and multinational staffs, professional military educational activities, and any other activity requiring an understanding of Marine aviation logistics. It provides a common basis for understanding Marine aviation logistics and the manner in which the Marine air-ground task force (MAGTF) exploits those capabilities operationally and tactically. It does not, however, discuss the specifics of unit-level procedures that are covered by a myriad of Navy/Marine Corps publications. Marine aviation logistics is an integral part of the MAGTF as it extends the Aviation Combat Element's (ACE) operational reach and flexibility.

As with all Marine Corps doctrinal publications, this manual is authoritative in nature but requires judgment in application.

2. SUPERSESSION

None.

3. CHANGES

Recommendations for improving this manual are invited from commands as well as directly from individuals. Forward suggestions by using the user suggestion form format

to—
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4. CERTIFICATION

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

B. B. KNUTSON, JR.
Lieutenant General, U.S. Marine Corps
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Aviation Logistics

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Chapter 1

Marine Corps Aviation Logistics

1001. Introduction. Successful deployment, sustainment, employment, and redeployment of a Marine Air-Ground Task Force (MAGTF) Aviation Combat Element (ACE) is the result of well-coordinated Naval aviation logistics (AVLOG) support activities conducted at the strategic, operational, and tactical levels. This chapter describes; the AVLOG mission; types of AVLOG; levels of aviation maintenance; principles of the Marine Aviation Logistics Support Program (MALSP); and the functions and capabilities of the Marine Aviation Logistics Squadron (MALS). Collectively, these areas of discussion are the foundation of effective Marine Corps AVLOG. The organization of AVLOG agencies/units, materiel support philosophies, and assigned AVLOG responsibilities are structured with one goal, to logistically support ACE operations. They provide aviation logisticians with the capability to respond quickly to changing support requirements. Initially, AVLOG support is drawn from internal Marine Corps/Navy resources located within the operating forces, the Marine Corps Reserve, and the supporting establishment. Specific operational requirements dictate the extent to which additional AVLOG support is drawn from other Services, non-DOD resources, and multinational resources.

1002. Aviation Logistics Mission. Within the Marine Corps, the Deputy Commandant of the Marine Corps/Aviation [DCMC(A)] is responsible for planning and coordinating staff activities for all matters relative to organization, equipment, manpower, training, and support of Marine Corps aviation units and installations, including all AVLOG matters. Marine Corps aviation is an integral part of Naval aviation and as such, DCMC(A) is dual-hatted as Chief of Naval Operations (CNO) N88M. In this capacity, he is responsible to the CNO to ensure that Marine Corps aviation is in consonance with the overall Naval Aviation Program. At all levels, ACE commanders and aviation logisticians must plan and execute both general logistical operations and aviation-peculiar (focus of this publication) logistical operations. These AVLOG operations must sustain the ACE as it provides support to the Marine Air-Ground Task Force (MAGTF) anywhere in the world.

1003. Supporting the ACE in Maneuver Warfare. As a result of United States Code, Title 10, and joint doctrine, the Marine Corps, in coordination and cooperation with the Navy, has made logistical self-sufficiency an essential element of MAGTF expeditionary warfighting capabilities. This means that the Marine Corps' AVLOG mission, at all command and support levels, is to assist in generating air combat elements that are rapidly deployable, self-reliant, self-sustaining, and flexible. This mission leads to further corollaries:

- Rapid deployment demands that ACE organizations, equipment, and supplies be readily transportable by land, in aircraft, and on ships.

- A self-reliant ACE is task-organized to support itself logistically with accompanying supplies for specific timeframes without undue concern for resupply or developed infrastructure ashore.

- An ACE's AVLOG capabilities and accompanying supplies enable it to self sustain its operations for up to 90 days while external resupply channels are organized and established.

- An ACE's inherent self-sustainment and rapid deployability capabilities allow it to quickly reconstitute itself and permit rapid withdrawal from a completed operation and immediate reembarkation for follow-on missions.

1004. Aviation Logistics vs. Aviation Ground Support. Logistical support of the ACE is more complex than that of the other elements of the MAGTF because the majority of the logistical support for the ACE is sourced and funded by the Navy. Therefore, the ACE must employ two sets of procedures for supply and maintenance operations. Logistical support is provided by units organic to the ACE: the Marine Aviation Logistics Squadron (MALS) and the Marine Wing Support Group/Marine Wing Support Squadron (MWSG/MWSS). The MALS provides AVLOG (aviation-peculiar support), while the MWSG/MWSS provides aviation ground support [expeditionary airfield (EAF), aircraft crash/fire/rescue services, etc.] as well as ground-common combat service support (CSS). An additional CSS detachment (CSSD) from the MAGTF's Combat Service Support Element (CSSE) can provide ground logistic support beyond the capability of the ACE's organic logistical units. Detailed information about Aviation Ground Support may be found in MCWP 3-21.1 *Aviation Ground Support*.

1005. Levels of Aviation Logistics. The strategic, operational, and tactical levels of logistics function as a coordinated whole, rather than as separate entities. Although the Marine Corps generally focuses on the operational and tactical levels of logistics, it is imperative that all Marines understand the interaction of all three logistics levels. These levels interconnect like sections of a pipeline, tying together logistics support at the strategic, operational, and tactical levels. The joint staff, individual military services, and associated national agencies (Defense Logistics Agency and Office of the Secretary of Defense) address strategic logistics issues. The services coordinate their required strategic and operational logistics interfaces. Marine Combatant commanders and their logistics staffs, supporting and supported, manage both strategic and operational logistics issues that affect their assigned missions. Service components, subordinate commanders, their logistics staffs, and small-unit logisticians deal with operational and tactical logistics issues.

a. Strategic Naval Aviation Logistics. Strategic Naval AVLOG supports organizing, training, and equipping the forces that are needed to further the national interest. It links the national economic base (people, resources, and industry) to Naval aviation operations. The combination of strategic resources (the national sustainment base) and distribution processes (our military deployment components) represents our total national capabilities.

These capabilities include the Department of Defense (DOD), the Military Services, other Government agencies as necessary, and the support of the private sector. Strategic Naval AVLOG capabilities are generated based on guidance from the Chief of Naval Operations (CNO) (N88) and DCMC(A) while AVLOG requirements are identified by the operating forces. Lead times to coordinate and plan strategic Naval AVLOG vary, ranging from up to a decade or more for facilities development, to two years for fiscal and routine operational contingency planning, to mere days for positioning AVLOG assets around the globe in response to a crisis.

AVLOG support peculiar items are provided through Navy material and equipment support systems. DCMC(A) coordinates with the Office of the CNO, Commander, Naval Air Systems Command (COMNAVAIRSYSCOM), Commander Naval Sea Systems Command (COMNAVSEASYSCOM), Commander Space Warfare Systems Command (COMSPAWARSYSCOM), and other Naval Aviation support activities in;

- Planning for and acquisition of equipment, weapons, weapon systems, material, supplies, facilities, maintenance, and support services required for Marine Corps aviation.

- Coordinating with the CNO to ensure the characteristics of newly procured or developed AVLOG assets for the Marine Corps meet operational requirements.

- Ensuring proposed training will prepare Marine Corps AVLOG personnel for required support activities.

- Planning, development, and fielding of Automated Information Systems (AIS) that support Marine Corps AVLOG.

Within the Aviation Department of Headquarters, U.S. Marine Corps (HQMC), the Aviation Logistics Support Branch (ASL) coordinates with the OPNAV (Operations, Navy) (N88) staff and other agencies for planning the logistical support of Marine Corps (active and Reserve) aviation in matters of; policy, management, procurement, supply, and distribution of materiel, including acquisition, planning, programming, construction, management, maintenance, and disposition of real estate and facilities for aviation installations.

b. Operational Aviation Logistics. Operational AVLOG links tactical requirements to strategic capabilities in order to accomplish the ACE’s operational goals and objectives. It includes the support required to sustain air campaigns and major operations. Operational logistics supports conducting expeditionary aviation operations and providing theater-wide AVLOG support, generally over periods of weeks or months. Aviation logisticians assist in resolving tactical requirements and coordinate the allocation, apportionment, and distribution of resources within theater as well as those assets in CONUS. They interface closely with operators at the tactical level in order to identify theater shortfalls and communicate these shortfalls back to the supporting establishment. At the operational level, the concerns of the aviation logistician and the operator are intricately interrelated. Marine Corps operational aviation logistics orients on supporting force closure with the objective, sustainment, reconstitution, and redeployment of the ACE in theater, which includes:

- Supporting operational-level command and control for effective planning and management of operational AVLOG efforts.

- Supporting AVLOG requirements at intermediate and forward support bases.

- Developing concept of AVLOG support for Operational and Contingency plans (OPLANS/CONPLANS).

- Supporting employment of geo-prepositioned and maritime prepositioned AVLOG support assets.

- Supporting arrival and assembly of aircraft and the aviation logistics support ships (T-AVB) in theater, and their reception, staging, onward movement, and integration (RSO&I).

- Coordinating AVLOG support with joint, other-Service, and host nation agencies.

- Supporting the reconstitution and redeployment of the ACE and Maritime Prepositioning Forces (MPF) for follow-on missions.

c. Tactical Aviation Logistics. Tactical AVLOG includes organic unit capabilities necessary to support aviation operations and aviation logistics operations. The focus is to support the ACE commander’s intent and concept of operations while maximizing the commander’s flexibility and freedom of action. Tactical AVLOG involves the coordination of functions required to sustain and move aviation squadrons, personnel, equipment, and supplies. These functions must deliver flexible and responsive AVLOG to meet the needs of the forces engaged in operations. Therefore, the response time of tactical AVLOG must be flexible and capable of expeditious deployment and therefore requires anticipatory planning to provide this type of support.

The ACE is specifically designed to possess the organic CSS organizations required to accomplish assigned missions, AVLOG and aviation ground support (AGS). Although no single element of the ACE has all of the operational and logistics capabilities needed to operate independently, each element has the capability for at least some basic self-support tasks. The ACE possesses unique AVLOG support capabilities essential for aircraft operations, the Marine Aviation Logistics Squadron (MALS). Typically, the ACE deploys with accompanying supplies that enable it to conduct operations for up to 90 days (the period when resupply channels are being established and flow of supplies initiated).

d. Amphibious Ready Group (ARG) Aviation Logistics. It is important to note that the MEU ACE is normally embarked aboard an air-capable ship (e.g., LHA, LHD). In this situation, AVLOG support of embarked Marine aircraft is the responsibility of the ship's Aircraft Intermediate Maintenance Department (AIMD), Supply Department and Ordnance Department rather than the MALS. In the same manner, Marine Corps aircraft squadrons operating from a carrier would receive support from similar entities aboard the carrier. Maintenance, supply and ordnance personnel from the MALS and the aircraft squadrons generally augment the Navy personnel assigned to these sections by working in shipboard spaces to provide required support.

e. Marine Aviation Logistics Squadron (MALS). The MALS is the Marine Corps' tactical AVLOG organization and is responsible for providing intermediate-level maintenance, supply, and ordnance/armament support for aircraft and aeronautical equipment. Each MALS is organized to provide a core group of supervisory and support personnel that, when augmented by aircraft-specific maintenance personnel from aircraft squadrons, provides an intermediate maintenance capability for either fixed or rotary-wing aircraft (fig 1-7).

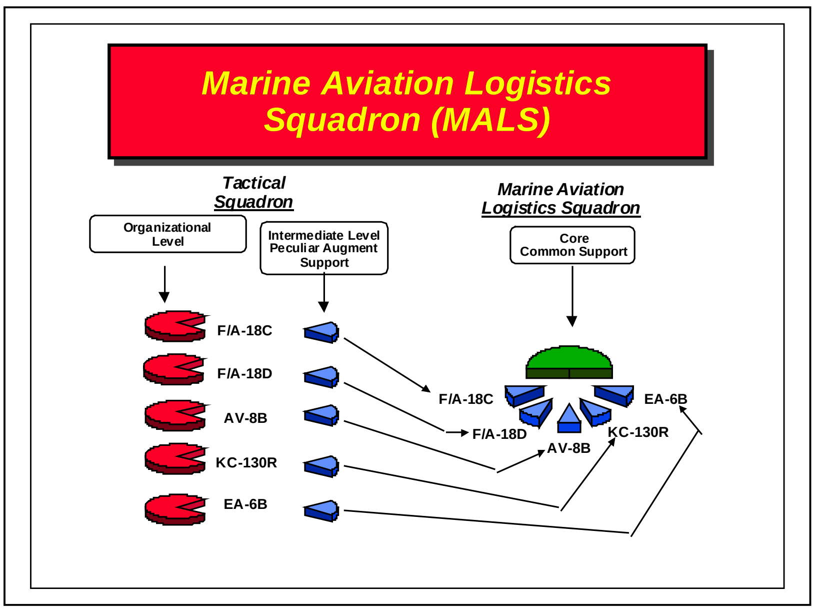


Fig. 1-1 MALS Support Organization

1. MALS Core Functions. Each MALS, active or Reserve, can perform the following core functions;

- Provide Intermediate-level (I-level) maintenance for aircraft and aeronautical equipment of all supported units, 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 logistics support to ACE squadrons. This support encompasses the requisitioning, storage, handling, assembly, transportation, and inventory management reporting of Class V(A) ammunition. Be capable of planning for and operating an ammunition issue point at expeditionary sites.

- Interpret, implement, audit, inspect, and provide oversight for the Marine Aircraft Group (MAG) Commanding Officer (CO) for all policies and procedures relating to the administration and management of operations and maintenance (O&M), Navy (less TAD) funds, aviation supply, aircraft maintenance, aircraft ordnance, avionics, cryogenics and data processing for all units within the MAG/ACE.

- Coordinate with the MWSG/MWSS, Marine Air Control Group (MACG) and other supporting Navy and Marine Corps activities in planning for the support required to execute AVLOG.

- Screen and inspect non-serviceable aeronautical equipment/material for testing and repair, shipment to another repair facility, or disposal.

- Maintain the capability to deploy and provide MALSP packages as integral units or as tailored AVLOG elements assigned to another MALS to support aircraft assigned to a "host" MAG/MALS or ACE.

- Conduct individual and unit training to qualify organic and supported squadron personnel for performance of assigned missions and tasks.

- Provide data processing support to facilitate execution of the aviation supply, maintenance, and Navy-funded financial functions of the MAG/ACE.

1006. Marine Aviation Logistics Support Program (MALSP). The MALSP, together with the aviation logistics support ships (T-AVB) and Maritime Prepositioning Ships (MPS), provides the MALS with the ability to support all aircraft types that comprise a MAGTF ACE. MALSP was implemented to provide flexible and effective operational AVLOG to the deployed ACE. It enables ACE AVLOG planners to rapidly and efficiently identify, marshal, and deploy those AVLOG elements that are necessary to support a task-organized mix of Marine aircraft.

a. Background. Prior to the development of (MALSP), there was no standard method of task organizing aviation spare parts, support equipment (SE), mobile facilities (MF) and aviation support personnel. The experience of the unit Supply and/or Maintenance Officer was the basis for decision making as to what assets to take when organizing for deployment. Because experience levels differed from unit to unit, no two units deployed with similar support packages. The potential to leave behind items vital to the unit mission was great. The time required to assemble aviation logistics support packages exceeded all other phases of task organizing an ACE. AVLOG support was provided but it was neither responsive nor as effective as it could have been.

b. Task Organizing Aviation Logistics. A key feature of the MALSP concept is the ongoing development of logistics support capable of rapid task organization and deployment. The primary means for accomplishing this enhancement is a series of standardized, predetermined logistics support packages containing all elements required to support any contingency plan that the Marine Corps may be tasked to execute. Contingency Support Packages (CSP), the primary MALSP building blocks, contain negotiated allowances of spare parts, SE, and MFs, as well as the personnel needed to sustain Marine aviation in combat.

MALSP, together with the Marine Prepositioning Force (MPF) Program (including the aviation logistics support ships, T-AVB), is to provide aviation logisticians the ability to identify and integrate people, MFs, SE, and the spare parts needed to support all aircraft types that could comprise a MAGTF ACE. MALSP is to integrate current and future support programs and concepts necessary to sustain Marine aviation in combat.

In garrison, Marine aircraft squadrons of a peculiar Type/Model/Series (T/M/S) are usually consolidated in specific Marine Aircraft Groups (MAG). In combat or other contingencies, the Marine Corps task organizes to provide a tailored force, with the appropriate capabilities for the designated mission. The requirements to task organize means that Marine aviation will likely deploy by combining (compositing) different T/M/S aircraft from several MAGs, into a single aviation element. The result is a task-organized squadron, MAG or Marine Aircraft Wing (MAW) depending upon the size of the force required. The attachment or detachment of aircraft associated with task organizing is only one aspect of the equation. The transfer and receipt of the logistics support packages between task-organized units is a more complex undertaking.

c. Compositing MALSP Support Packages. Compositing occurs when creating the MAGTF ACE. For example, aircraft squadrons of different T/M/S aircraft may be tasked to move from one MAG to another, creating a composite MAG. This composite MAG can serve as either a Rotary-Wing (RW) or Fixed-Wing (FW) element of the ACE. As the aircraft move to join a composite unit, the associated logistics support must also move. The Marine Aviation Logistics Squadron (MALS), within the MAG supplying the aircraft squadron will provide the supporting logistics assets in the form of T/M/S specific “building blocks.” The MALS that these “building blocks” are drawn from is known as the parent MALS. The MALS that will receive these “building blocks”, or CSP, is known as the host MALS. In this manner, Marine aviation logisticians are able to use a building block approach to rapidly establish a comprehensive support package capable of supporting any aircraft mix.

d. MALSP: Building Block Approach. It is important to ensure that the composition of the various MALSP packages is well understood. A typical MALS will have the following allowance packages:

- Fly-In Support Package (FISP)

- Peculiar Contingency Support Package (PCSP)
- Common Contingency Support Package (CCSP)
- Follow On Support Package (FOSP)
- Training Squadron Allowance (TSA)

Logistics planning for MALSP requires that the logistics assets available at each MALS be considered and utilized in sourcing the various MALSP support packages. As a starting point in developing MALSP, notional aircraft assignments to support MEB ACEs were developed. Logistics support requirements were then developed and organized into MALSP support packages to support the notional MEB ACE. The packages are capable of providing support for a predetermined number of a particular T/M/S aircraft. The T/M/S PCSPs are capable of being stacked upon a common "core" CSP at a host MALS much like building blocks. These building blocks can be arranged in any way that the operational commander requires.

Each of the building block allowance categories described above is designed to support a specific type and number of aircraft at a predetermined level of repair. These allowances are designed to be mutually supportive and fit together like blocks to form a

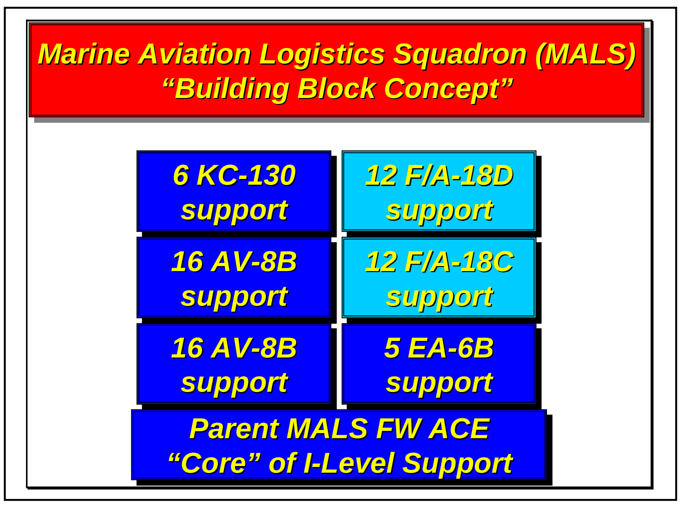


Fig. 1-2 MALSP Building Block Concept

solid aviation support foundation (fig. 1-2). For, example, aviation logistics assets can be task organized from one or more parent MALS and joined to the core of a host MALS. Together, RW and FW composite MALS will form the logistics support base for the MAGTF ACE for up to 90 days at combat flying hour rates.

(1) Fly-In Echelon (FIE). ACE fixed-wing (FW)/rotary wing (RW) aircraft are Flight Ferried (FF) directly to the theater of operations supported by Air Mobility Command (AMC) aerial tankers and cargo aircraft. The remainder of the FIE will be flown into the theater of operations via AMC/Civil Reserve Air Fleet (CRAF) aircraft and will include: squadron personnel (i.e., maintenance and support crews), a representative T/M/S Fly-in Support Package (FISP) contained in Mobile Facilities (MFs), limited O-level Individual Material Readiness List (IMRL)/SE items.

(a) Fly-In Support Packages (FISP). FISPs are organizational level (O-level) parts support packages designed to support the Fly-In Echelon (FIE) aircraft of the MAGTF ACE. FISP allowances provide the spare parts normally removed and replaced at the O-level. The allowances are computed at combat utilization rates for a 30-day endurance period and or designed to support a particular T/M/S and quantity of aircraft. These assets are additive to Aviation Consolidated Allowance List (AVCAL) and Consolidated Ship-Board Allowance List (COSAL).

Until activated in support of a contingency, a FISP is considered protected stock materiel, maintained under the cognizance of the MALS aviation supply officer, to be drawn down only to rotate stock/maintain configuration control. FISP assets are not removed to fill material requirements in support of garrison/peacetime operations. Additionally, FISPs are not used as “pack-ups” to support garrison/peacetime squadron deployments or training exercises without the approval of Headquarters, United States Marine Corps (HQMC) Aviation Logistics Support Branch (ASL).

(b) Support Equipment (SE). SE supporting the FIE includes all N coded IMRL and minimal P, L or M custody-coded IMRL items required during flight ferry (FF) or for initial aircraft debarkation, parking or servicing operations. FIE SE assets, when combined with the assets off-loaded from MPS, comprise all necessary custody-coded (O-level) SE required during the first 30 days of a contingency.

Upon a squadron’s arrival in the area of responsibility (AOR), the FISP will be combined with the O-level and limited Intermediate-level (I-level) SE transported into theater via FIE and/or MPS. This combination of assets is designed to provide readiness and sustainability for the deployed aircraft until a tailored I-level maintenance capability (MALS) arrives in theater aboard a T-AVB, by airlift, or by other means.

(2) Contingency Support Packages (CSP). CSPs consist of the common and peculiar I-level logistics support required for the composite deployment of detachments/squadrons of particular T/M/S aircraft (Fig 1-3). The four basic elements that make up CSPs are:

- Personnel
- SE [i.e., Individual Material Readiness List (IMRL) items].
- Mobile Facilities (MFs)
- AVCAL/COSAL

For each element, there are master allowance documents [i.e., Table of Organization (T/O), IMRL, Table of Basic Allowance (TBA), and AVCAL/COSAL]. Because O-level IMRL, MF allowances, and personnel allocations are already separately identified and rapidly deployable, they are incorporated into CSPs. CSP allowances are computed at the combat utilization rate for a 90-day endurance period. From the master allowance documents, MALSP allowances are divided into sub-categories and are derived as follows:

(3) Peculiar Contingency Support Package (PCSP) Allowances. PCSP allowances consist of the peculiar items required to provide I-level supply and SE support for a specific T/M/S aircraft. A peculiar item is one that is tied to a specific aircraft or SE application.

(4) Common Contingency Support Package (CCSP) Allowances. CCSP allowances consist of those Marine common supply assets and SE that the host MALS provides in support of assigned aircraft. A FW common item is one that has application to at least the F/A-18 and AV-8 aircraft. A RW common item is one that has application to at least the CH-53, CH-46E, H-1, or any asset that has common application to the MV-22B aircraft. For planning purposes it is assumed that the FW and RW MALS will be geographically separated.

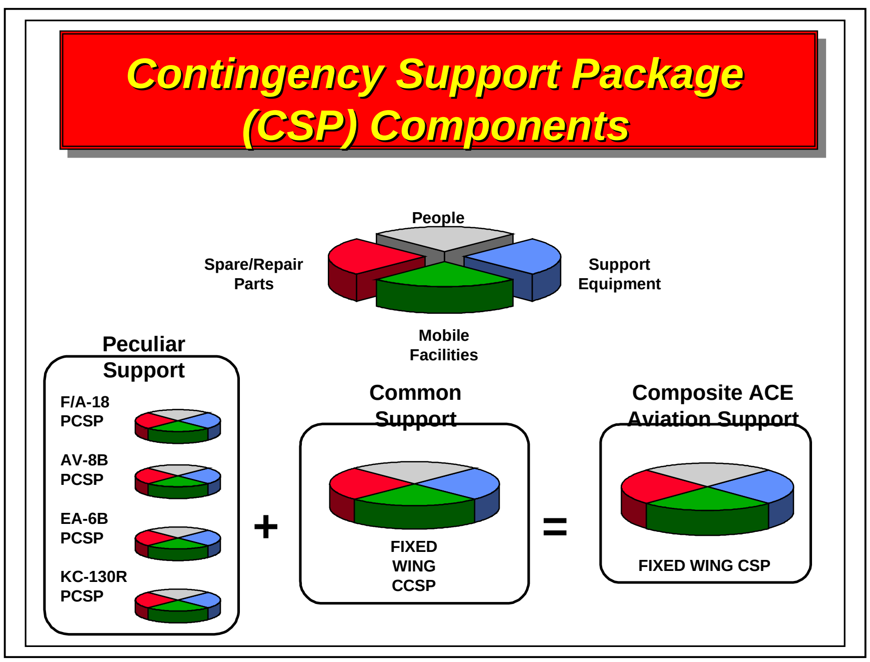


Fig. 1-3 MALSP Contingency Support Packaging

(5) Follow-On Support Package (FOSP) Allowances. FOSP equipment consists of those items that, although not required to initiate the assault, are required to sustain the force indefinately. These are items that, because of airlift and sealift constraints, must be phased into a deployment area by use of Assault Follow-On Echelon (AFOE) or follow-on shipping. Because FOSP assets are required to indefinitely sustain the force, allowances are built to a 90-day endurance level. These allowances are distinctly identified in allowance documents provided to each MALS.

(6) Remote Expeditionary Support Package (RESP). On occasion**,** Marine aircraft deploy in support of contingencies without the use of MPF assets. Due to operational timing, economic considerations and geography, these aircraft squadrons will deploy to an AOR with only a FISP and a MALS detachment with the requisite aviation logistic support elements required to sustain initial combat flight operations. In these scenarios, MALS detachments and the requisite FISPs come together to form a RESP. Deliberate aviation logistics requirement planning in support of Major Theater War (MTW) Operations Plans (OPLANS) has demonstrated that in many cases FIE aircraft will arrive in the AOR before MPF assets are available for use. In such cases, operational planning requires that these squadrons deploy with a FISP and a requisite logistic support package that will sustain initial combat flight operations until the arrival of MPF assets.

Design and allowances of CCSPs/PCSPs are based on support of an entire MEB's ACE complement of aircraft. Allowances of PCSPs, support either a full squadron of aircraft or in some cases, multiples of a full squadron of aircraft (i.e., 16 AV-8B PCSP = required peculiar support for a single AV-8B squadron vs. 36 F-18 PCSP = required peculiar support for 3 F-18 squadrons). The design of CCSPs/PSCPs supports the deployment

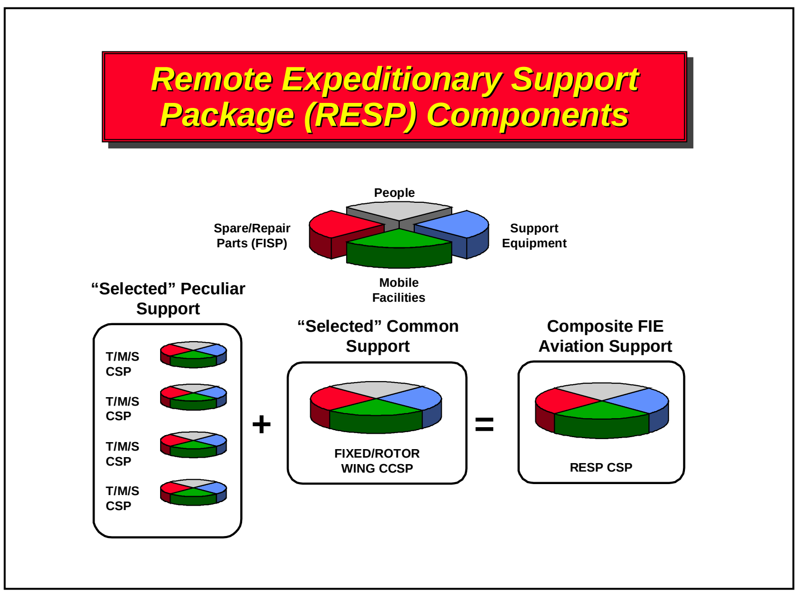


Fig. 1-4 RESP Support Packaging

and logistics support of entire squadrons/groups of squadrons used during MTW/contingencies. Although this type of allowancing makes great use of scarce economic resources, it does not lend itself well to rapid tailoring of CSPs that support less than a predetermined number of aircraft. Often, Marine aircraft must support contingencies that are at the lower end (intensity) of military operations and military operations other than war (OOTW). In most cases, these contingencies do not require multiple squadrons of an aircraft type and therefore the full support of CCSPs/PCSPs, nor do they meet the standard for full CCSP/PCSP deployment.

Developed during deliberate planning, RESPs provide aviation logistics planners "ready-made" tools to rapidly tailor support regardless of aircraft mix and operational scenario. Composition of RESPs includes the aviation logistic support elements currently resident within CCSPs/PCSPs, and requires no additional economic resources (Fig. 1-4).

RESP Defined…

RESP is a combination of a Fly-In Support Package (FISP)(O-level spare/repair parts), Airborne Weapons Support Equipment (AWSE), Aircraft Armament Equipment (AAE) minus Class V(A), Aviation Support Equipment (ASE), Mobile Facilities (MF), and personnel that would detach from a supporting MALS to provide aviation peculiar logistics support to an Aviation Combat Element (ACE) for 30 days.

A RESP is strategically airlifted to an Area of Responsibility and designed to provide aviation logistics support, to a specific number of a type aircraft, until the arrival of more robust, follow-on logistics support from Marine Aviation Logistics Support Program (MALSP) sources (PCSP, CCSP, FOSP), MPF assets, Host Nation Support, or other Joint/Combined logistics resources. When ACE missions, endurance, and bed down scenarios so dictate, the RESP may not be augmented by any additional, follow-on support and will serve as a stand-alone support package for the ACE."

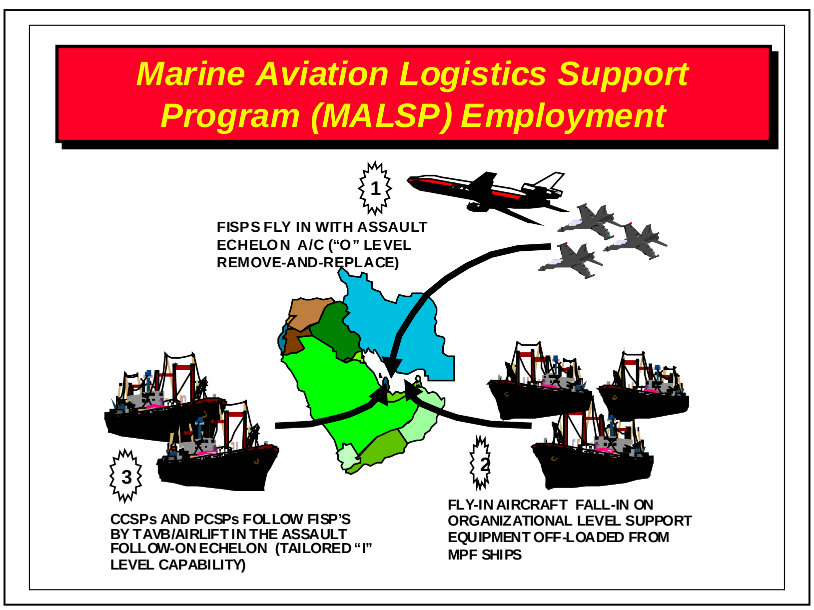
(7) Training Squadron Allowances (TSA). In addition to the packages described above, designated MALS provide support to training squadrons attached to the MAG they support. TSAs are built to support a 30-day endurance period at peacetime flying hours. TSA IMRL/AVCAL/COSAL/MFs are additive to the allowances of the MALS and are distinctly identified as such in allowance documents.

1007. Maritime Prepositioning Force (MPF) and Aviation Logistics Support Ship (T-AVB) Support. All aircraft that are part of a MAGTF ACE can be supported in combination by one, or more, of three squadrons of MPS, and one or both of the aviation logistics support (T-AVB) ships. For additional information relating to the MPS/ASE Prepositioning Concept and MPF notional aircraft mix refer to: Maritime Prepositioning Ships/Aviation Support Equipment Program Planning Document (PPD) or Marine Corps Warfighting Publication (MCWP) 3:32 MPF Operations.

a. MPF Operations ISO Expeditionary AVLOG. An MPF operation is the rapid deployment and assembly of a MAGTF into a permissive area using a combination of strategic airlift and forward-deployed Maritime Prepositioning Ships (MPS). MPF operations are strategic deployment options that are global in nature, naval in character, and suitable for employment in a variety of circumstances. MPF is a rapid response enabling force capable of being mission tailored and self-sustainable. As such, MPF operations provide an essential element in the conduct of national military strategy. MPF can directly support our national maritime strategy of protecting key naval choke points and sea lines of communication. MPF operations include the airlift of MAGTF and Navy elements (Navy Support Element, Naval Coastal Warfare, etc.) with some associated equipment into an arrival and assembly area to join with equipment and supplies carried aboard MPS.

b. T-AVB Operations ISO Expeditionary AVLOG. The primary mission of the T-AVB is to provide dedicated sealift for movement of I-level AVLOG support for use in the rapid deployment of a MEB-sized ACE. The T-AVB is designed to transport critical maintenance and supply assets to a forward operating area to establish an intermediate maintenance activity (MALS) in support of deployed Marine aircraft. Although the concept of operations for the T-AVB is primarily to support MEF-sized operations, the T-AVB could be tasked to support other amphibious operations. An amphibious operation provides for forcible entry into an objective area, rather than the unopposed entry required for MPF. In all cases, the T-AVB would still require an unopposed entry into an objective area before offloading ashore. If the embarked MALS intermediate maintenance support is phased ashore, a secondary mission can be performed to serve as a national asset dedicated to strategic sealift.

To enhance responsiveness, one ship is berthed on the East Coast and another on the West Coast of the United States. Both ships (SS Wright/T-AVB-3 and SS Curtiss/T-AVB-4) are part of the Ready Reserve Force (RRF) and are crewed by Maritime Administration (MARAD) personnel in a reduced operating status. They can be fully activated in five days. When activated, RRF ships come under the OPCON of the Military Sealift Command. Both SS Wright and SS Curtiss can be configured to allow for I-level repair capability while underway, in stream, or pierside and are heavy-lift helicopter capable. The MALS can be partially operational aboard the T-AVB during transit to the area of operations.



MALSP Employment

On notification of movement, the T-AVB is expected to arrive in the objective area within 30-35 days to marry with aircraft, personnel, and support prepositioned by fixed-wing flight ferry and the FIE units. Transfer of the IMA spare parts and equipment ashore normally begins on arrival (if conditions permit). MALS operations can be sustained in the objective area if rapid movement ashore is not possible. Under these conditions, the T-AVB prioritizes its workload in support of flight-line maintenance requirements to ensure that mission essential support is provided.

1008. Reserve Aviation Logistics. The Marine Corps Reserve is organized under the Commander, Marine Corps Forces Reserve. The mission of the Marine Corps Reserve is to provide trained units and qualified individuals to be available for active duty in time of war or national emergency and at such other times as national security may require. Marine Corps Reserve aviation support is organized and employed in the same manner as in the active forces. Reserve aviation support units are capable of independent, task-organized logistic support as an element of a MAGTF. The MAGTF commander can integrate reserve assets into the MAGTF's ACE in the same manner and with the same ease as active assets. The structure of the Marine Corps Reserve predominantly reflects the active operating forces. The Marine Corps Reserve is organized into individual augmentation detachments that are assigned to an operating force's higher headquarters and throughout the supporting establishment when activated. Actual employment of the Marine Corps Reserve's assets is situation driven. Marine Corps Reserve AVLOG can:

- Reinforce active operating forces.

- Augment active operating forces and supporting establishment activities including remain-behind equipment (RBE) and Fleet Replacement Squadron (FRS) support.

- Form MAGTFs for service with the fleet.

Marine Corps Reserve logistics capabilities and responsibilities are comparable to the logistics capabilities and responsibilities of their active counterparts. The Marine Corps Reserve can augment and reinforce any major operation in which Marine forces operate. Combatant commanders exercise COCOM over assigned Marine Corps Reserve forces when mobilized or ordered to active duty (other than for training). The Selected Marine Corps Reserve is assigned to the Commander in Chief, Joint Forces Command who exercises COCOM and training and readiness oversight authority on a continuous basis through Commander, Marine Corps Forces, Atlantic.

1009. Levels of Maintenance. OPNAVINST 4790.2G, Naval Aviation Maintenance Program (NAMP), supports CNO/CMC readiness and safety objectives, and provides for optimum use of manpower, facilities, materiel, and funds. The NAMP is founded upon the three-level maintenance concept and is the authority governing management of O-level, I-level, and D-level aviation and aeronautical equipment maintenance. It provides the management tools required for efficient and economical use of personnel and material resources in performing maintenance. It also provides the basis for establishing standard organizations, procedures, and responsibilities for the accomplishment of all maintenance on naval aircraft, associated materiel, and equipment. The division of maintenance into three levels allows management to:

- Classify maintenance functions by levels.

- Assign responsibility for maintenance functions to a specific level.

- Assign maintenance tasks consistent with the complexity, depth, scope, and range of work to be performed.

- Accomplish any particular maintenance task or support service at a level which ensures optimum economic use of resources.

- Collect, analyze, and use data to assist all levels of NAMP management.

a. Organizational Level Maintenance. O-level maintenance is performed by operating units (squadrons) on a day-to-day basis in support of its own operations. The O-level maintenance mission is to maintain assigned aircraft and aeronautical equipment in a full mission capable (FMC) status while continuing to improve the local maintenance process. While O-level maintenance may be done by I-level or D-level activities, O-level maintenance is usually accomplished by maintenance personnel assigned to aircraft squadrons. Generally, O-level maintenance can be grouped under the categories of:

- Inspections.

- Servicing.

- Handling.

- On-equipment corrective and preventive maintenance. (This includes on-equipment repair, removal, and replacement of defective components.)

- Class V(A) ordnance loading/unloading and arming/dearming.

- Incorporation of Technical Directives (TD).

- Record keeping and reports preparation.

- Age Exploration (AE) of aircraft and equipment under Reliability Centered Maintenance (RCM).

b. Intermediate Level Maintenance. I-level maintenance is the responsibility of, and performed by, designated maintenance activities, in most cases the MALS. The I-level maintenance mission is to enhance and sustain the combat readiness and mission capability of supported activities by providing quality and timely material support at the nearest location with the lowest practical resource expenditure. I-level maintenance consists of on and off equipment materiel support and may be grouped as follows:

- Performance of maintenance on aeronautical components and related SE.
- Calibration of designated equipment.
- Processing aircraft components from stricken aircraft.
- Providing technical assistance to supported units.
- Incorporation of TDs.
- Manufacture of selected aeronautical components, liquids, and gases (cryogenics).
- Performance of on-aircraft maintenance when required.
- AE of aircraft and equipment under RCM.
- Weapons preparation

c. Depot Level Maintenance. D-level maintenance is performed at naval aviation industrial establishments to ensure continued flying integrity of airframes and flight systems during subsequent operational service periods. D-level maintenance is also performed on material requiring major overhaul or rebuilding of parts, assemblies, subassemblies, and end items. It includes manufacturing parts, modifying, testing, inspecting, sampling, and reclamation. D-level maintenance supports O-level and I-level maintenance by providing engineering assistance and performing maintenance beyond their capabilities. D-level maintenance functions are grouped as follows:

- Standard D-level maintenance of aircraft.
- Rework and repair of engines, components, and SE.
- Calibration by Navy calibration laboratories.
- Incorporation of TDs.
- Modification of aircraft, engines, and SE.
- Manufacture or modification of parts or kits.
- Technical and engineering assistance by field teams.
- Aircraft Armament AE of aircraft and equipment under RCM

Chapter 2

Aviation Logistics Organization and Responsibilities.

2001. Introduction. The structural organization of Marine Corps Aviation consists of Headquarters, Marine Corps; Force Component Commanders; operating forces; the Marine Corps Reserve; and the supporting establishment. Each category has inherent logistics capabilities and specific logistics responsibilities at the strategic, operational, and tactical levels of war. Responsibilities and capabilities overlap because no organization or level of support can function effectively without extensive, continuous coordination between supported and supporting organizations.

2002. Aviation Logistics (AVLOG) Supporting Establishment. Numerous Department of the Navy commands/agencies support Naval Aviation, i.e. both the Navy and the Marine Corps (see figure 2-1). In the area of logistics, the most visible function is naval aviation materiel support. Materiel support is provided by Naval Systems Commands. Naval Systems Commands support responsibilities include the development, logistics support planning, acquisition, testing and evaluation, contracting, construction, installation, conversion, alteration, configuration management, overhaul, and depot-level maintenance and repair of;

- Aircraft.
- Weapons and weapons systems.
- Missiles and other expendable ordnance.
- Command Control and Communications
- Training equipment and devices.
- Land vehicle systems and equipment.
- Shore facilities, utilities, and related equipment.
- Materiels, supplies, and supporting services for both the Navy and the Marine Corps.

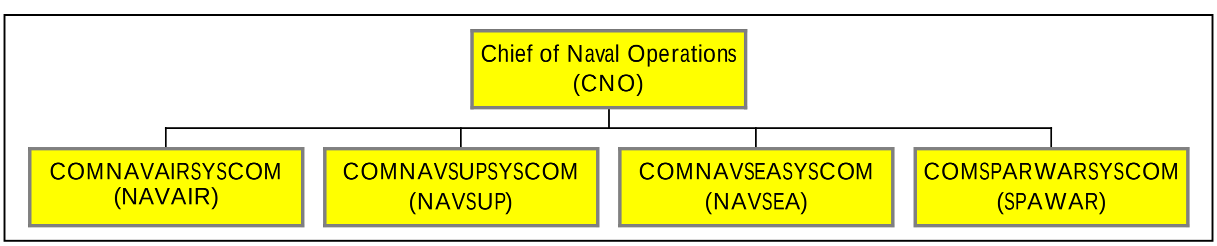


Figure 2-1 Aviation Logistics Supporting Establishment

2003. Commander, Naval Air Systems Command (COMNAVAIRSYSCOM). COMNAVAIRSYSCOM is responsible for research, design, development, test, acquisition, and logistic support of all aviation procurements relating to Navy and Marine Corps aircraft, missile targets, associated materiel, and equipment. As the technical manager for aviation maintenance, COMNAVAIRSYSCOM shall:

- Provide guidance on procedures, technical direction, and management review at each level of maintenance.
- Provide aviation maintenance procedural documents in sufficient scope and depth to clearly define the maintenance functions, organizations, and responsibilities to perform these functions.
- Implement and maintain a complementing Metrology and Calibration (METCAL) Program as a part of the NAMP.
- Assist CNO and others in developing training programs for officer and enlisted personnel assigned to aviation maintenance.
- Provide aviation maintenance material allowance lists, together with lists of facilities, which are authorized, available, and required for fleet and shore activities.
- Make recommendations concerning design of the Maintenance Data System (MDS) to reduce redundant, time consuming, and unnecessary reporting; and ensure MDS is compatible throughout all levels of maintenance.
- Serve as Functional Manager for Naval Aviation Logistics Information Systems per NAVAIRINST 5230.11.
- Provide NAMP instruction support for N881C.
- Provide fleet aviation performance improvement support.
- Provide on-site COMNAVAIRSYSCOM field service representative support to activities requesting assistance.
- Develop and maintain management information systems, which directly support the fleet.
- Plan, design, develop, implement, and support all information decision support systems, which support the total life cycle of aeronautical equipment.
- Provide technical support related to naval aviation resource analysis, maintenance engineering, logistics engineering, and logistics support program implementation.

- Provide support of all aviation maintenance trainers and weapons system training programs and managing D-level aircraft training courses.

2004. Commander, Naval Supply Systems Command (COMNAVSUPSYSCOM). The COMNAVSUPSYSCOM provides materiel in support of the operation and maintenance of aeronautical equipment/ordnance. In this regard, every effort is made to have materiel located when and where it is needed. The intent is to make the relationships between the supplier and the user as simple as possible, within the boundaries of logistic directives published by higher authority. Aviation materiel consists of spare parts for aircraft, engines, avionics, electrical, accessory, and safety equipment; SE, common and peculiar; and weapons/ammunition. Numerous Naval Inventory Control Points (NAVICP) and the Naval Ammunition Logistics Center (NALC) provide for the following functions:

a. Naval Inventory Control Point (NAVICP)

- Compute aviation materiel requirements in both range and depth for both the Aviation Consolidated Allowance (AVCAL) and Coordinated Shipboard Allowance List (COSAL). This responsibility includes conducting and coordinating provisioning conferences and identification and transfer of items to be managed by other cognizant Inventory Control Points (ICP).

- Budget for and fund all assigned aviation materiel requirements.

- Procure materiel directly from industry or other government agencies.

- Allocate COMNAVAIRSYSCOM procured material to stock points, distribute materiel to fill replenishment stock requirements, and referral of requisitions to stock points to meet requirements.

- Dispose of materiel in excess of system requirements, including SE, when authorized by COMNAVAIRSYSCOM.

- Maintain aeronautical spares and spare parts catalogs. The catalog function includes obtaining National Stock Numbers (NSN) from the Defense Logistics Service Center.

- Determine system asset rework requirements of repairable components to be processed by naval, inter-service, or commercial rework facilities.

- Provide primary materiel support for air-launched weapons.

b. Naval Ammunition Logistics Center (NALC)

- Act as the Navy’s centralized inventory manager for all Naval ammunition; act as a centralized clearinghouse for fleet ordnance support management and warfare assessment; be responsible for the policies, procedures and business systems for Arms, Ammunition and Explosives (AAE).

- Provide support to fleet ordnance positioning, conduct storage analysis and ensure worldwide visibility of the Fleet plan.

- Provide direction and procedures for ammunition allowance establishment and processing. Receive, review and approve all allowance requests. Process and load all allowance data into Conventional Ammunition Integrated Management System (CAIMS).

- Serves as the Naval aviation ordnance community's point of contact for moving conventional ordnance to locations outside the continental United States (OCONUS).

- Provide life cycle program support for all naval ammunition, weapons, combat systems and SE.

- Act as the naval ordnance automated information system (AIS) program manager and provide functional management of CAIMS and Retail Ordnance Logistics Management Systems (ROLMS).

2005. Commander, Naval Sea Systems Command (COMNAVSEASYSCOM). As a component of COMNAVSEASYSCOM, Naval Ordnance Safety and Security Activity's (NOSSA) primary mission is to establish standard policy and procedures for and provide global oversight of: Department of Navy explosives safety, ordnance physical security and ordnance environmental matters, insensitive munitions, and the NAVSEA ordnance quality evaluation program. Additional management responsibilities include supervision over special offices, reserve units, and other field activities that perform explosives safety inspections. The Explosives Safety Support Offices (ESSOLANT and ESSOPAC) continue to report as detachments to NOSSA. Core functions include:

- Explosives Safety
- Insensitive Munitions
- Ordnance Environmental Support
- Quality Evaluation
- Security

2006. Commander, Space and Naval Warfare Systems Command (COMSPARWARSYSCOM). As a component of COMSPAWARSYSCOM Naval Tactical Command Support Systems (NTCSS) primary function is to provide the full range of responsive mission support Automated Data Processing (ADP) hardware and software to facilitate management of information, personnel, material and funds required to maintain aircraft. Specifically, NTCSS supports intermediate and organizational level:

- Aviation maintenance management
- Materiel and financial management
- Related administrative management

NTCSS incorporates the functionality provided by the former systems of Maintenance Resource Management System (MRMS), Naval Aviation Logistics Command Management Information System [NALCOMIS Organizational Maintenance Activity (OMA) and NALCOMIS Intermediate Maintenance Activity (IMA)] and Shipboard Non-tactical ADP Program (SNAP) through the functional enhancement and integration of existing legacy systems. Depending on the nature of the user site, all or some of these functions are available to afloat units, Marine Corps Air Stations, and MALS. NTCSS provides tactical commanders the required mission support information for tactical decisions, improved equipment supportability and maintainability, and results in a commensurate enhancement in the material condition and combat readiness of surface, subsurface, and aviation units. The key Automated Information Systems (AIS) utilized by aviation logisticians are: Naval Aviation Logistics Command Management Information System (NALCOMIS OMA and NALCOMIS IMA), Shipboard Non-tactical ADP Program (SNAP), and Shipboard Uniform Automated Data Processing System-Real Time (SUADPS-RT) and are discussed in detail in Chapter 3.

2007. Type Commanders (TYCOM). TYCOMs are responsible for the maintenance and material condition of aeronautical equipment assigned to their cognizance for the operation and support of the Naval Aviation mission. Each TYCOM coordinates aeronautical equipment assignment, logistic support, and maintenance performed on aeronautical equipment under its custody. Naval operating forces are assigned to type commanders for the purposes of training, employment, and logistic support.

Commander, Marine Corps Forces, Pacific (COMMARFORPAC) and Commander, Marine Corps Forces, Atlantic (COMMARFORLANT) are designated Commanding General, FMF, Pacific, and Commanding General, FMF, Atlantic, respectively. In this role they are the type commanders for the Marine Corps, except for Marine aviation. The Commander, Naval Air Force, Atlantic (COMNAVAIRLANT); the Commander, Naval Air Force, Pacific (COMNAVAIRPAC); and the Commander, Naval Air Force, Reserve (COMNAVAIRRESFOR) are the type commanders for Marine Corps aircraft and aviation support equipment. They are responsible for logistic support of both Navy and Marine Corps aircraft and engines.

COMMARFORLANT/PAC Aviation Logistics Department (ALD) provides support to COMNAVAIRLANT and COMNAVAIRPAC respectively, for logistic matters related to aviation materiel readiness and internal materiel management of common aviation support. Factors impacting materiel readiness include aircraft configuration management, budgeting procedures, personnel training, aircraft materiel condition, individual materiel readiness list management, and other special programs.

2008. Naval Aviation Depots (NAVAVNDEPOT) and Cognizant Field Activities (CFA). Industrial functions consist of three general categories; (1) those involved in the rework of existing aviation end items, systems, components, and support equipment. This includes maintenance and modification functions, (2) those involved in the manufacture of items and component parts otherwise not available, (3) those involved in support services functions which include professional engineering, technology, and calibration services.

a. Rework Activities. Rework is comprised of maintenance and modification functions. Maintenance functions are those functions required to maintain or restore the inherent designed service levels of performance, reliability, and materiel condition; they span complete rebuild through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of system consumables. They also include inspection, calibration, and testing.

b. Aeronautical Modification. Modification functions are those functions required to change or improve design levels of performance, reliability, and material condition. The term modification, as used in this publication, includes alteration, conversion, engineering change, modernization, etc. For the purpose of effectively performing industrial rework and manufacturing functions, aviation systems, subsystems, components, and equipment must be allocated and distributed to the various production shops according to particular industrial function capabilities.

c. Support Services. The D-level supports the O-level and I-level by providing technical help and carrying out those functions which are beyond the responsibility or capability of the O-level and I-level activities through the use of more extensive facilities, skills, and materials. D-level functions are carried out in depots, or in the field, by personnel from depots. The NAVAVNDEPOT shall:

- Maintain and operate facilities and perform a complete range of D-level rework operations on designated weapon systems, accessories, and equipment.

- Manufacture parts and assemblies as required.

- Provide engineering services in the development of changes in hardware design.

- Furnish technical and other professional services on aircraft maintenance and logistics problems.

- Perform other levels of aircraft maintenance for eligible activities, upon specific request or assignment.

- Perform other functions as directed by COMNAVAIRSYSCOM.

2009. Headquarters, U.S. Marine Corps/Aviation Logistics Support Branch (ASL). DCMC (A) and Branch Head, Aviation Logistics Support Branch (ASL) is responsible for developing and implementing matters of AVLOG policy and management. AVLOG materiel, equipment and systems are provided for through Navy materiel and equipment support systems. HQMC (ASL) coordinates with each Department of Aviation Branch (Aviation Plans/ Programs/Budgets, Aviation Weapons Systems Requirements, etc.), the Office of the CNO(OPNAV), COMNAVAIRSYSCOM, COMNAVSEASYSCOM, COMSPAWARSYSCOM, and other Naval aviation support activities in the planning for and acquisition of equipment, weapons, weapon systems, materiel, supplies, facilities, maintenance, and support services for Marine Corps aviation.

HQMC(ASL) also coordinates with CNO(OPNAV) to ensure the characteristics of newly procured or developed equipment and materiel for the Marine Corps meet operational requirements, proposed training will prepare Marine Corps personnel for combat, and in the planning, development, and fielding of AISs in support of Marine Corps aviation. HQMC (ASL) coordinates AVLOG actions with other agencies as part of it's responsibility for Marine Corps aviation. Specific functions within the purview of HQMC (ASL) include:

- Assisting CNO (OPNAV) staff and the Naval AVLOG supporting establishment in the distribution of aeronautical and related materiel to ensure adequate outfitting of Marine Corps aviation units.

- Developing logistics plans and programs for aviation units and representing Marine Corps aviation in the development of naval aviation maintenance and supply policies and procedures.

- Representing Marine Corps aviation in the development and execution of maintenance plans, test equipment master plans, and integrated logistics support plans for aeronautical weapons systems and related equipment subsystems and aviation ordnance.

- Representing the Marine Corps in developing naval aviation maintenance and aviation supply policies and procedures.

- Providing comments, directions, and recommendations on AVLOG support for aviation weapon systems and associated equipment that are under development or in procurement.

- Coordinating AVLOG and AGS requirements relative to deployment, employment and maritime and/or land prepositioning.

- Developing and monitoring plans and programs on aviation ordnance.

- Coordinating logistics support needs for airborne armament and armament handling equipment.

- Supervising and monitoring the Aviation Explosive Safety Program and conventional ammunition.

- Functioning as the occupational field specialists in aviation maintenance, avionics, ordnance, and supply military occupational specialties (MOS).

- Monitoring and analyzing aircraft readiness data and making recommendations on appropriate actions.

- Assisting CNO (OPNAV) and other supporting agencies in the planning, programming, development, and fielding of automated data processing equipment and software to support Marine AVLOG.

- Providing program direction for the MALSP within approved aviation plan requirements.

- Coordinating with Chief of Naval Operations, Naval Air Systems Command and subordinate Department of the Navy activities in matters pertaining to MALSP policy and requirements within a command and between supported and supporting commands.

2010. Marine Corps Forces Component, Aviation Logistics Department (COMMARFOR/ALD). All joint forces with Marine Corps forces assigned will include a Marine Corps component headquarters (e.g., Marine Corps Forces, Atlantic; Marine Corps Forces, Pacific; Marine Corps Forces, Reserve). As a primary staff branch of each MARFOR, the Aviation Logistics Department (ALD) is responsible for strategic and operational aspects of AVLOG for forces assigned under their cognizance. Specific functions within the purview of each MARFOR (ALD) include:

a. Aircraft Maintenance

- Provide counsel to Assistant Chief of Staff ALD and other staff sections as required on all aviation maintenance related matters.
- Develop and coordinate with NAMP Policy Steering Committee regarding MARFOR maintenance/materiel policy and procedures.
- Participate with external aviation support activities in all decision-making processes that relate to MARFOR deployability and sustainability.
- Ensure the appropriate application and allocation of aviation logistics support for unit deployments, exercises and contingency operations.
- Collect and analyze maintenance, management, and materiel readiness (3M) data to determine logistics support shortfalls and provide corrective action recommendations.

- Provide technical assistance to subordinate units and any internal staff section on logistics matters pertaining to the status of aircraft maintenance and/or the degradation of aviation capabilities.
- Monitor engine, airframe, and associated SE maintenance and modifications.
- Coordinate the development of AVLOG inputs to operational plan Time Phased Force Deployment Data (TPFDD).
- Coordinate the submission of external requirements for AVLOG support [Component-service support agreements, Planner and Estimator (P&E) services for discrepant aircraft, aircraft battle damage, etc].
- Administer aviation SE mobilization and geo-prepositioning programs.
- Serve as member of logistics readiness and support programs related to AVLOG, i.e. Integrated Logistics Support Management Teams, MALSP, and readiness reviews.
- Participate with outside support activities as necessary to develop AVLOG support requirements under the Amphibious Ready Group Aviation Readiness Plan and Unit Deployment Program.
- Coordinate with appropriate activities, enhancements and standardization of aviation logistics AIS.
- Provide advice on matters related to personnel in occupational fields 60/61XX.

b. Aviation Supply

- Provide counsel to Assistant Chief of Staff ALD and other staff sections as required on all aviation supply related matters.
- Advise and assist subordinate commands on aviation supply concerns.
- Maintain liaison with higher and adjacent commands concerning aviation supply readiness and support issues.
- Participate with all activities involved to improve aviation supply support policies and processes to ensure maximum aircraft/aeronautical system readiness.
- Point of contact for aviation supply related affordability issues.
- Participate with all activities involved to identify and resolve significant aviation supply issues negatively impacting Force readiness.
- Review, analyze, and evaluate managerial and performance data in relation to the aviation supply effectiveness and readiness posture of the Force.

- Oversee aviation supply policies, plans, and procedures to ensure Force deployability and sustainability.

- Monitor the execution of aviation supply functions relating to MALSP and to the T-AVB.

- Provide Force representation at significant conferences and meetings dealing with aviation supply matters including those involved with the introduction of “new” weapons systems.

- Actively participate in allowance issues including modeling, funding, and filling of allowances.

- Participate with outside support activities as necessary to develop AVLOG support requirements under the Amphibious Ready Group Aviation Readiness Plan and Unit Deployment Program.

- Coordinate, with appropriate activities, enhancements and standardization of AVLOG AISs.

- Maintain involvement in all Flight-Hour Program funding issues.

- Provide advice on matters related to personnel in occupational field 66XX.

c. Avionics

- Provide counsel to Assistant Chief of Staff ALD and other staff sections as required on all avionics related matters.

- Monitor Force aircraft readiness statistics and assist in resolving issues related to support of all avionics weapon systems and avionics support equipment.

- Serve as the program manager for the Force Mobile Facility (MF) Program.

- Validate requirements and direct redistribution of special mission (MEU SOC) equipment, electronic warfare equipment (TACAIR EW) and defensive electronic countermeasure (DECM) equipment.

- Validate requirements and participate in modernization efforts of L-Class (LHA/LHD/LPD) ships related to AIMD avionics support and integration of Marine Corps MFs.

- Perform functions related to the movement of MALS components required aboard the Aviation Logistics Support Ship (T-AVB).

- Furnish technical assistance to subordinate units and internal staff sections, as required, on matters relating to avionics.

- Provide representation at conferences, meetings and reviews dealing with avionics programs and associated equipment (Avionics Operational Advisory Group, ILSMT, Program Reviews, etc.).

- Validate requirements and coordinate support of the metrology calibration program (CAL), precision measuring program (PME), and automatic test equipment (ATE).

- Provide advice on matters relate to personnel in occupational fields 63XX/64XX.

d. Ordnance

- Provide counsel to Assistant Chief of Staff ALD and other staff sections as required on all aviation ordnance related matters.

- Function as TYCOM sub-claimant for Class V(A) ammunition logistics.

- Function as component adviser to JFCOM (J-4) for USMC Class V(A) logistic issues.

- Administer Class V(A) ammunition prepositioning programs.

- Conduct Class V(A) ammunition deliberate/contingency planning in support of OPLANs.

- Administer Non-combat Expenditure Allocation (NCEA) and training programs.

- Provide oversight of Explosives Safety Programs.

- Monitor Air Contingency MAGTF (ACM) Class V(A) ammunition package.

- Coordinate with Navy Fleet CINCs on ways to resolve Class V(A) ammunition shortfalls.

- Coordinate ordnance storage/load plans for air stations ammunition allowances for training and prepositioned war reserve (PWR).

- Provide status of in-theater Class V(A) ammunition to appropriate internal staff during combat/contingency operations (expenditures, assets on hand by location, status of inbound assets).

- Coordinate ordnance peculiar weapons requirements (expeditionary storage magazines, combat aircraft loading areas) and ordnance peculiar construction requirements (expeditionary ammunition storage berms).

- Register Class V(A) ammunition allowances via Conventional Integrated Management System (CAIMS) to monitor, review and provide guidance to subordinate commands for inventory management, accountability, and reporting of Class V(A) materiel.

- Monitor matters concerning the Retail Ordnance Management System (ROLMS) and Ammunition Inventory Tracking System (AITS).

- Provide technical advice and coordinate matters pertaining to Class V(A) munitions, armament weapons support equipment, and aircraft release/launch systems.

- Conduct liaison on matters affecting deployed forces afloat (training, predeployment preparations/milestones, USMC/USN integration operability issues).

- Monitor, review, and provide guidance to subordinate commands for Arms, Ammunition, and Explosives (AAE) security.

- Validate and approve Class V(A) priority 03 munitions requisitions (CADS/PADS/AEPS) provided by major subordinate commands.

- Represent COMMARFORLANT as a member of executive working group committees charged with review of publications concerning Aviation Ordnance Standing Operating Procedures (SOP) and Explosive Safety Manuals.

- Manage Fleet Weapons Support Team (FWST) personnel support of conventional and air-launched weapons requirements.

- Provide advice on matters pertaining to Occupational Field 65XX personnel.

2011. Operating Forces. The operating forces constitute the forward presence, crisis response, and fighting power available to joint force commanders. Marine Corps operating forces are primarily composed of Marine Corps Forces Atlantic (II MEF) under the Commander, Marine Corps Forces, Atlantic, and Marine Corps Forces, Pacific (I and III MEF) under the Commander, Marine Corps Forces, Pacific. Each commander of Marine Corps forces may be assigned or designated as the Marine Corps component to the unified command to which his forces are assigned. The commander of Marine Corps forces is responsible for the coordination and management of strategic and operational logistics support issues.

The G-4 (Logistics) determines logistics and CSS requirements, to include the AVLOG support provided by the MALS. The logistics officer advises the commander on the readiness status of AVLOG support packages, identifies requirements, and recommends priorities and allocations for AVLOG support in all functional areas. On the G-4 staff, there are billets for AVLOG specialists who serve as the AVLOG liaison to the G-4. These billet holders work closely with assigned forces, specifically the assigned Wing (ALD) sections with regards to all AVLOG matters to provide:

- Advise on the readiness status of AVLOG (CSP) support packages.
- Developing policies and identifying requirements, priorities, and allocations for AVLOG support.
- Integrating AVLOG operations with logistics support from external commands or agencies.
- Supervising the execution of the commander's orders regarding AVLOG.
- Ensuring that the concept of AVLOG support clearly articulates the commander's vision of AVLOG.
- Ensuring that the concept of AVLOG supports the tactical concept of operations and the scheme of maneuver.
- Conduct deliberate and crisis action planning integrating AVLOG into overall Combat Service Support (CSS) concept of support.
- Conduct Receipt, Staging, Onward Movement and Integration (RSO&I) planning for the AVLOG concept of support.
- Develop AVLOG concept of support for OPLANS/CONPLANS.
- Identifying and resolving support deficiencies.
- Collating the support requirements of subordinate organizations.
- Identifying the support requirements that can be satisfied with organic resources and passing non-supportable requirements to the appropriate higher/external command.
- Coordinating with the amphibious task force (ATF) N-4 for the AVLOG provided under ACE G-4/S-4 cognizance.

2012. Marine Aircraft Wing, Aviation Logistics Department (ALD). The mission of the MAW (ALD) Department is to assist subordinate Marine Aircraft Groups (MAG) in matters related to aviation materiel readiness and internal materiel management of weapons systems. The ALD's goals are to maintain high aircraft and system readiness, minimize costs associated with maintaining aircraft, and to improve AVLOG efficiency. This is accomplished through close coordination with higher HQ, supporting Naval and commercial organizations and subordinate commands. Organization consists of five core functional sections, which include; aircraft maintenance, aviation supply, aviation ordnance, avionics, and plans. These functional sections work in conjunction with other MAW branches, higher HQ, subordinate units and outside agencies in support of the overall AVLOG mission. The following specific areas of responsibility are as follows:

a. Aircraft Maintenance. Primary Aircraft Maintenance Branch responsibilities include materiel readiness, aircraft configuration management and material condition, and training and related programs in support of squadrons assigned within subordinates MAGs. The Aircraft Maintenance Officer (AMO) and his staff are the principle points of contact for coordination of aircraft material readiness between the Aircraft Type Commander (TYCOM), CG MAW and the assigned MAGs. The Aircraft Maintenance Branch also performs the following functions:

- Implement and coordinate aircraft maintenance policy within the MAW.
- Conduct liaison with external agencies in support of aircraft readiness within supported MALS.
- Coordinate aircraft maintenance support for ship and unit deployments.
- Perform aircraft data analysis and aviation program management.
- Aircraft, engine and SE accounting.
- Development and dissemination of Aircraft Material Readiness Reports (AMRR).
- Cognizance and policy control of the Central Technical Publication Library (CTPL).
- Coordinate scheduling of depot level repair for aircraft, systems, engines and SE.
- Cognizance and policy control of the Individual Material Readiness List (IMRL) program.
- Coordinate the assignment of personnel in the 60/61XX occupational fields.
- Provide policy development input to higher HQ for changes/updates to NALCOMIS, and SERMIS.
- Provide policy development input to higher HQ for changes/updates to MALSP doctrine to include the utilization of the aviation logistics support ship (T-AVB).

b. Aviation Supply. Primary Aviation Supply Branch responsibilities including coordinating aviation material (inventory management, distribution, storage, and transportation) and financial matters, training and related programs in support of squadrons assigned within subordinate MAGs. The Aviation Supply Officer (ASO) and his staff are the principle points of contact for coordination of aviation supply matters between the Aircraft TYCOM, CG MAW and the assigned MAGs. The Aviation Supply Branch also performs the following functions:

- Implement and coordinate aviation supply policy within the MAW.
- Coordinate with MAW Comptroller all matters concerning Operations and Maintenance, Navy (OM&N) expenditures.
- Conduct liaison with external agencies in support of aircraft readiness within supported MALS.
- Coordinate aviation materiel support for ship and unit deployments.
- Coordinate the assignment of personnel in the 66XX occupational fields.
- Analyze aviation supply and financial management performance.
- Monitor weapons system materiel support transitioning from commercial supply to Navy supply.
- Provide policy development input to higher HQ for changes/updates to Shipboard Non-tactical Automated Data Processing System (SUADPS) and Naval Tactical Command Support System (NTCSS).

c. Avionics. The primary responsibilities of the Avionics Branch include managing all avionics policy matters and readiness issues within the Wing. The Avionics Branch also performs the following functions:

- Manage all MF and supporting equipment and coordinate the procurement and distribution of MF assets between higher and lower echelons.
- Maintain a serialized inventory of selected Electronic Countermeasures (ECM) equipment and coordinate it’s assignment to units within the Wing.
- Coordinate the assignment of personnel in the 63/64XX occupational fields.
- Coordinate Engineering Technical Services (ETS) with supported MAGs, local Naval Aviation Engineering Services Unit (NAESU) and TYCOMs in support of operational units.

- Coordinate with senior and subordinate headquarters to ensure supported operational units have custody of required aircraft mission essential equipment.

- Coordinate between senior and subordinate headquarters to ensure prompt verification of Rapid Action Minor Engineering Changes (RAMEC).

- Coordinate and provide oversight to calibration services performed by subordinate units.

d. Aviation Ordnance. The primary responsibility of the Ordnance Branch is managing Class V(A) munitions but also serve as the principle point of contact for the coordination of aviation ordnance matters and policy between the supported MAGs and the functional TYCOM. Ordnance Branch also performs the following functions:

- Monitor the Non-Combat Expenditure Allocation (NCEA) provided to sustain the supported MAGs.

- Manage Aircraft Armament Equipment (AAE) prime pool under the cognizance of the functional TYCOM.

- Coordinate the assignment of personnel in the 65XX occupational fields.

- Monitor the Aviation Ordnance Certification/Qualification program as administered by subordinate commands.

- Monitor the Explosives Safety Program as administered by subordinate commands.

e. Aviation Logistics Plans. The ALD-Plans section’s primary responsibility is for the development, coordination and assessment of the AVLOG elements TPFDD required for deliberate and crisis-action war plans. As such, the Aviation Logistics Plans officer and staff are the point of contact between the MALS and the MEF and provide the key information regarding CSP data, lift requirements and AVLOG phasing into theatre. Other key areas of responsibility are as follows:

- Coordinate MAW policy development input to higher HQ for geo-prepositioning programs.

- Coordinate MAW policy development input to higher HQ for changes/updates to MAGTF-LOGAIS family of systems.

- Coordinate MAW policy development input to higher HQ for changes/updates to MALSP doctrine to include the utilization of the aviation logistics support ship (T-AVB).

- Review the concept of operations with the Wing G-3/Plans and determine the MALS concept of support based on guidance received from the MEF regarding current and future OPLANS/CONPLANS.

- Develop Force Deployment Planning and Execution (FDP&E) options in conjunction with deliberate planning.

- Provide the input for the MEF/Marine Component Commanders Aviation Logistic Annex.

2013. Marine Aviation Logistics Squadron (MALS). The MALS provides aviation logistics support (e.g., aviation-peculiar maintenance and supply) for the subordinate units of either a FW or RW MAG. The MALS conducts intermediate maintenance on aircraft and aeronautical equipment, provides aircraft supply support, assembles and distributes Class V(A) , manufactures cryogenics for supported units, and provides Navy-peculiar supply support to the MWSS EAF and weather sections. The MALS requires motor transport and engineering support from the MWSS to conduct class V(A) distribution.

a. MALS Staff Responsibilities/Functions

(1) MALS Maintenance Department. The aviation logistics functions of the MALS maintenance department include aircraft, avionics, SE maintenance, flight equipment, cryogenics, aviation ordnance, and maintenance data collection and analysis. Use all available talents and resources to ensure components are repaired to the highest standard of quality to further enhance the war fighting capabilities of the customer (the tactical squadrons). The following responsibilities apply:

- Coordinate control of aircraft maintenance performed by, and in support of, squadrons and units under the cognizance of the MAG CO, and materiel condition and combat readiness of assigned weapons systems and equipment.

- Conduct liaison among squadrons, stations, MAWs, and other activities in connection with maintenance or materiel matters.

- Ensure squadrons within the MAG provide augmentation personnel on a TAD basis as required for training in the maintenance of organic systems and subsystems by the I-level.

- Coordinate pre-deployment planning for the provisioning of personnel, facilities, SE, and services for supported squadrons.

- Screen supported deploying squadron materiel to ensure only materiel considered essential to support the specific deployment is embarked and consolidation of multiple squadron requirements is made whenever possible.

- Screen appropriate MALSP IMRL allowances to ensure they are tailored to support the quantity and type aircraft assigned to the MAG squadrons.

- Ensure the MAG aircraft assignment board (or equivalent) is maintained and reflects current OPNAV XRAY status.

- Maintain liaison with supported squadron Maintenance Material Control Centers and the Aviation Supply Department (ASD) and ensure adequate validation and reconciliation of outstanding requirements takes place.

- Monitor MAG squadrons to ensure an effective maintenance program is being conducted.

- Monitor MAG squadrons to ensure an active and effective QA monitoring program exists.

- Monitor MAG squadrons to ensure correct maintenance, administration, and material handling procedures are used, directing particular attention to the detection and removal of all administrative impediments to aircraft readiness.

- Perform joint aircraft inspections periodically with squadron maintenance officers.

- Assist squadrons in obtaining engineering technical assistance.

- Coordinate with other staff organizations to ensure maintenance facility requirements for both MALS and the O-level are updated and submitted as required.

- Coordinate with the MAG S-4, the assignment of aircraft parking spaces within the MAG.

- Ensure an aggressive and effective management program is in place to control cannibalization of aeronautical equipment. To the maximum extent possible, ensure selective cannibalization actions are planned to prevent aircraft from being in a non-flyable status for more than 30 consecutive days.

- Ensure inter-MALS liaison is maintained for repair of components in the secondary repair site program.

- Coordinate D-level drive-in or field modifications of assigned aircraft.

- Ensure an effective program is in place to review the MALS Individual Component Repair List (ICRL) quarterly.

- Conduct frequent meetings, chaired by the MO and co-chaired by the AVNSUPO, with supported units to ensure optimum communication and coordination.

- Analyze the mission accomplishment and capabilities of the department using reports provided by the MDS on a continuing basis.

(a) MALS Avionics Division. The functions of the Avionics Division are organized to provide the maximum support, coordination, and leadership in support of the MALS' mission in the respective areas of aircraft maintenance, avionics equipment maintenance, integrated logistics resource management, and professional personnel development. The management of the MALS Avionics Division is the responsibility of the MALS AVO. This is accomplished by interpreting and implementing avionics policies and procedures for the MALS commander.

All maintenance and support of MALS and supporting activities, avionics equipment, to include Weapons Repairable Assemblies (WRA), Shop Repairable Assemblies (SRA), SE, test measuring and diagnostic equipment, and "Navy funded" computers and peripherals, will be performed by personnel assigned within the Avionics Division. These functions encompass programs, equipment, and support for activities both internal and, on occasion, external to the MAG. The Avionics Division is responsible to the MO, who has the overall responsibility for the production effort within the MALS, for matters dealing with the scheduling, prioritization, and production of avionics equipment.

An Avionics Division exists within each MALS and consists of functional branches. The division will be comprised of an Avionics Branch, PME Branch, and various production branches necessary to support flying squadrons of a MAG. Each branch is responsible for the maintenance of its respective avionics equipment, the welfare of their personnel, an accurate accountability of work center IMRL assets, and individual branch security. The Avionics Branch is responsible for overall division administrative duties, as well as I-level maintenance on avionics equipment. Depending upon the type of aircraft supported, the Avionics Branch may contain up to five work centers:

- Communications/Navigation

- Electrical/Instrument Repair

- Automatic Test Equipment (ATE)

- Electronic Warfare

- Radar

(b) Ordnance Division. The function of the MALS Aviation Ordnance Division is to provide the MALS with logistical and management support of Class V(A) ordnance, aircraft Armament Equipment (AE) and Aviation Weapons Support Equipment (AWSE).

This is done by interpreting and implementing the ordnance policies and procedures for the MAG. The MALS Ordnance staff shall:

- Ensure the management and coordination of the training requirements and distribution of authorized NCEA.

- Ensure proper logistical support and storage requirements for prepositioned war reserve materiel requirements assets are identified, to include build up and delivery of Class V(A), ammunition stock points, advanced bases, and forward arming and refueling points (FARP).

- Manage the MAG's Ordnance Safety Program and ensure explosive safety policies and procedures are issued as required. Ensure MAG compliance with the Explosives Qualification and Certification Program.

- Ensure compliance with the policies and procedures set forth in the current revision of OPNAVINST 8000.16 when preparing QDRs, EMRs, TPDRs, and EI requests.

- Ensure Class V(A) materiel is managed per the current revision of NAVSUP P-724 and other related directives.

- Establish and monitor the Handling, Qualification and Certification Program for non-nuclear aviation ordnance and non-nuclear explosive devices for the MALS.

- Establish and maintain a satellite Production Control Work Center.

- Analyze division production and readiness using reports provided by the MDS.

- Ensure satellite production efforts support the Maintenance Department’s goals, objectives, and standards.

- Publish a monthly maintenance and training plan for the maintenance of airborne weapons, training assets, AWSE, AAE, and formal in-service training of aviation ordnance personnel.

- Ensure all maintenance performed on the AAE pool and AWSE is per the standards and guidelines established by the MALS Maintenance Department.

- Provide information/data concerning manpower, equipment, Class V(A) materiel, and facilities to appropriate authorities.

- Establish a verification program for technical manuals and directives maintained by the division.

- Establish an AAE pool per MAW and aircraft controlling custodian/type commander (ACC/TYCOM) directives.

- Ensure the Retail Ordnance Logistics Management System (ROLMS) and standardized conventional ammunition automated inventory record are used to manage Class V(A).

- Monitor and coordinate non-expendable aviation ordnance support provided by the MALSP.

- Ensure the division maintains the capability to operate from advanced bases and FARP sites.

- Coordinate pre-deployment planning for ordnance personnel, facilities, SE, ordnance materiel, and services to support squadrons (NAVSEA OP5 VOL III).

- Screen squadron materiel requests and the availability of Class V(A) assets to ensure only materiel considered essential is embarked.

- Ensure appropriate levels of support are identified in the TPFDD database.

(2) Aviation Supply Department (ASD). The ASD executes all functions dealing with the inventory, storage, and management of Navy-provided materiel. The ASD staff functions include, but are not limited to, the direct responsibilities listed in the following paragraphs. An ASD exists within each MALS with physical location of the divisions within the ASD varying depending upon local situations. However, preferred locations are adjacent to the maintenance department production divisions. The hours of operation will be consistent with the operating hours of supported organizations. The following functional divisions comprise an ASD:

(a) Supply Response Division (SRD). The SRD is responsible for the initial screening and technical research of all requisitions assigned by NALCOMIS. The SRD will refer consumable requisitions that cannot be filled from Supply Officer Stores to the appropriate supply point of entry. Additionally, the SRD is responsible for the reconciliation and monitoring of all outstanding DTO requisitions except for custodial, pre-expended bins (PEBs), and service market items.

(b) Consumable Management Division (CMD). CMD is responsible for the procurement, receipt, storage, issue, delivery, and inventory of all consumable material
The CMD consists of five branches:

- The Receiving Branch is responsible for the receipt and the redistribution of all material shipped to the MAG/MALS from external sources.

- The Consumables Delivery Branch is responsible for delivering all consumable issues, consumable direct turn-over (DTO) receipts, and processing related transactions.

- The Consumable Storage Branch is responsible for the storage, issue, and inventory of all consumable materiel in the supply officer's stores and is divided into the Consumable Storage Section and the Consumable Issue Section.

- The Consumable Control Branch is responsible for all functions related to inventory management of consumable materiel.

- The Pre-expended Branch is responsible for establishing, managing, and replenishing PEB sites authorized by the AVNSUPO or MO.

(c) Repairables Management Division (RMD). The RMD is responsible for repairables allowance management, procurement, receipt, storage, issue, delivery, and inventory of all repairable materiel. The RMD is also responsible for the induction and recovery of repairables into/from the IMA and for shipment and tracking of Beyond the Capability of Repair (BCM) components to the appropriate activity. Management and control of all classified and fleet controlled materiel (repairable and consumable) is also the responsibility of the RMD. The RMD consists of five branches:

- The Repairables Control Branch is responsible for establishing and maintaining repairable allowances and for their procurement, inventory, and accountability. It is also responsible for processing repairable requisitions and receipts with exceptions, processing all repairables returned from the IMA, and for the screening and carcass tracking of BCM components. This branch will also perform all duties concerning classified material. This includes receipt, storage, issue, packaging, and shipment. Procedures for handling classified material are in MCO P4400.177, OPNAVINST 5510.1, and OPNAVINST 5218.7.

- The Repairables Delivery Branch is responsible for delivering all repairable materiel (issues and DTO) to the customer. This branch will pick up all non-RFI repairable components from the customer ensuring accuracy of all documents, such as logbook, scheduled removal card (SRC), and Maintenance Action Form (MAF).

- The Repairables Storage Branch is responsible for the receipt, issue, storage, and inventory of all repairable materiel in the Supply Officer's Stores. The storage of repairables is broken down into two separate sections: the WRA Section and the SRA Section.

- The Awaiting Parts Branch is responsible for storage and management of repairable components awaiting repair parts.

- The Supply Shipping Branch is responsible for packaging and shipping all aeronautical-related components and equipment.

(d) Supply Accounting Division (SAD). The SAD is responsible for all tasks related to maintaining and reporting the financial accounts granted to the ASD. The SAD consists of two branches:

- The End Use Branch is responsible for maintaining and reporting all end use accounts allocated to the ASD. This branch is divided by Operating Target (OPTAR) funding.

- The Stock Fund Branch is responsible for reporting transactions, which affect the NWCF Special Accounting Class 207 (SAC 207) inventory. Additionally, it is responsible for verifying the financial processing of all transactions processed by the MALS.

(e) Squadron Support Division (SSD). The SSD is responsible for receiving, processing, and monitoring all requirements for aeronautical related custodial materiel and for maintaining custody records for all organizational allowances. The SSD consists of two branches:

- The Customer Assistance Branch is responsible for receiving, processing, and monitoring all requirements for aeronautical-related custodial materiel.

- The Custody Records Branch is responsible for maintaining the custody record cards for all organizational allowance material, such as IMRL, TBA, COSAL, Controlled Equipage listed in the NAVAIR 00-35QH-2 (Section H), and Maintenance Assist Modules/Test Bench Installations. This branch is also responsible for formulation of the quarterly and annual budgets as well as the midyear budget review for all custodial materiel.

(f) Supply Management Division (SMD). The SMD is composed of the most knowledgeable and experienced aviation supply personnel responsible for monitoring the overall Supply Department operation, technical training, and MALSP allowances and pack-ups (as they pertain to deployed and contingency operations).
The SMD consists of two branches:

- The Audit Branch monitors all supply functions within the ASD to ensure compliance with authorized procedures and achievement of established goals.

- The MALSP Support Branch is responsible for validating and loading MALSP allowances and monitoring pack-ups.

(g) Supply Personnel and Administration Division. The SPAD is responsible for the administrative control of all personnel assigned. The SPAD performs clerical functions and maintains the master files of all messages, orders, correspondence, and directives for the ASD. The SPAD consists of two branches:

- The Supply Personnel Branch is responsible for performing functions related to administrative control of all personnel within the ASD.

- The Supply Administrative Branch provides clerical assistance for the ASD as directed by the AVNSUPO or the aviation supply chief.

(3) MALS Operations Department. The MALS is a command entity similar to other Marine squadrons. The MALS Operations Officer is the chief advisor to the MALS Commanding Officer for all matters pertaining to planning and execution of tactical operations involving aviation logistic support. The Operations Department is responsible for identifying, planning, coordinating, and supervising all operational aviation logistics planning requirements.

The MALS Operations Department coordinates with both the parent Marine Aircraft Group (MAG) and each supported squadron regarding aviation logistics support for deployed squadrons and detachments. The Operations Department serves as the MALS point of contact for all deployment support involving the Unit Deployment Program (UDP), L-Class/CV/CV(N) and T-AVB/MPF employment plans and milestone reporting and is responsible for AVLOG Force Deployment Planning and Execution (FDP&E) as it relates to Deliberate and Crisis Action Planning.

(a) Deliberate Planning. Deliberate planning is conducted during peacetime to develop and refine war plans. Planning in this fashion allows for orderly and methodical command and staff participation in the preparation of a plan. Deliberate planning is conducted when there is ample time for detailed, methodical, and comprehensive planning and coordination. The deliberate planning process culminates with the creation and refinement of Time Phased Force Deployment Data (TPFDD) and its placement into the Joint Operations Planning and Execution System (JOPES). The following steps will be followed during this planning process:

- The Operations Department coordinates the range and depth of aviation logistics support required to support the concept of operations as defined by the MAW Aviation Logistics Plans section.

- The Operations Department is responsible for reviewing all plans that require employment of aviation logistics and Class V(A) support and coordinating operational aviation logistics as required to support each plan.

- In performing these tasks, the Operations Department will coordinate the review of OPLANs/CONPLANS plans with internal MALS Departments. The Operations Department will determine, in coordination Consolidated Administration (CONAD), assignment of MALS core and augments personnel to:

(a) MPS Survey Liaison Reconnaissance Party (SLRP), Arrival Assembly Offload Element (AAOE), Offload Preparation Party (OPP)

(b) Aviation Logistics Support Ship (T-AVB)

(c) CV/CV(N)/LHA/LHD

(d) Ashore ACE Beddown Airfield

- The MALS Operations Department is also responsible for reviewing each applicable deliberate plan and determining:

(a) If the Commanders Intent and End State for each deliberate/contingency plan has been met.

(b) The employment, configuration and coordination of arrival date of the T-AVB.

(c) The TPFDD flow of aviation logistics assets into the theater of operations.

(d) Each MALS Unit Line Numbers (ULN) identified on the TPFDD.

(e) Site Survey for the MALS Beddown Sites.

(f) Geo-prepostioned SE off-load distribution and assignment plan.

(b) Crisis Action Planning. Crisis Action Planning (CAP) performed by aviation logistics planners at all levels must recognize that CAP is not governed by rigid steps as it is a flexible means of coordinating staff action. However, certain conditions may be viewed as probable with respect to the preparation of deployment data in response to any crisis action situation. If the crisis is in response to a contingency for which deliberate planning has been conducted, the existing planning data can be used as tool to develop tailored support. If the crisis is in response to a contingency for which no deliberate planning has been previously conducted, aviation logistics support must be tailored without the benefit of existing data. During CAP the Operations Department is responsible for:

- Recommending to the MALS Commanding Officer operational priorities for the movement of MALS support.

- Acting as the MALS point of contact for the Wing Staff when the Crisis Action Team (CAT) is established.

- Coordinating the development and implementation of troop movements from home station to the sea/air port of embarkation.

- Coordinating with other MALS Departments/Sections to identify and tailor aviation logistics support.

- Determining priorities for MALS replacements, in coordination with S-1.

- Coordinating MALS operational security (OPSEC) and signal security (SIGSEC).

(4) Automated Information Systems (AIS) Department. The AIS Department provides data processing support to the Supply and Maintenance Departments. The AIS Department is responsible for the administration, operation, and maintenance of all computer systems and networks throughout the Supply, Maintenance and Ordnance Departments. The AIS consists of five divisions; Administration; Customer Support; Network Administration; Systems Processing; and Maintenance Support.

Chapter 3

Command and Control Information Systems for Aviation Logistics

3001. Introduction. Logistics provides resources to support the warfighter. Command and Control (C2) of logistics manages the process of providing those resources, and information management is a principal tool for accomplishing this task. Logistics information management at the tactical level ranges from manual methods to employment of sophisticated automated information systems (AIS). Marine Corps aviation organizations down to the squadron level have organic AIS capabilities to manage the maintenance and logistics requirements of aircraft, aeronautical material and aviation weapons and ordnance. Each organization has networked computer systems to support data input and processing of a myriad of information requirements. MALS/aircraft squadrons possess a variety of computer hardware suites and software applications for submitting input to, and receiving output from, Navy and Marine Corps support systems. As such, AISs and their communications systems are becoming seamlessly linked and are necessary for the effective management of all aeronautical assets. The Automated Information Systems Department (AISD) supervises the MALS/squadron's communications and information systems support operations and is responsible for the technical direction, control, and coordination of communications and information systems support tasks. This chapter provides an overview of the AIS used at the tactical, operational and strategic level required for the logistics support of expeditionary Marine aircraft.

3002. Naval Aviation Logistics Automated Information Systems (NALAIS). NALAISs are AISs that are managed, controlled and funded by the Navy for use by and distribution to Naval aviation (Navy/Marine Corps) activities and supporting establishments.

3003. Naval Tactical Command Support System (NTCSS)

An AIS under the management of Commander, Space and Warfare System Command (COMSPAWARSYSCOM), Naval Tactical Command Support System (NTCSS) provides a full range of responsive mission support automated data processing (ADP) hardware and software to facilitate management of information, materiel and funds required to maintain and operate aircraft. Specifically, NTCSS supports O-level and I-level:

- Aviation maintenance management
- Materiel and financial management

NTCSS as a family of systems, incorporates the functionality provided by the former systems of Maintenance Resource Management System (MRMS), Naval Aviation Logistics Command Management Information System (NALCOMIS OMA and NALCOMIS IMA) and Shipboard Non-tactical ADP Program (SNAP) through the functional enhancement and integration of existing legacy systems. Depending on the nature of the user site, all or some of these functions are available to afloat units, Marine Corps Air Stations, and MALS. NTCSS provides tactical commanders and AVLOG managers the required mission support information for tactical decisions, improved equipment supportability and maintainability, and results in a commensurate enhancement in the materiel condition and combat readiness of aviation units.

3004. Naval Aviation Logistics Command Management Information System (NALCOMIS). NALCOMIS provides squadrons (O-level) activities and MALS (I-level) with a modern, real time, responsive, computer based management information system. The three objectives of NALCOMIS are to increase aircraft and aeronautical equipment readiness by providing local maintenance and supply managers with timely and accurate information required in their day-to-day management and decision making process, reduce the administrative burden on the fleet, and improve the quality of upline reported data.

a. NALCOMIS Organizational Maintenance Activity (OMA). Provides effective AIS capability to satisfy various functional requirements of the Naval Aviation Maintenance Program (NAMP). It is a management information system designed to provide Marine Corps O-level activities with timely and accurate information for day-to-day management of assigned aircraft and equipment. NALCOMIS OMA allows the organization the capability to manage maintenance and supply processes by allowing systems users to enter, collect, process, store, review, report and interface required data. These detailed processes are in support of aircraft, engine, assets, and SE repair; materiel requisitions; direct and indirect support materiel control; personnel, aircraft and equipment assignment and deployment; subcustody of equipment; utilization of resources; and additional actions at the O-level.

The major functions required by the O-level are integrated into one system sharing a common database. This approach avoids redundancy of functions and related data within the organization. It also serves to improve the overall communication and response time associated with multiple databases. The major functions of NALCOMIS OMA are divided into nine subsystems and two utilities:

(1) **Database Administration Subsystem**. This subsystem allows the O-level to establish and maintain system level support tables. These tables provide the baseline data for the O-level, database application security, and data tables.

(2) **Maintenance Subsystem**. This subsystem collects and processes maintenance related data and provides this data to other subsystems on the database.

(3) **Flight Subsystem**. This subsystem collects and processes flight related data and provides this data to other subsystems on the database.

(4) **Logs and Records Subsystem**. This subsystem provides the ability to establish and maintain configuration profiles on aircraft, engines, modules, and components assigned to the O-level.

(5) **Personnel Subsystem**. Reserved for future use.

(6) **Asset Subsystem**. This subsystem provides the ability to inventory and process inspection related data on O-level assigned assets, for example, aeronautical equipment, SE, IMRL equipment, and Aviation Life Support System (ALSS).

(7) **Data Analysis Subsystem**. This subsystem provides the O-level 3M analyst with the ability to approve MAF and flight records for upline submission to the Data Services Facility (DSF); correct, delete, and reinduct MAFs and flight documents; perform end-of-month MAF close out processing; and generate MAF audit reports.

(8) **Technical Publications Subsystem**. Reserved for future use.

(9) **Reports Subsystem**. This subsystem provides the ability to select and produce reports.

(10) **Ad Hoc Query Utility**. This utility provides the ability to create reports to meet the users specific needs. The reports may be derived from selected database tables allowing the manager to gather data in various areas, for example, aviation 3M reports, flight reports, trend analysis, manpower utilization, user login ID and Special Maintenance Qualification (SMQ) assignments, and specific workload reports.

(11) **System Administrator Management Menu (SAMM) Utility**. SAMM provides the ability to the System Administrator/Analyst (SA/A) to maintain the system configuration. SAMM includes application administration; system utilities; detachment processing; mail/messages facility; printer management; process status; system initialization; operating system security management; and queue management.

b. NALCOMIS Intermediate Maintenance Activity (IMA). NALCOMIS IMA, used at the MALS, provides the capability to manage maintenance and supply functions and processes by allowing system users to enter, collect, process, store, review, and report information required by the organization. These processes include engine and SE repair, materiel requisitions, repairables management, awaiting parts (AWP) management, personnel assignment and deployment, subcustody of equipment, use of resources, and additional miscellaneous functions at the MALS. All functions required by the MALS are integrated into one system sharing a common database. This approach avoids duplication and related data between the organizations. The common database also serves to improve the overall communication and response time associated with materiel readiness in support of aircraft maintenance activities. Internal communications among users in the MALS are accomplished through on-line mailbox and hard copy report notices, which are distributed on pre-assigned work center printers. The major functions of NALCOMIS IMA in support of the MALS are divided into 10 subsystems, each of which contains similar processes.

(1) **Database Maintenance Subsystem (DMS)**. The DMS allows the DBA to establish and maintain data within NALCOMIS IMA and perform the necessary local database support functions for all subsystems. These support activities include the initial loading and maintenance of the database, purging data records generated by the application subsystems, transferring data to historical archives, and deleting outdated data. The processing of external interface data to update inventory and requisition records is also handled within this subsystem.

(2) **Maintenance Activity Subsystem (MAS)**. MAS allows maintenance personnel to document maintenance actions, order parts, maintain individual component repair list data, and request inquiries. Actual documentation requirements such as validation specifications, form descriptions, and field entry requirements are contained in this and other instructions. Any NALCOMIS IMA specific documentation requirements are covered in the detailed description of each function or screen. Contingency processing is included in this area.

(3) **Configuration Status Accounting Subsystem (CSAS)**. CSAS contains three sections; Aircraft Engines, SE, and Technical Directives (TD).

- **Aircraft Engines**. Users establish and maintain a database in NALCOMIS IMA to contain all the information pertaining to on-hand engines and their installed modules and components, as well as on-hand uninstalled modules and components.

- **Support Equipment**. Maintains a database containing all of the information pertaining to assigned SE.

- **Technical Directives**. Tracks both incorporated and non-incorporated TDs for aircraft engines, engine modules, engine components, SE, and SE components.

(4) **Personnel Management Subsystem (PMS)**. PMS contains information on assigned military and civilian personnel. The information is used for workload management and to verify authorization for discrepancy sign-offs, quality assurance (QA) inspections, MAF reviews, and other job related functions.

(5) **Asset Management Subsystem (AMS).** AMS contains the functions required to maintain inventory and utilization data for SE and IMRL items.

(6) **Materiel Requirement Processing Subsystem (MRPS)**. MRPS covers materiel requirements generated by maintenance customers at the O-level and I-level. These requirements include repairable components, consumable repair parts, and indirect materiel support items.

(7) **Local/Up-line Reporting Subsystem (LURS)**. LURS supports Engine Transaction Records (ETR). This subsystem is reserved for future use.

(8) **System Support Subsystem (SSS)**. SSS permits the user to see a listing of the on-screen messages that are waiting action. In addition, the system administrator (SA) uses on-line functions to review the requests for reports, and to release them for subsequent printing.

(9) **Data Off-load/On-load Subsystem (DOOS).** DOOS is used to generate files, reports, and documents for data off-load/on-load. These items accompany temporarily transferred SE and personnel and permanently transferred SE, either to or from organizations.

(10) **Technical Publications Subsystem (TPS).** TPS provides an automated technical library tracking system.

3005. Shipboard Non-tactical Automated Data Processing Program III (SNAP III). SNAP III provides automated information processing support for supply, finance, and organization maintenance management to the MALS. SNAP is an umbrella program, which includes numerous applications for shipboard use. SNAP has several variants. SNAP I supports Marine Aviation Logistics Squadrons (MALS), at training sites and at selected fleet support sites.

3006. ShipBoard Uniform Automated Data Processing System (SUADPS). Under management and configuration control of Commander, Naval Supply Command (COMNAVSUPCOM), SUADPS is the aviation supply software application used by MALS to provide financial, inventory, and logistics management of aviation supply support for Marine aircraft. SUADPS-Real Time (RT) manages inventory, orders parts, provides customer services, manages finances, manages ADP; and manages necessary documents, ledgers, reports and references. SUADPS-RT is divided into three major functional subsystems:

- Logistics Management
- Inventory Management
- Financial Management

An additional executive subsystem is the central controller of the system and serves as primary interface with the user. Functional subsystems are:

a. **Logistics Management Subsystem**. Provides automated assistance for Supply Department material control and customer support activities. It provides for on-line collection and maintenance of data on stock items, repairables and requisitions, provides on-line requesting of materiel by Supply Department customers and automated issue of materiel or creation of requisitions, provides automation to manage offload or transfer of stock. It further automates preparation, control, recording and reporting of receipts, maintains status of all requisitions and purchases, including money-value only, pushed materiel and Naval Sea Systems Command (NAVSEA) funded initial outfitting type requisitions, and verifies acceptability of various data elements prior to admittance of new data into the system.

b. **Inventory Management Subsystem**. Provides automated support for control of inventory and consists of two primary functions. The first function, maintenance of inventory data, establishes and maintains records that identify, locate, quantify and describe stock items. Actual materiel versus recorded materiel on-hand, and materiel due versus materiel received are reconciled and surveys, gains or losses processed. The second function, computing, adjusting and reporting inventory data, implements policies through system wide inventory data modifications and produces management reports which summarize stock item information held as inventory data. Stocking objectives and allowances are managed within this function.

c. **Financial Management Subsystem**. Provides support for either manual or automated updates and information queries of all financial data maintained in SUADPS-RT. The subsystem is composed of three primary functions. These functions provide automated support for:

- Maintaining up-to-date financial data
- Monitoring and controlling fund expenditures.
- Producing financial reports and displays.

The financial subsystem maintains comprehensive financial records for all supply transactions, provides data for all required reports and management information queries, and provides controls to promote accuracy and validity of financial data. Two accounting methods are incorporated into the financial management subsystem.

(1) **Operating Target (OPTAR) Accounting**. OPTAR is used to account for activity operations and maintenance funds. All materiel and expenditures for obtaining services are expensed to an annual appropriation upon issue to the unit or obligation for purchase. OPTAR accounting is also performed for any supported units.

(2) **Navy Stock Fund (NSF) Special Accounting Class (SAC)-207 Accounting**. The NSF, SAC-207 Accounting Aviation Supply Officer has both inventory and fiscal accountability for materiel in stock. Material in stores is held in the NSF and upon issue is expended to an annual appropriation with reimbursement to the Stock Fund. Material transferred to other supply officers is retained in the NSF and reported to the Fleet Accounting Center as expended through transfer. Fleet Accounting Center reconciles transfer expenditures to units involved monthly. Formal inventory control records are maintained and simplified Stock Fund returns are submitted to Fleet Accounting Center monthly.

d. **Integrated Barcode System (IBS)**. This form of Automated Information Technology (AIT) applies bar code technology and automated data entry techniques to material receipt and expenditure processing, physical inventory management, configuration accounting, equipage accounting, carcass tracking and material shipment processing. This technology improves management and accuracy of inventory control for mission essential items and items that require special controls or chain of custody accountability by regulation or directive. IBS provides automated functionality to conduct inventories, location audits and receipts processing via barcode technology, without the use of printed materiel. Inventories or location audits are conducted based on user determined parameters (location range, stock number or other criteria). Functionality is provided to conduct both scheduled and unscheduled inventories. IBS also provides automated support for the performance of inventory count accuracy and quality control auditing prior to acceptance of the inventory results. Additionally, IBS provides a capability to automate inventory reconciliation research. IBS will determine stock numbers, which are out of balance between stock records and inventory results, query all applicable automated files, and present information found in on-line or printed reports.

3007. Table of Basic Allowance (TBA). TBA is a database "*allowance*" information system that is used by Fleet Marine Forces and aviation activities to provide initial outfitting allowances of authorized materiel and for automated control of organizational property for O-level and I-level Aviation Supply, Maintenance and Ordnance Departments.

3008. Support Equipment Management Information Systems. The Individual Material Readiness List (IMRL) is a consolidated list of specified items and quantities of Support Equipment (SE) required by a particular aircraft maintenance activity or activity component to perform its assigned aviation maintenance mission. An IMRL is constructed by COMNAVAIRSYSCOM for all Marine Corps aviation activities by extracting SE items from the Support Equipment Resources Management Information System (SERMIS) database. IMRLs identify materiel requirements and provide a basis for SE procurement. This information aids decisions regarding readiness, budget forecasts, procurement requirements, and redistribution of excess assets.

a. Automated Support Equipment Recommendation (AUTOSERD). AUTOSERD is the primary system for data collection and transfer of aviation SE requirement and acquisition information amongst the Naval Air Systems Command (NAVAIR). It is also utilized by cognizant field activities (CFAs) along with the Naval Inventory Control Points (NAVICP), Philadelphia previously known as the Aviation Supply Office (ASO) and Mechanicsburg previously known as Ships Parts Control Center (SPCC). SE requirements are documented in support of aircraft, missiles, weapons systems, installed avionics, engines, and other systems SE for high operational readiness. One of the outputs of the Logistics Support Analysis is a document and its associated process known as the Support Equipment Recommendation Data (SERD). The SERD is the source document for the AUTOSERD system. The SERD is a compilation of data that describes a requirement for specific items of SE. It serves as the primary data record for the design, development, Integrated Logistic Support, allocation and superceding (prime/alternate relationship) of SE. It describes technical and design parameters as well as acquisition and logistic support data to satisfy End Article support requirements. AUTOSERD is the sole source of input for requirements data to the Aircraft Maintenance Material Readiness List (AMMRL) program's Support Equipment Resources Management Information System (SERMIS). The primary objective of the AUTOSERD system is to provide a consistent and coordinated SE requirement process and pass accurate SE source data to SERMIS for production of Individual Materials Readiness Lists (IMRL). IMRLs identify fleet activity SE requirements, provide a basis for SE procurement, and aid decisions on overall readiness posture, budget forecasts, and redistribution of assets.

b. Support Equipment Resources Management Information System (SERMIS). SERMIS is the primary Management Information System (MIS) supporting the AMMRL Program. As directed by the Chief of Naval Operations (OPNAV N88), SERMIS is the single source for baseline budgeting and acquisition of aviation SE for NAVAIR Program Managers as well as Marine SE logistics managers. SERMIS provides a centralized and integrated database containing SE data for inventory, allowance, and rework capability and production status in a form suitable for on-line interactive access. The system recognizes approximately 1,000,000 items of SE, supporting approximately 1,000 aircraft maintenance activities, 70 power plant configurations and 1,600 avionics, missile and armament systems.

c. Local Asset Management System (LAMS). The LAMS program is a standardized system for the management of SE at all three levels of Naval Aviation Maintenance. LAMS enhances the control of inventory through up-line reporting of SE assets to SERMIS. SERMIS contains the master database of equipment for the Aviation Maintenance Material Readiness List (AMMRL) Program. LAMS also provides automated methods of tracking SE assets at the organizational and intermediate level.

d. Support Equipment Standardization System (SESS). SESS is designed for the maintenance management of SE at the MALS. The system provides automated methods of preventive maintenance (PM) scheduling for SE inventory records, technical directive (TD) compliance and supply requisition management.

3009. Naval Ordnance Automated Information Systems. The following systems are use to manage and control Naval aviation ammunition, ordnance and explosives.

a. Conventional Ammunition Integrated Management System (CAIMS). MALS/squadron ordnance technicians and mangers utilize CAIMS as it provides on-line inventory management data such as ammunition location, quantity, materiel condition, purpose code, and requisition status. It is the Navy’s single source database inventory tool and is used to support life cycle management of Class V(A) materiel.

b. Retail Ordnance Logistics Management System (ROLMS). ROLMS is a PC-based inventory management tool designed to provide automated ammunition requisitioning, status accounting and inventory management capability at the

MALS/ammunition supply point (ASP) level. In addition, ROLMS provides the capability to interface with CAIMS via Naval message from expeditionary sites. It is the principle system used to provide visibility of Class V(A) and Class V(W) at the user level, and is a feeder system to CAIMS. ROLMS is currently replacing the Fleet Optical Scanning Ammunition Management System (FOSAMS) for Class V(A).

3010. Streamlined Automated Logistics Transmission System (SALTS). Aboard an aviation logistics support ship or at an expeditionary shore sites, MALS accumulates data from various sources within the activity (i.e., requisitions from the SNAP system, SUADPS and NALCOMIS). Each data file is assigned a unique name and then digitally compressed to about one-third its original size. The data is then encrypted and transmitted to SALTS Central at the NAVICP, Philadelphia, PA. If the data is transmitted via an International Maritime Satellite (INMARSAT), it is received at an INMARSAT down-links in Connecticut or California, then transmitted over telephone lines to NAVICP Philadelphia. SALTS can also be used with regular telephone lines or DoD networks. At NAVICP Philadelphia, the data is sent to the intended recipient using any of several networks, including the Defense Data Network and INTERNET. A shore activity can transmit data such as status of requisitions back to the originator via SALTS, to SALTS Central. The data is placed in an electronic "post office box" and automatically downloaded to the activity the next time they call in to SALTS. SALTS is available 24 hours a day and has a 100% audit trail. Program enhancements are distributed electronically and installed automatically by the SALTS program.

3011. Logistics Automated Information Systems (LOGAIS) and Aviation Logistics. The following family of logistics AISs are utilized by MAW/MALS aviation logistics planners and embark representatives while developing Time-Phased Force Deployment Data in support of deliberate and crisis action planning. While designing force deployment and execution (FDP&E) plans, Marine aviation logistics planners utilize data derived from SERMIS and SUADPS databases, as well as others, to develop TPFDDs in support of operational plans (OPLANS). See figure 3-1.

a. Marine Air-Ground Task Force System (MAGTF II)/Logistics Automated Information System (LOGAIS). MAGTF II is a micro computer based planning system able to respond to a wide variety of operational requirements. MAGTF II provides planners with an automated tool enhancing the planning process of a deploying force, accelerating the capability to develop and source forces of a Time Phased Force Deployment Data (TPFDD). The system is designed to improve and condense the operational planning process through interactive design and database methodologies. MAGTF II is used for deliberate and crisis action planning as well as exercises. Utilizing MAGTF II, planners may develop force structure, tailor force lists, compute sustainment, estimate and plan lift requirements, and generate TPFDDs. Extensive reference files and code tables are rapidly accessible to the planner, and a variety of reports and graphs assist in the analysis and refinement of feasible plans. MAGTF II also acts as a "deployable JOPES" enabling the planner to communicate with JOPES in order to transmit or receive TPFDD information. Plans may be downloaded from JOPES to MAGTF II, modified, and transmitted to other LOGAIS systems.

b. MAGTF Deployment Support System II (MDSS II). MDSS II is an automated information system capable of supporting rapid military deployment anywhere in the world. MDSS II provides commanders at various echelons of the Marine Air Ground Task Force (MAGTF) the ability to:

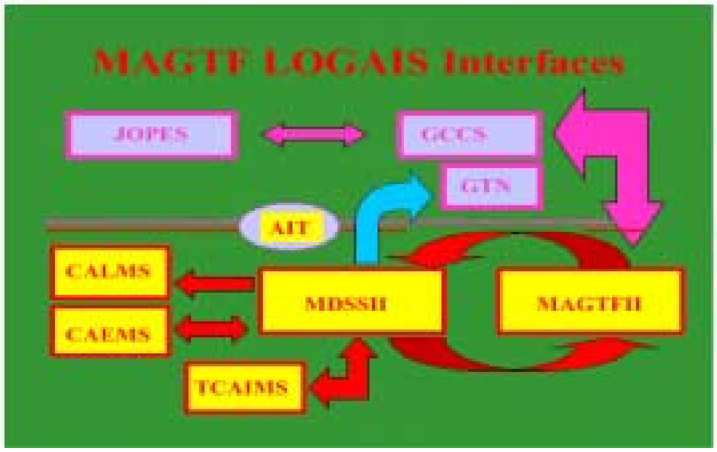
- Provide a unit level database capable of supporting rapid deployment of forces.
- Build and maintain a database containing force and deployment data.
- Retrieve information in near real time, in the form of reports and adhoc queries.
- Utilize Automated Information Technologies (AIT), to collect data and track equipment.
- Interface with external databases, such as ATLASS, UD/MIPS, CALM and MDL.

This data can be maintained during normal day-to-day garrison activities and updated during plan development and execution. In addition, extracted MDSS II data provides the Joint Chiefs of Staff (JCS) and National Command Authority with an accurate picture of the MAGTF composition to include the "sealift and airlift requirement" by passing the data through MAGTF II and TC AIMS.

c. Transportation Coordinator's Automated Information for Movement System (TC-AIMS). TC AIMS is an operations oriented member of the USMC Marine Air-Ground Task Force II/Logistics Automated Information Systems (MAGTF II/LOG AIS) family of deployable, mutually supporting systems. TC-AIMS provides the unit commander with the automated capability to plan, coordinate, manage, and execute movements at the tactical and operational levels; or at origin, from origin to point of embarkation, from point of debarkation to destination, and at destination. TC-AIMS is capable of producing Military Shipping Transportation and Management Program (MILSTAMP) documentation such as TCMDs, Ocean Cargo Manifests and military shipping labels. In addition, TC-AIMS is capable of producing special reports and forms required for shipping hazardous materials. This feature allows TC-AIMS to interface with strategic In Transit Visibility (ITV) systems, such as the Global Transportation Network (GTN) and Warfare Planning System (WPS).

d. MAGTF Data Library (MDL). MDL is a master data reference source, maintained by CG Albany, which provides standardized reference data to include; tables of organization (T/O), tables of equipment (T/E), dimensional information, etc. Through the use of MAGTF II the data hosted within MDL is utilized to operate the programs. MAGTF Data Library provides a source of quality technical reference data for the LOG AIS family of systems. MDL sources data for over 134 tables from various military information systems. Current resources include the Joint Chiefs of Staff, U.S. Transportation Command, the Defense Mapping Agency, and other service agencies

3012. **T-AVB Automated Load Planning System (TALPS)**. TALPS takes the place of Computer Aided Embarkation Management System (CAEMS) as the primary AIS for the embarkation of MFs aboard the T-AVBs. TALPS uses state of the art artificial intelligence to accomplish the load planning process, from initial planning to final printing of the load plan. The system considers a myriad of T-AVB *peculiarities* to ensure operational capability of selected MFs while underway.



MDSS II is the hub of all LOGAIS

Figure 3-1 MAGTF-LOGAIS Relationships

3013. Joint Automated Information Systems and the Joint Planning Community. The Joint Planning Process involves two or more U. S. military services, with a designated overall Commander, Commanders-in-Chief (CINC), and Unified Combatant Commanders. Roles are designated, and operational plans and orders are published. Combatant Commanders use the Joint Operation Planning and Execution System (JOPES) to determine the best method of accomplishing an assigned task and to direct the actions necessary to accomplish the mission in either deliberate planning or crisis action situations. Operation plans (OPLANs) and operation orders (OPORDs) are published in JOPES format using the Global Command and Control System (GCCS). Within the Joint Planning and Execution Community (JPEC) Marine aviation logisticians are involved in training, preparation, movement, reception, employment, support, and sustainment of aviation logistics assets assigned or committed to a theater of operations or objective area. Information flow in joint planning, regarding a new or current OPLAN, usually involves large volumes of information which normally flows downward and requires good two-way communications. Commanders at each level prepare supporting plans for the next higher level's supporting plan. Thus, force requirements flow down, and the plans to support those requirements flow up. Additionally, along with the plans to support the OPLAN, lift requirements flow upward. Units state how much lift (i.e., personnel, supplies, and equipment) cannot be moved by organic assets, MAGTF elements consolidate unit requirements, MAGTFs consolidate element requirements and forward them to the supported/supporting commander or Navy component commander. Information concerning how lift requirements will be satisfied flows downward.

a. Joint Operation Planning and Execution System (JOPES). JOPES Enables supported commanders, supporting commanders, and the United States Transportation Command (USTRANSCOM) to manage deployment of forces and follow-on sustainment for both training and contingencies. JOPES is a deployment information system that assists in the development and consolidation of deployment data required for time sensitive and execution planning, as well as monitoring of deployments upon execution. The system provides a comprehensive deployment picture to the National Command Authority (NCA), JCS, military services and the supported MAGTF commander; it allows for timely decisions based on the evolving situation and force flow.

b. Global Command and Control System (GCCS). The voluminous planning and execution information generated by JTFs are supported by GCCS and can be conducted using the MAGTF LOGAIS "family of systems," with the results uploaded from MAGTF II to JOPES. GCCS was developed to replace the World Wide Military Command and Control System (WWMCCS); as part of Command, Control, Communication, Computers, and Intelligence (C4I) systems and applications. GCCS improves the Joint War fighter's ability to manage and execute humanitarian, crisis, and contingency operations; and provides a means for integration of Service and agency C4I systems. It covers the spectrum of conflicts from routine peacetime operations to non-nuclear war. The concept builds upon lessons learned from previous conflicts, operational requirements, the effects of rapidly changing technology, and directions of a changing national security strategy. For the Marine Corps, this means that force planning and execution can be conducted using the MAGTF LOGAIS "family of systems," and the results uploaded from MAGTF II to JOPES via GCCS.

c. Global Combat Support System (GCSS). The global combat support system (GCSS) is not a discrete system but is rather an over-arching capability. Its goal is to provide universal access to information and interoperability of that information within logistics and other support functions. Ultimately it will share this information with other C2 systems to contribute to the CINC’s common operational picture. GCSS encompasses six essential attributes: any box, any user, one net, one picture, common services, and robust communications architecture. GCSS consists of applications and shared data riding on a common operating environment linked through a global network. Its ultimate result will include near real-time C2 of the logistics pipeline from battlefield to sustaining base, one fused picture of combat support to the warfighter, and a closed link between operational C2 and logistics C2.

Chapter 4

Aviation Logistics Planning and Execution

4001. **Introduction.** Effective AVLOG is the *force multiplier* of the MAGTF ACE. A viable AVLOG support plan *enables* the ACE Commander to maintain more capable forces in decisive operations for longer periods of time. This chapter provides a strategic level overview of the AVLOG supporting establishment planning organizations and the basic process and fundamentals under which they operate. Key AVLOG operational level planning considerations are then linked to the intricate tactical AVLOG planning considerations utilized when developing an AVLOG Concept of Support for an expeditionary ACE.

4002. **Strategic Level Resource Acquisition Planning**. The following paragraphs provide an overview of the key tenants of Strategic Level Aviation Acquisition Planning. Acquisition and logistics planning for aircraft/aeronautical equipment, airborne weapons systems and SE is conducted by selected Naval Systems Commands such as COMNAVAIRSYSCOM, COMNAVSEASYSCOM, etc. The individuals that oversee the myriad of functions required to provide complete logistic support through the life cycle of a system, are known as Assistant Program Managers for Logistics (APMLs) or Logistics Managers (LMs).

a. System Acquisition. The aviation system acquisition process is structured in discrete logical phases separated by major decision points called milestones. New major defense acquisition programs are directed in DOD Directive 5000.1 and defined in DOD Directive 5000.2-R. Secretary of Defense (SECDEF) key decision points, identified with milestones and separate phases of acquisition.

b. Mission Need Determination. When DOD Department heads such as the Secretary of the Navy (SECNAV) and Commanders in Chief (CINC) determine a new capability is required to meet a perceived mission need, a Mission Needs Statement (MNS) is submitted to the Joint Requirements Oversight Council (JROC). If the identified mission need is valid the MNS is approved, and a priority is assigned. This direction is given at Milestone 0, which marks the initial formal interface between the requirements generation and the acquisition management systems.

- Milestone 0 Decision - Concept Exploration and Definition Phase
- Milestone I Decision - Demonstration and Validation Phase
- Milestone II Decision - Engineering and Manufacturing Development
- Milestone III Decision - Production and Deployment Phase
- Milestone IV Decision - Operations and Support Phase

c. Integrated Logistic Support Plan (ILSP). The ILSP is developed from the operational and aircraft/aeronautical equipment maintenance concepts. Analyses are made of these plans and an orderly program is developed to support the system throughout its programmed life cycle. The programmed life cycle can be divided into the following four phases:

- Program Initiation Phase.
- Concept Exploration Phase.
- Demonstration/Validation Phase.
- Full Scale Development Phase.

Each phase includes consideration of the logistics requirements for:

- Facilities.
- Repair parts/spares.
- SE
- Preservation and packaging.
- Technical data.
- Engineering, technical, and contractor services.
- Personnel and training.

d. Maintenance Plans. Maintenance plans are concise descriptions of maintenance requirements that drive all logistics elements. These plans are developed and compiled for designated aircraft, their related systems, and other selected items of equipment. It is COMNAVAIRSYSCOM policy to develop, issue, and maintain maintenance plans for aircraft/aeronautical equipment, airborne weapons systems, and SE. The maintenance plan establishes and delineates the repairable components and maintenance requirements of a selected system. For each repairable component, the maintenance plan identifies the maintenance level (O-level, I-level, D-level) authorized to perform the maintenance action indicated, and estimates the frequency of component failure or repair action. The maintenance plan provides the interface between maintenance, engineering, and supply for provisioning purposes, and communicates necessary inputs to enable other LMs to develop their hardware support requirements.

4003. Logistics Requirements Documentation. Several key documents, derived by Naval aviation planners at the service and SYSCOM levels, are utilized to document logistics requirements of aircraft platforms and those of key logistics programs in support of MALSP and geo-prepositioning programs.

a. Weapon System Planning Documents (WSPD). The WSPD is a basic policy and planning document, published by COMNAVAIRSYSCOM, and is produced to provide direction and guidance for program planning, budgeting and execution in the development, acquisition, operation, and logistics support of aircraft and airborne weapons/equipment. The planning data is used by; COMNAVAIRSYSCOM, Program Executive Officers (PEO), SYSCOMs, Naval Aviation Inventory Control Point (NAVICP), and other field activities and fleet commands. The WSPD includes planned procurements, delivery schedules, systems inventories and inventory objectives, baseloading data, test and evaluation plans, supplemental and contingency support requirements, rotational site support, shipboard support, planning factors, authorized weapons expenditures, material support and training policies, training equipment plans, mobile facilities, and other related logistics support planning information.

To ensure congruity, it is essential that the various organizations involved in these actions utilize the common planning base provided by the WSPD. WSPDs are prepared and published NAVAIR Notices for Navy and Marine Corps aircraft and airborne weapons/equipment, which are either undergoing major modifications or are included in the Future Year Defense Plan (FYDP). WSPDs are revised periodically to reflect significant changes that occur in the programs. These changes are coordinated with HQMC Aviation Plans, Programs and Budget Branch (APP), Aviation Weapons System Requirements Branch (APW), HQMC(ASL) and with OPNAV(N88) prior to issuance. Within the WSPD, and based upon numerous factors, spare parts, mobile facilities and SE requirements in support of MALSP are identified. In conjunction with the MALSP Program Planning Document (PPD), these documents identify the aviation logistics support elements required of all tactical Marine aircraft.

b. Program Planning Documents (PPD). The PPD is a basic policy and planning document, published by COMNAVAIRSYSCOM, and produced to give direction and guidance necessary for the acquisition and operational support of Naval Air Systems and equipment. As such, these documents are used by NAVAIR, NAVICP, NAVAIR field activities, fleet commands for support planning, budgeting, and for other actions related to procurement, distribution, provisioning, replenishment, and maintenance of the system and equipment. PPDs include: (1) quantitative planning data concerned with procurements, delivery schedules, installation schedules, inventories, and planning factors; (2) policy statements concerned with material support, training, and maintenance; and (3) other related planning data, as appropriate. PPDs are revised to reflect significant changes that occur in a program. Addressees assist in ensuring that the PPD presents a viable, useful plan by reviewing the planning data for accuracy and apprising HQMC (ASL) of recommended revisions. Each PPD represents the CNOs and CMCs approved plan for a given system. Before issuance, the PPD is submitted to the cognizant offices within OPNAV, HQMC and NAVAIR activities for concurrence. Currently three Marine Corps programs are published as PPDs: (1) Marine Aviation Logistics Support Program (MALSP); (2) Maritime Prepositioning Ships Aviation Support Equipment (MPS/ASE) program; and (3) Norway Air Landed Marine Expeditionary Brigade Aviation Support Equipment (NALMEB/ASE) program.

4004. Budgeting and Funding for War Reserve Materiel (WRM). The responsibility for programming, budgeting, and funding for aviation-peculiar WRM differs from that of ground-common materiel. HQMC D/CMC Aviation is responsible for coordinating all AVLOG, including determining requirements and sponsoring development and acquisition of aviation-peculiar end items. HQMC (AVN) reviews the Navy budget process to ensure that approved Marine aviation programs are correctly reflected in the Future Years Defense Plan (FYDP) and the annual DOD budget. Specific aviation WRM responsibilities include:

- Participating in the Chief of Naval Operations' Non-Nuclear Ordnance Requirements (NNOR) Process for determination of class V(A) WRM requirement.

- Providing updated data elements for Marine Corps aircraft and aviation activities to use in NNOR process model computations.

- Assisting the Navy program/acquisition sponsor for designated WRM stocks.

- Coordinating Class V(A) requirements for MPF and landing force operational reserve materiel on amphibious shipping and the appropriate distribution of assets held at DOD Class V(A) materiel stock points.

- Withdrawal of WRM Stocks.

4005. Operational Level Aviation Logistics Support Planning and Prepositioning. At the operational level of war, AVLOG consists of planning for the employment of MPF aviation assets/stores, materiel associated with ground geo-prepositioning programs and utilization of the T-AVB.

4006. Maritime Prepositioning Force and AVLOG

a. Background. A Maritime Prepositioning Force (MPF) operation is the rapid deployment and assembly of a Marine Air Ground task Force (MAGTF) using a combination of strategic airlift and forward-deployed Maritime Prepositioning Ships (MPS). MPF operations are strategic deployment options that are global in nature, naval in character, and suitable for employment in a variety of circumstances. As such, MPF operations provide an essential element in the conduct of national military strategy. MPF operations consist of the airlift of MAGTF and Naval Support Element (NSE) personnel, with some associated equipment, into an arrival and assembly area to join with equipment and supplies carried aboard MPS.

b. Mission. Maritime prepositioning provides the Commander-In- Chief (CINC) of a unified command with deployment flexibility and increased national capability to respond rapidly to a crisis or contingency with a credible force. The purpose of an MPF operation is to rapidly establish forces and support ashore for the conduct of combat operations across the operational continuum. Configuration of materiel aboard MPS affords a CINC an array of employment options. An MPF operation may consist of one ship, and an appropriately-sized Fly-In-Echelon (FIE) such as a Marine Expeditionary Unit (MEU), or at the other end of the scale, all three Maritime Prepositioning Ship Squadrons (MPSRONs) and a Marine Expeditionary Force (MEF). An MPF MAGTF is one component of the Marine Corps rapid response capability triad, which also includes an Air Contingency MAGTF (ACM) and Amphibious Ready Forces. Each component of the triad can be used separately, or integrated together, to further enhance a CINCs available options. MPF operations are economy-of-force measures that allow a deployment of an appropriate force if a crisis arises. MPF offers augmentation capability for amphibious operations, but is not a substitute for amphibious operations due to an inherent lack of forcible entry capability.

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c. Considerations for Employment. The essential requirement for an MPF operation is a permissive environment that allows for the arrival and off-load of ships and aircraft, and the joining of personnel and material. Regardless of the mission assigned for subsequent operations, the following conditions are required to establish the MPF MAGTF ashore:

- A permissive environment from initiation of strategic deployment through completion of arrival and assembly.

- Adequate strategic airlift and aerial tanker support.

- Adequate off-load forces (i.e., MAGTF and NSE) to support the operation.

- Sufficient airfield space for the ACE aircraft, Air Mobility Command (AMC), and Civil Reserve Air Fleet (CRAF) operations and throughput capability to support the intended airflow.

- Ample port/beach area for timely off-load and throughput. The port must have sufficient water depth, adequate overhead clearance, and maneuver room to permit loading/discharging MPS. Beaches and approaches must be evaluated for hydrographic supportability, as well as being swept for mines and other hazards.

- Suitable transportation network between the port and/or beach, airfields, and assembly areas to permit a timely arrival and marrying-up of airlifted units with sea-lifted equipment and supplies.

- Force protection.

d. Command Relationships. The MPF Commander, as the senior commander within the MPF, is responsible for establishing command relationships and the command and control structure for the MPF operation. An MPF is a temporary organization established under command of an MPF commander by a CINC. The MPF is typically comprised of a MAGTF, a Naval Task Force (NTF) consisting of a NSE and the MPSRON, and any other elements as determined by the MPF commander and subordinate commanders. Alternative MPF organizations may be required, depending on the mission. Any MAGTF is able to employ the equipment and supplies contained in the MPSRON. The Commander, Naval Task Force (CNTF) and staff originate from a standing Navy organization complete with command and control capabilities. The MPF commander may be a joint task force (JTF) commander, subordinate unified commander, functional component commander, service component commander, or subordinate naval commander. The MPF commander is the commander delegated overall responsibility for conducting an MPF operation, and has operational command over forces assigned to the MPF as well as the authority to exercise general direction of the supporting effort. The MPF commander employs and deploys MPF forces. The following tasks are performed by the MPF commander at the direction of a CINC or other appropriate authority:

- Exercise operational control (OPCON) of all forces assigned the MPF.

- Issues initiating directive, if directed to do so by the CINC.

- Establishes command relationships within the MPF.

- Designates the time to commence movement of the MPSRON and the FIE.

- Coordinates disposition instructions for forces upon completion of the MPF operation.

- Coordinates intelligence collection requirements for the MPF, processes intelligence information, and disseminates intelligence to subordinate commanders.

- Designates the Force Protection Officer, establishes a Force Protection Operations Center, and assigns force protection requirements to the various elements of the MPF. Also undertakes functions as the Landward Security Officer or Seaward Security Officer when, appropriate.

e. Concept of MPS Aircraft Support. The three key logistical support elements spreadloaded among each MPSRON is aviation SE, Class V(A) ordnance and expeditionary airfield (EAF) assets. The following describes how these assets, combined with others aboard the FIE, come together to provide complete logistics support during the first 30 days of an MPF MAGTF operation.

1) Each MPS contains tailored organizational-level (O-level) common support equipment (CSE), peculiar support equipment (PSE) and minimal intermediate-level (I-level) CSE to support the MPF MAGTF *pre-assigned* mix of aircraft. When deployed, each ACE will provide tactical air support for a Marine Expeditionary Brigade (MEB) size MAGTF. Each MAGTF will have the capability for independent deployment or, if the situation dictates, the ability to join up and be composited to form a larger amphibious force.

2) ACE fixed-wing (FW)/rotary wing (RW) aircraft will be Flight Ferried (FF) directly to the theater of operations supported by AMC aerial tankers and cargo aircraft. The remainder of the FIE will be flown into the theater of operations via AMC/CRAF aircraft and will include: squadron personnel (i.e., maintenance and support crews), representative Fly-in Support Packages (FISPs) contained in MFs, O-level SE (i.e., non-custody coded items (N-coded)), and minimal I-level SE required for initial aircraft maintenance operations (i.e., tow tractors, mobile electric power carts, hydraulic servicing carts, etc).

3) Upon arrival and off-load of MPSs, each aircraft squadron assigned to the MEB ACE, will "link-up" and take custody of the remainder of the CSE/PSE and Class V(A) required to operate and maintain their respective aircraft. Each MPSRON contains a tailored SE account for each type of aircraft assigned to the MEB ACE, which is comprised of SE custody coded items P, L, and M. When the SE loaded aboard MPS is linked up with the aviation SE transported into the theater of operations via the FIE, it comprises all CSE/PSE required to operate each T/M/S aircraft during the first 30 days of combat.

4) Each MPSRON also includes minimal FW and RW Facility Equipment (FE) contained in MFs. This FE, or I-level SE, is used to support I-level support functions common to FW and/or RW aircraft (i.e., tire/wheel build-up, battery maintenance, cryogenics, etc.). The FE loaded aboard MPS is operated by designated MALS detachment personnel and is designed to support ACE aircraft until the arrival of the host MALS via the T-AVB. Each host MALS will deploy with a tailored I-level Common Contingency Support Package (CCSP) and a Peculiar Contingency Support Package (PCSP) required by each type aircraft the MALS is designated to support. Upon the establishment of the host MALS in the theater of operations, each MEB ACE will be capable of sustained combat operations for up to 90 days.

5) EAF equipment is included in each MPSRON to support FW and RW aircraft. The concept of employment is to spreadload EAF equipment among each MPSRON ship, giving each ship a core capability of airfield lighting, expeditionary arresting gear and AM-2 landing matting. Combining the assets of all three ships gives the ACE Commander a 4,000' runway, parking for 75 to 105 combat aircraft, airfield lighting, arresting gear and optical landing systems. The EAF equipment aboard MPS is installed,

operated and maintained by designated Marine Wing Support Squadron (MWSS) detachment personnel and is configured to support ACE aircraft until the arrival of the host MALS. Establishment of the host MALS in the theater of operations gives the MEB ACE a sustained EAF capability.

4007. Ground Geo-Prepositioning Programs.

a. Background. The Norwegian Air-Landed Marine Expeditionary Brigade (NALMEB) is the Marine Corps only land-based prepositioning program that includes aviation SE. The NALMEB Program includes SE located at two sites within Norway. Where possible, the prepositioned SE has been tailored for use in an arctic environment. The NALMEB Program is relevant to the tasks and missions of the North Atlantic Treaty Organization (NATO). These tasks are outlined in NATO's Strategic Concept and supports continued United States commitment to the defense of Norway, support for regional stability, and strategic balance in Northern Europe.

b. Mission. The NALMEB Program has been designed to enhance Marine Corps expeditionary flexibility by providing the capability to rapidly deploy a MAGTF to regions critical to the successful prosecution of NATO member conflicts. As such, NALMEB is designed to support the deployment of a MEB-sized MAGTF using strategic airlift to Norway, arriving prior to conducting defensive operations in conjunction with Norwegian and NATO forces, to defeat the aggressor's amphibious, airborne or conventional invasion.

c. Concept for NALMEB Aircraft Support. NALMEB SE is comprised of tailored O-level SE and minimal I-level SE to support the ACE's pre-assigned mix of aircraft and M-21 expeditionary arresting gear. The ACE will have the capability for independent deployment or, if the situation dictates, the ability to join-up and be composited to form a larger amphibious force.

1) ACE FW/RW aircraft will be FF directly to the theater of operations supported by AMC aerial tankers and cargo aircraft. The remainder of the FIE will be flown into the theater of operations via AMC/CRAF aircraft and will include: squadron personnel (i.e., maintenance and support crews), representative FISPs contained in MFs, O-level SE, and minimal I-level SE items required for initial aircraft maintenance operations.

2) Upon arrival in Norway, each squadron assigned to the MEB ACE, will "link-up" and take custody of the NALMEB prepositioned SE required to operate and support their respective aircraft. The MWSS assigned to support the ACE will take custody of, and install, the M-21 arresting gear (as required). When the SE located in Norway is linked-up with the SE transported into the theater of operations via the FF/FIE, it will comprise all SE required to operate each type aircraft during the first 30 days of combat operations.

3) NALMEB SE also includes minimal FW/RW FE. This FE, or I-level SE, is used to support I-level support functions common to FW and RW aircraft. The FE

located in Norway is operated by designated MALS detachment personnel and is designed to support ACE aircraft until the arrival of the host MALS via aircraft or by a T-AVB. Each host MALS will deploy with tailored CCSP and PCSPs required by each type aircraft the MALS is designated to support. Upon the establishment of the host MALS in the theater of operations, the MEB ACE will be capable of sustained combat operations for up to 90 days.

4008. Aviation Logistics Support Ship (T-AVB). In addition to MPF/NALMEB, aircraft that are part of a MAGTF ACE can also be supported by one (or both) of the T-AVBs. The following information will provide a basic understanding of the purpose and capabilities of the T-AVB. Operational planning for the use of the T-AVB entails embarkation, deployment, execution, and redeployment phases of an operation.

a. Mission. The primary mission of the T-AVB is to provide dedicated sealift for the movement of a MALS to support the rapid deployment of an expeditionary ACE. In execution of the primary mission, the T-AVB is configured to provide either an operational MALS afloat, or fully loaded with MFs intended to be off loaded in the operational theater. A third configuration is maximum loading of MFs, deployment to the operational theater, partial off loading of MFs, and further operations as an seabased MALS platform. Ultimately, the chosen configuration will be dependent upon MAGTF mission requirements and Commander's guidance. The secondary mission of the T-AVB can be to provide for resupply in a conventional container or roll-on/roll-off (RO/RO) configuration.

b. The Ship. A T-AVB is a C5-S-78A Seabridge class, commercial, combination roll-on/roll-off (RO/RO), and Lift-on/Lift-off (LO/LO) cargo ship adapted by Maritime Sealift Command (MSC) for use by the Marine Corps. T-AVB-3 (SS WRIGHT), is home-ported in Baltimore, Maryland while T-AVB-4 (SS CURTISS) is home ported in Point Hueneme, California (see figure 4-1). Both T-AVBs are maintained in a five-day

Figure 4-1 SS CURTISS (T-AVB 4)

Reduced Operating Status (ROS-5) by the Maritime Administration (MARAD). The ROS-5 status allows for the a transition to full operating status within 120 hours. A civilian commercial U.S. Merchant retention crew is stationed aboard each ship to monitor equipment conditions and conduct vessel maintenance and repair. When activated, the ships will be operated by MSC with civilian manning. Upon activation, the ship will be operated by MARAD under the operational command of the MSC.

c. Ship Modifications. A number of modifications were made to the Seabridge class ships to support an embarked operational MALS consisting of up to 300 MFs and approximately 325 Marines. Some of these modifications include:

- Cabin Structure. A new cabin structure was added to provide MALS personnel billeting and messing accommodations. The T-AVB can accommodate the ship's 41 member crew, 300 troops, and has 25 additional accommodations for senior Marine personnel.

- Helo Platform. A helo deck and control station, certified for day and night visual flight rules (VFR), were added above the main deck and are capable of supporting aviation evolutions of all DoD type helicopters. The platform is located on the upper deck at the bow of the ship. It is capable of accommodating a CH-53E in all landing and take-off conditions, to include emergency parking during storm conditions. The purpose of the helicopter deck is to handle the transfer of personnel and cargo.

- Power Distribution System for the MFs. MALS SE required to be operational enroute will be powered in part by embarked generators connected to the T-AVB's electrical distribution system. Additionally, the ship has a 1500KW generator which provides stable power.

- Diesel Fuel Marine System for the generators that are brought onboard and operated.

- Administrative work space for the host MALS administration, operations and embarkation sections.

- Medical Facilities. A Medical Treatment room capable of providing limited emergency care and a six bed Medical Ward.

- 1MC intercom system has been added throughout the ship, including the holds that normally contain maintenance facilities.

- Fire Detection and extinguishing systems.

- Hazardous Material (HAZMAT) Storage. Although the ship is not specifically configured for HAZMAT, these materials may be transported in "marine use approved" tank containers, and in lesser quantities as "mobile loaded" cargo in approved containers, provided the containers are stored in accordance with existing codes.

- Compressed Air. Outlets are available on the main deck as well as on the second deck. Sufficient hoses must be embarked by each work center that require compressed/pneumatic air.

- Water. Water hookups for MFs that require water (i.e., battery locker) are located between holds 4 and 5 on the main and second decks. Hoses must be embarked by using unit.

d. Mobile Facilities (MFs). The MFs (8’x8’x20’ vans) used by the MALS conform to International Standardization Organization (ISO) container dimensions and are configured to perform a multitude of missions. Operational MFs be can configured doublewide when embarked aboard the T-AVB. In addition, access modules (used to gain access to MFs stowed in the lower holds) are used to access MFs that are complexed for I-level supply support aboard the ship. The MFs can be outfitted with shelves for storage or as shelters for SE. MFs required for use will be identified by serial number and special requirements (air, electricity, and water) needed within the facility to sustain operations. These requirements must be identified early in the deliberate planning process and well prior to load plan development.

e. Planning for the T-AVB. Planning for the deployment and employment of T-AVB requires the development of load plans in response to existing OPLANs/CONPLANs where sizes of forces, level of conflict and geographical location are assumed. However, planning for T-AVB deployment must take into consideration several unique planning factors. Aviation logistics T-AVB planners must be fully integrated into the overall planning process to determine the means by which the T-AVB may best be tailored to support mission requirements.

(1) Activation. When request for ship activation is approved, a civilian crew is hired, systems are brought on line, and the ship sails to arrive at the Sea Port of Embarkation (SPOE) for MALS loading within 120 hours of activation.

(2) Modes of Operation. The T-AVB’s unique capabilities allow the task-organized MALS to support various scenarios. Three basic modes of operation exist for the T-AVB: Operational Mode, Transport Mode, and Combination Mode.

(a) Operational Mode. Using the T-AVB in the Operational Mode, MFs and personnel of the MALS are embarked aboard the T-AVB to provide selected, sea-based, expeditionary AVLOG support to the ACE. In this mode, approximately 300 containers (MFs, reefers, flatracks, etc.) and 42 access modules can be loaded on the T-AVB; 186 of which may be fully powered and operational MFs.

(b) Transport Mode. Using the T-AVB in the transport mode, MFs and personnel of the MALS are embarked aboard the T-AVB to provide maximum, land-based expeditionary AVLOG support to the ACE when off-loaded ashore. In this mode, approximately 684 containers can be loaded on the T-AVB; however, none of these MFs may be fully powered or operational until off-loaded and “complexed” ashore.

(c) Combination Mode. Using the T-AVB in the combination mode, MFs and MALS personnel are embarked aboard the T-AVB to provide selected sea-based and maximum land-based expeditionary AVLOG support to the ACE, simultaneously. In this mode, the number of MFs that can be loaded on the T-AVB and the number that can be powered and operational will depend on the desired support concept required by the ACE Commander.

f. T-AVB Load Planning. Detailed contingency planning in support of the T-AVB is considered essential in accomplishing the mission. Planning for each OPLAN, in which the T-AVB could be activated, will require separate load plans. When the T-AVB is activated, a review of the load plan will determine whether or not adjustments are required. All shortages and /or deletions/modifications must be identfied, with appropriate corrective action taken. The evaluation of the load plan (developed through the use of TALPS) will require that the weights of equipment, by category (MF, bulk, etc.) to include dimensions, be processed through the ship's on-board computers to determine "trim" characteristics of the ship. Once the load plan has been evaluated and adjustments made any significant changes in the amount and/or type of equipment to be embarked will require reevaluation.

Upon activation, cargo to be embarked aboard the T-AVB can then be sequenced to the pier for loading. Civilian cargo handlers can be provided by the MSC to load the ship or it can be loaded by MALS personnel. Upon receipt of a mission, a MAGTF Commander will, through either deliberate or crisis-planning functions, develop a course of action, force structure, and an echelon or phase order in which forces will arrive in the theater of operations. When the planning process is completed, task-organization and organization of forces for deployment will commence. Deployment planning is based on the tactical requirements of operations and force time-phasing requirements. These requirements determine marshaling, staging, embarkation, and movement plans. It is during this time that the ACE task organized FW/RW host MALS is designated, and preparation for deployment begins. The concepts and procedures used by the MALS for the organization for deployment/employment of the specific types of logistics support they provide supports this task-organized, time phased MAGTF deployment method.

g. Actions. The following are the logistics actions that occur within FW/RW *host* and *parent* MALS during pre-deployment organization and preparation of AVLOG support:

1) The MALS of any MAG providing aircraft to the ACE (a *parent* MALS) will identify, prepare for shipment the support package requirements (FISP and PCSP) for the specific type of aircraft being provided, and transfer these support packages to the appropriate *host* MALS. This evolution is controlled and coordinated by the parent MALS Operations department in conjunction with the MALS Maintenance, Supply and Ordnance departments. FISPs are transported to the AOR with deploying aircraft as such, the host MALS will not normally take custody of FISPs until arrival in the AOR.

2) The FW/RW *host* MALS will identify and prepare for shipment resident FISPs, CCSP, and PCSPs. They will receive support packages (FISPs, PCSP(s)) from the *parent* MALS and transfer resident support packages that are not required to a designated remain behind MALS.

3) At this point, both the FW/RW *host* MALS will be logistically task-organized to support the composite ACE. They will be prepared for deployment with their command elements, appropriate support packages, and their organic data processing facilities with logistic and inventory records properly configured.

h. ACE Deployment Coordination. Upon completion of the above pre-deployment logistics action, information concerning lift requirements of the ACE logistics support organizations must be provided up line. This reporting is necessary to ensure that logistics support assets are accurately reflected in the master deployment and execution data of higher headquarters. This information is provided through MAGTF-LOGAIS.

4009. Principles of Tactical AVLOG Planning. AVLOG planning is guided by a set of overarching principles. Each plan, action, organization, report, procedure, and piece of equipment may be defined and measured in terms of these principles and each logistics decision is guided by the application of these principles. They are applicable to all military logistics, and provide the common foundation of joint and Marine Corps logistics doctrine. Both the operational Commander, who needs to know the effective limits of the available logistics support, and the logistics planner, who has to ensure that all the essential elements of the logistics system are incorporated, must understand these principles (see figure 4-2).

a. Responsiveness. *Providing the right support at the right time and at the right place.* This is the most important principle of logistics, because it addresses the effectiveness of the logistics effort, and in war an ineffective effort leads to defeat. Ensuring that adequate logistics resources are responsive to operational needs should be the focus of logistics planning. Such planning requires clear guidance from the Commander to his planners. It also requires clear communication between operational Commanders and those who are responsible for providing logistics support. The operational Commander's concept of operations must be thoroughly familiar with the supporting elements to ensure responsive, integrated support. Responsiveness is a product of logistics discipline, and Commanders and logisticians who consistently overestimate their requirements, in quantity or priority, risk slowing the system's ability to respond.

b. Simplicity. *Avoiding unnecessary complexity in preparing, planning and conducting logistics operations.* Providing logistics support is not simple, but plans that rely on basic systems and standardized procedures usually have the best chance for success. The operational Commander can simplify the logistics task by maintaining cognizance of the available logistics capabilities, communicating clear priorities, and establishing support requirements based on current and accurate data.

c. Flexibility. *Adapting logistics support to changing conditions.* The dynamics of military operations are such that change is both inevitable and rapid. Logistics must be flexible enough to support changing missions; evolving concepts of operations; and shifting tactical, operational, and strategic conditions. A thorough understanding of the Commander's intent enables logistics planners to support the fluid requirements of operations. In striving for flexibility, the aviation logistician considers such factors as alternative planning, anticipation, reserve capabilities, and redundancy.

d. Economy. *Effective employment of logistics support assets.* Logistics assets are allocated on the basis of availability and the Commander's objectives. Effective employment requires the operational Commander to decide which resources must be committed and which should be kept in reserve. Additionally, the Commander may need to allocate limited resources to support conflicting requirements. The prioritization of requirements in the face of limited forces, materiel, and lift capability is a key factor in determining the logistics feasibility of a plan. Common user materiel, facilities and services may be sourced through joint, combined, or commercial providers at significant savings in transportation, stocks and facilities. While certain redundancies may be necessary to bolster responsiveness and survivability, reduction in the logistics "footprint" compounds savings by diminishing the requirement to support and protect larger logistics operations/assets.

e. Attainability. *The ability to acquire the minimum essential logistics support to begin operations.* The difference between this minimum essential level of support and the Commander's desired level of support determines the level of risk inherent in the operation from a logistics viewpoint. The accurate determination of the minimum requirements, and the time it will take to reach that level given the available resources, allows the Commander to determine the earliest possible date for the commencement of operations. The principle of attainability allows the commander to pursue a higher level of logistics confidence, but an operation undertaken without meeting the minimum needs determined under this principle is destined to fail.

f. Sustainability. *Ensuring adequate logistics support for the duration of the operation.* Sustaining forces in an operation of undetermined duration and uncertain intensity is a tremendous challenge. Forces may operate with a diminished level of support for some time, but every means must be taken to maintain minimum essential support at all times. Sustainability derives from effective planning; accurate projections or requirements;

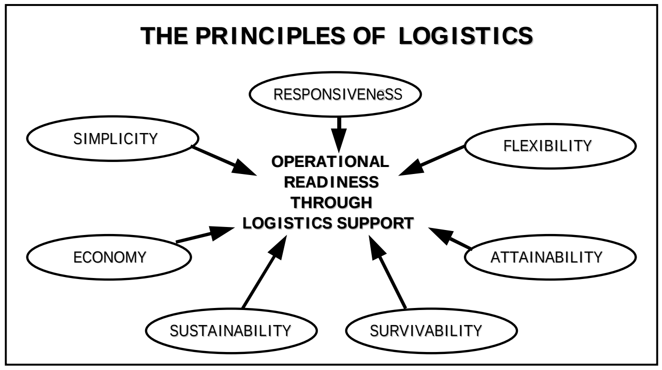

Figure 4-2 Principles of Logistics

careful application of the principles of economy, responsiveness, and flexibility to provide required support; and successful protection and maintenance of the lines of communication. Additionally, sustainability is dependent on discipline within the operating forces when establishing requirements and expending limited resources.

g. Survivability. *Ensuring the functional effectiveness of the logistics infrastructure in spite of degradation and damage.* Logistics forces, sites, transportation modes, lines of communication, and industrial centers are all high-value targets that must be protected. Ships, aircraft and airfields may be vulnerable to direct attack by enemy forces or terrorists. Similarly, these assets and the systems that utilize them are subject to disruption by natural disaster, weather, communications failures, civil disobedience, contract and labor disputes, legal challenges, and the political decisions of other nations. Survivability requires a robust and diverse logistics system capable of sustaining forces in the face of any obstacle. Dispersion of installations and materiel, maintenance of alternate modes of transportation and lines of communication, redundant logistics communication systems, adequate stock levels, reserves of equipment and personnel, phased delivery, and alternate sources of supply can all support survivability.

4010. Tactical Level AVLOG Support Planning. This section addresses the development of a Concept of AVLOG Support and demonstrates a method of how to approach concept development. Conceptual planning establishes goals, objectives and broad schemes for achieving them. For the aviation logistician, conceptual planning means matching requirements (goals and objectives aligned to operational concept) to all available resources and capabilities (broad logistics scheme). Initially, the planner will readily identify “predictable requirements” including aeronautical spare parts (based on historical usage data, deployed level of repair, pipeline times and safety levels), quantities of aircraft munitions (derived from aviation munitions expenditure formulas per sortie/mission), and bulk fuel (historical aircraft fuel hourly consumption rates). These predictable requirements to enable and sustain aircraft readiness make the initial aspects of AVLOG planning a quantitative drill. The predictive nature of logistics requirements planning however, is not the challenge in AVLOG concept development.

Beyond predictive analysis, AVLOG concept development is a creative blending of many ingredients against complex, situationally unique factors. The blending of these factors can take many forms in the development of an AVLOG support concept as there is no correct method to blend these and no technically precise final concept. The concept must encompass the full spectrum of AVLOG processes, procedures, systems, and activities and, concurrently, will be framed with risk and uncertainty (see Figure 4-3).

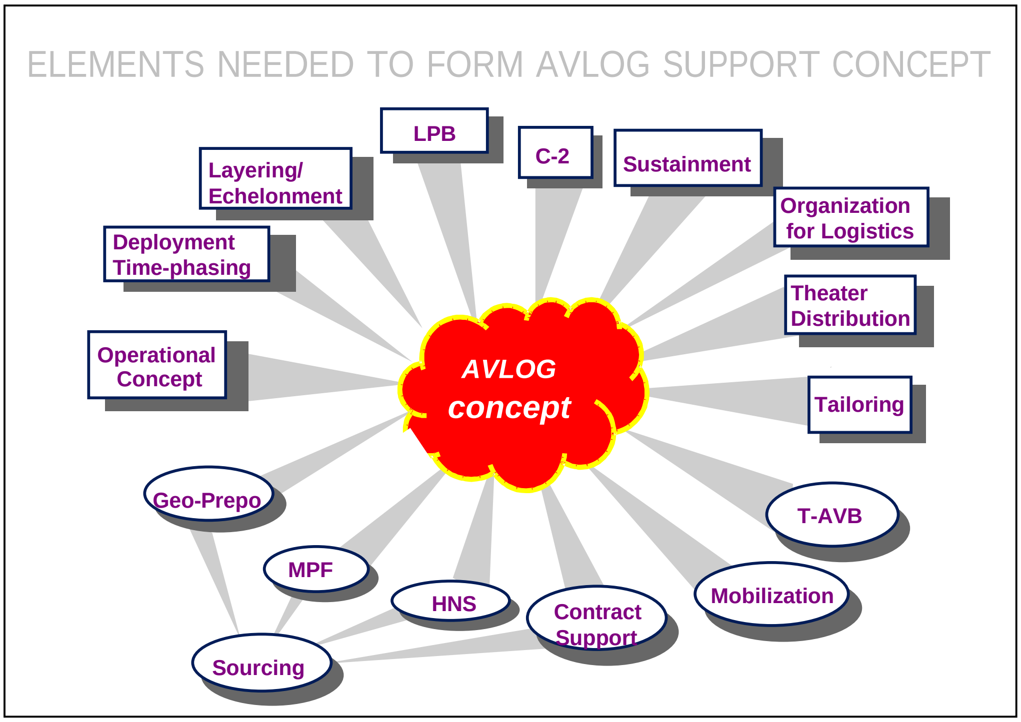

Figure 4-3 Aviation Logistics Considerations

The complexity of AVLOG concept development is best simplified when conducted within some sort of organized framework or structured methodology, such as the sequential steps of the Marine Corps Planning Process (MCPP), and is conducted in parallel with operational planning.

During concept development, aviation logisticians at the MEF, Wing, and MALS must address both the tactical and operational levels of AVLOG support. The MEF planner seeks to assess the impact to tactical logistics that the operational support scheme will trigger while the MALS planner should understand the role of the MALS in the operational context. The MALS planner is oftentimes the operational logistician for the MAGTF ACE therefore, it is imperative that the MALS planner have a firm grasp of operational level AVLOG planning. These levels of logistics entail force deployment planning, sustainment planning, and serve as the foundation for subsequent detailed and functional AVLOG planning.

a. Concept Development Process. Ideally, the development of the AVLOG support concept should begin as early in the planning process as feasible. The AVLOG planner should aim to match all AVLOG deployment and sustainment activities with the requirements of the operating forces of the MAGTF ACE. By participating in the early stages of the planning process, the aviation logistician gains relevance and credibility with the operational planners, obtains situational awareness and is able to compile realistic data to support deliberate or crisis action planning requirements.

1. Mission Analysis. The mission for AVLOG is derived from the higher command's mission, the ACE mission statement, and the ACE Commanders' Intent. For AVLOG to be a force multiplier to the ACE, the planner should derive from the Commander's Intent a "center of gravity" for AVLOG in support of the ACE employment concept and an "AVLOG main effort." The center of gravity from a logistics perspective will be the aspect of logistics that best enables, in fact multiplies the combat capability that is the focus of effort within the operational Course of Action (COA). For example, the AVLOG center of gravity could be the theater-operational-level flexibility gained from the operational employment of the T-AVB or it could be the rapid force closure with immediate sustainment of Remote Expeditionary Support Package (RESP). By the same token, the AVLOG planner should also seek the MAGTF ACE's own weakness/critical vulnerability. The planner should then ask, "how vulnerable is our own center of gravity?" In example, "will our own Ammunition Storage Point (ASP) become a large and lucrative target for the enemy?" Our own weaknesses (or critical vulnerabilities) may be the constraint of in-theater throughput (port/airfield), the beddown plan, or rear area security for our AVLOG sites. The result of asking these questions and after analysis of higher and supported commands' missions and intent will be the AVLOG mission statement.

2. Concept Development. The AVLOG support concept(s), first and foremost, must focus on the COAs that are formulated by the Operations Planning Team (OPT) and operational planners. Again, logistics planning should parallel operational planning/COA development. At this stage, the AVLOG planner will develop a "*draft*" support concept for each COA and/or as a staff estimate(s) of supportability. Detailed and functional support planning, which adds depth and fidelity to the draft concept, occurs only after the commander selects a final COA.

To support each COA, an AVLOG support concept is designed. As more *art* than *science*, there is no prescribed set of rules or preferred methodology that is commonly used to form the "*AVLOG Concept of Support*." What follows is a model that ensures: (1) a minimum set of key *"conceptual planning considerations"* that are employed in the thought process and (2) an "evaluation" process is injected which uses some sort of success criteria. The success criteria used in this model are the *"principles of logistics."*

a. Conceptual Planning Considerations. The following planning considerations should be viewed as a system of interrelated factors. Too much focus and emphasis on any one element can cause sub-optimization at the cost of others, degrading the entire support system that will be put in place for theater-wide AVLOG support. The *art* is blending all of these factors to obtain synergy in the final solution. Planning aspects may include the following:

1) Deployment Time-Phasing. This first consideration asks, "what elements of AVLOG will be required to enable the initial aviation combat capability?" This is the force deployment planning aspect of Force Deployment Planning and Execution (FDP&E). For AVLOG FDP&E, *MALSP* greatly facilitates this process, but does not provide the total AVLOG solution. Establishing the deployed AVLOG "requirements" with associated "required delivery date" in the operational concept, reverse planning methodology will step the planner sequentially backward through all the required activities/events that must be accomplished to "close" the required elements where and when needed. For example, to enable 16 AV-8Bs to begin surge flight operations on day C+10, the AVLOG planner would define the requirement to enable sorties, and then plan backwards through a sequence of events. Note, that in addition to the MALSP packages, aviation munitions and geo-prepositioning flows to marry up with RESPs may have to be planned to arrive at the forward operating base (FOB). Events that must occur include the deployment of "offload preparation party (OPP)" to prepare geo-prepositioned equipment (see Figure 4-4).

To enable a deployed MALS to arrive in theater via T-AVB by C+35 requires extensive and detailed reverse planning which will manifest event time windows. Planning backward, the AVLOG planner will discover a point at which the deploying MALS will

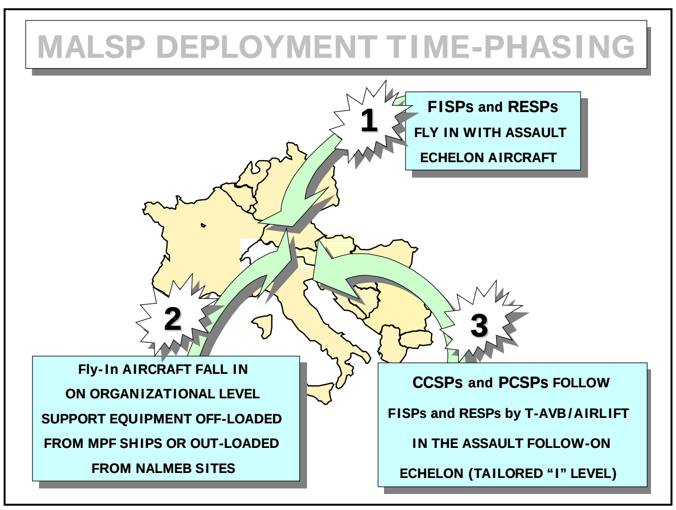

Figure 4-4 Aviation Logistics Deployment Time Phasing

have to completely shutdown support activities. Stand down of the MALS in preparation for embarkation will have to be closely scrutinized and coordinated due to an anticipated last minute surge of squadron support requirements. A premature loss of critical support functions at this juncture will be detrimental to the overall success of the ACE *mount out*. By ensuring that there are no unusual requirement for MALS support above and beyond identified aircraft assembly repairs, the MALS will have an identifiable milestone as to when, and to what degree, support activities may cease. The disposition of assets that are held in the MALS repair cycle must be determined early on in the embarkation process. A cutoff date for component maintenance actions must be determined soon as possible following the announced Warning Order. Maintenance activities must coordinate closely with supply activities to ensure the orderly return of awaiting parts (AWP) components from the various divisions. All in-work/awaiting maintenance (AWM) components should be embarked and extreme care must be exercised by the MALS to ensure components are reassembled to their fullest extent possible and have all the appropriate documentation securely attached (see figure 4-5).

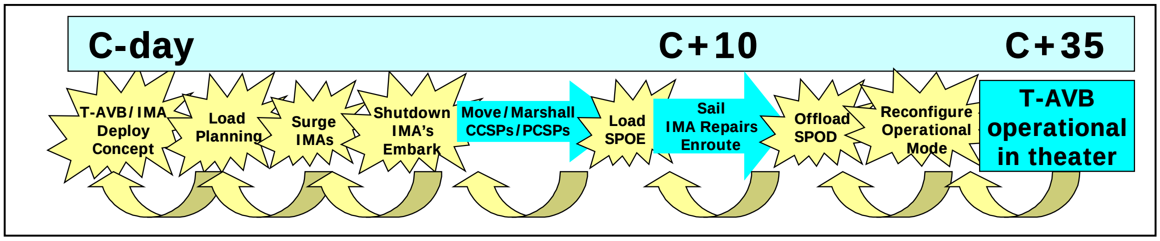

Figure 4-5 Aviation Logistics Reverse Planning

Shut down of the MALS in preparation for embarkation must be closely coordinated. Sufficient time must be allocated for the disassembly of the MF complex, pack up of embark boxes and movement to the SPOE/APOE. Dismantling of the MALS must be sequenced to ensure continued AVLOG support is available for aircraft squadrons. This is especially critical due to a likely "surge" effort as supported squadrons prepare to deploy. This will require close coordination among the various MALS squadrons that will be embarking aboard the T-AVB, coordination internal to each MALS, and coordination with each of the deploying/supported squadrons. Each MALS must continue to support the deploying squadrons until the time they have actually commenced the FF.

The successful end-state of the first planning consideration is “force closure.” Force closure is the point in time when a supported Commander determines that sufficient personnel and equipment are in the assigned area of operations to carry out assigned tasks.

2) Echelonment/Layering. This consideration asks the question “how much capability is critical *forward* versus what can economically remain consolidated well removed from the combat airfields?” The “*forward*” versus ”*rear*” support dilemma is primarily a question of needed support capability that can feasibly be deployed forward. While support capabilities are contained in three levels, this planning consideration is concerned with the I-level but, may also include D-level, In-Service Repair (ISR) teams assigned to support the MALS and supported squadrons .

The layer needed nearest to the flightline is what is used to service aircraft, maintain aircraft operations, handle and load munitions. While it is preferred to have the RESP/FISP at the same operating base, it may not always be feasible. For example, there may be more than one FW base requiring support from only a single site MALS. The

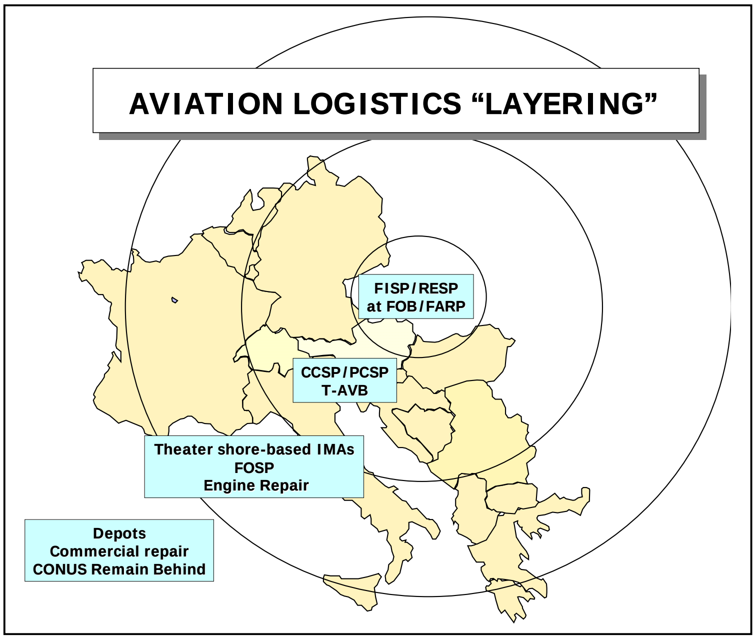

Figure 4-6 Aviation Logistics Layering

next layer of support, the CSPs, may operate at a "*rear*" and centralized position removed from the outlying operating sites, providing a more in-depth degree of MALS support capability and enabling sustainment to the RESP/FISP. After the CSPs, the support concept would identify follow-on requirements (i.e, FOSP) and/or in-theater facilities to augment increased I/D-level repair capabilities (i.e, 1st degree engine repair). Finally, the furthest removed layer of support is the out-of-theater that must flow through the strategic transportation channels. Sources of support in this layer are the rear elements of the home-based MALS, the industrial and depot facilities, and commercial repair sites (see figure 4-6).

The "*forward-versus-rear*" dilemma is marked by a series of trade-offs. While it may seem desirable to place maximum capability near supported aircraft in terms of "support responsiveness," it will not be feasible in terms of strategic lift. A constant analysis must be made as to depth of spares versus repair capability brought forward. The more expeditionary (the "lighter") the logistics capability, the more reliant the logistics concept becomes on either a "layered" solution or one that heavily relies upon the strategic logistics pipeline.

3) Strategic Transportation Pipeline. The next consideration is the channel for both replenishments and retrogrades into and out of the deployment theater logistics pipeline. The flow of logistics support to the operating forces has often been depicted as a flow through a pipeline channeling support from sources (most commonly CONUS-based), through nodes (bases, stock points, sites, etc.), to the end user (forces). Personnel and materiel flow into SPOEs/APOEs via strategic lift. This strategic phase of transportation/distribution ends at APOD/SPOD in the theater (see figure 4-7).

Transportation modes for the pipelines are selected based on mission need capability, transportation priority, regulatory restrictions, and available capacity. Regulatory restrictions include transportation and storage issues such as HAZMAT regulations, security and custody issues such as registered mail regulations, and customs clearance requirements. Strategic transportation choices include a range of military and

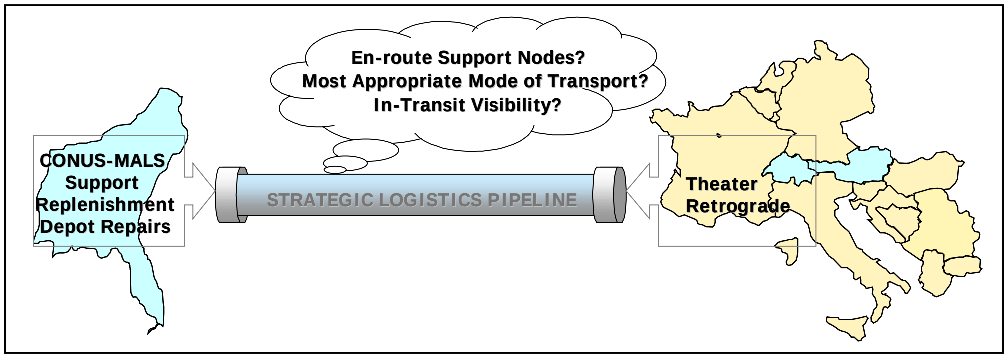

Figure 4-7 AVLOG Strategic Pipeline

commercial options, both foreign and domestic. Nodes and bottlenecks must be identified in the strategic and inter-theater transportation channels and consideration of placing MALS supply detachment(s) and other capabilities at certain points along the transportation channels (main and alternates should be identified) to alleviate bottlenecks. Retrograde requires a reversal of the flow through the network and involves the same considerations, participants, and resources. Consideration must be given to alternate routing of retrograde, however, as the actual flow may progress via en-route repair sites that may serve as designated repair points. In-transit visibility (ITV) is vital to managing the logistics flow, and supports decisions on either end, and in both directions of the pipeline.

4) Tailoring. Despite the standardization of the MALSP CSPs, some degree of tailoring will be required to best match support to the operational employment scenario. Factors that will influence tailoring decisions are lift constraints, immediate force closure requirements, and alternate sourcing of capabilities. While the FISP, PCSP and CCSP are rarely tailored, the RESP and FOSP are in themselves tailored entities. The tailoring of the RESP is determined by the immediate SE needs during the first 30 days of support (RESP assumes that prepositioned SE is not available) and strategic airlift constraint. Similar tailoring decisions are made with the FOSP when planning MALS requirements beyond 90-days.

Tailoring decisions are also made in the deployment of the MALS when task-organized to support the MAGTF ACE. The transfer of PCSPs between parent and host MALS will assist in tailoring the forward-deploying MALS however, other questions must be answered in the transfer process. These issues include transfer(s) of financial accounts between MALS, the tailoring of the tables of organization and equipment (T/O&E) for the T-AVB embarkation, the designation of "*forward*" and "*rear*" command elements, reserve augmentation, etc.

MALSP aims to reduce, if not eliminate altogether, the need for tailoring and simplifies the transfer process between *parent* and *host* MALS. Even with MALSP there will always be a need to plan for "non-standard" solutions in deliberate and in crisis action situations; the AVLOG planner should always be able to improvise in unique, fast-moving and constrained situations. Likewise, the AVLOG planner should equally be able to assess the "costs" of tailoring.

5) Logistics Preparation of the Battlespace (LPB). This consideration is closely tied to the Intelligence Preparation of the Battlefield (IPB) used by the Commander and his staff to develop COAs. In fact, some of the Commander's Critical Information Requirements (CCIRs) needed to develop a course of action may be logistics-oriented information requirements, such as throughput at a key node. LPB is a complete assessment of the theater for key aspects and features that are crucial in the overall logistics support concept. These include the APODs and SPODs, main/secondary lines of communications (LOCs) and main supply routes (MSR), aircraft beddown sites and operating airfield capabilities, theater distribution factors, resource availability, basing rights, staging areas, real estate requirements, security concerns and force protection. Gaining situational awareness should include "time-space-distance" assessments unique to the theater and to supporting the operational concept. A well developed LPB will make use of all available information sources from the S-2/G-2, theater logistics representatives, and secure Internet homepages. While LPB should be one of the first actions/considerations in the planning process, it will most directly affect the next consideration: theater distribution.

6) Theater Distribution. Theater (or intra-theater) distribution is the flow of personnel, equipment, and materiel within the theater of operation that enables the MAGTF ACE to accomplish its tactical missions. Essentially, it entails plugging into or establishing an effective transportation system, supporting the arrival and assembly of personnel and equipment as they reach an area of operations, and enabling sustainment activities for the duration of employment. The MAGTF ACE, through the Naval theater logistics agent *and* the MEF Combat Service Support Element (CSSE), will join, establish, and/or modify the theater distribution system in order to sustain the MAGTF ACE. Theater distribution must plan for and support both replenishment support and retrograde evacuation. Lessons learned from past deployments indicate that the *Achilles' heel* of the AVLOG support concept has been how poorly theater distribution has supported retrograde evacuation.

The theater distribution network consists of the physical and resource networks. The physical network of the distribution system consists of the quantity, capacity, and capability of fixed structures and established facilities available to support distribution operations. It includes roads, airfields, railroads, hardened structures (such as warehouses or storage facilities), seaports, inland waterways, and pipelines. The resource network of the distribution system consists of the personnel (uniformed and civilian, host nation, government, military and contractor), organizations, materiel and equipment, operating within the physical network of the distribution system. Intra-theater lift is the sum of all modes of transportation in a theater of war available to move, sustain, and redeploy the MAGTF ACE; it consists of the trucks, busses, trains, aircraft, pipelines, ships, lighterage, and ferries.

Class V(A) receipt, storage, and onward movement within the theater is viewed as a major concern for the *ground* logisticians unfamiliar with handling Class V(A). It is imperative to address in the distribution plan where to position subject matter experts as "expeditors" within tactical assembly areas and within the theater main throughput nodes to ensure Class V (A) is properly handled to effectively sustain the ACE.

7) Sourcing. The AVLOG planner must seek all possible sources of support, almost certain constraints (limited strategic lift) and/or equipment shortfalls may dictate the need to access alternate sources. Sources that must be planned include prepositioned equipment and supplies (MPF, NALMEB, Prepositioned WRM, in-theater capabilities (Navy afloat aviation support activities, shore-based overseas aviation support activities), cross-service support, contract support, and Host Nation Support (HNS)). The AVLOG planner must emphasize to the supported squadrons that prepositioning will be a primary source for SE and confidence must be gained in the use of these resources. Today's and future planning must also place greater emphasis on the use of host nation, allied, coalition partner, or other foreign support. Civilian contractors (domestic and foreign) directly provide support previously only accomplished by the military services. The difficult task of sourcing preferred munitions (PMs) needed to support the ACE will be accomplished by using afloat assets within the AOR or through global sourcing and demand for strategic lift.

8) Organization for Logistics in Theater. As many of the above planning considerations are developed, the organization for AVLOG support in the theater will begin to take form. The in-theater organization for logistics will identify the number of MALS sites required, the make-up of each MALS site, the lead MALS, the employment concept for the T-AVB, the establishment of a central MALS hub, the requirement for in-theater MALS detachments, and the use of Navy in-theater station and afloat bases. The theater organization will begin to take shape as the beddown plan is finalized, the operational scheme and combat focus of effort is identified, the LPB and in-theater capabilities discovered, and available sources of support/resources are identified.

A key trade-off in this consideration is how *centralized* versus *decentralized* the in-theater organization should be, with Command and Control (C2) and dispersal of resources. Control for in-theater AVLOG distribution should be centralized while economies of scale may drive to consolidated MALS hub concept for certain component repairs. Furthermore, theater organization may look different for different functions/commodities within the AVLOG support concept. For example, the flow for requisitioning via different supply points of entry (POEs), the flow of retrograde, and the flow of replenishments may look far different for different types of end items.

The overall organization for AVLOGs must emphasize the systems approach to the concept development design, blending all resources and available capabilities to provide the most effective and economical (in terms of constraints) solution.

9) Command and Control (C2). Consideration of the C2 aspects of the AVLOG concept entails command relations (who reports to who) and what AISs are used. Command relations must be clearly defined when forward and rear designations are given to deploying MALS, as the MALS are task organized, and as they are assigned in support of a newly formed MAGTF ACE. AVLOG elements may also detach from the parent MALS and deploy afloat, they will normally report to the afloat MAGTF commander who reports to the Navy numbered fleet Commander. Command relations must also be clearly defined as a host MALS will task organize and embark aboard the T-AVB and as the ship arrives into the theater/CINC's AOR. Logistics systems should be employed to facilitate AVLOG support and C2. These systems include the Streamlined Alternative Logistics Transmission System (SALTS) with the use of International Maritime Satellite (INMARSAT), the Naval Aviation Logistics Command and Management Information System (NALCOMIS), and Shipboard Uniform Automated Data Processing System (SUADPS). These systems give each MALS its "*reach-back*" and self-sustaining capability and an organic satellite logistics communication capability. When the MALS support is moved via T-AVB, the NALCOMIS complex/SALTS/INMARSAT will be loaded and operated aboard the ship.

10) T-AVB Employment Concept. Consideration of the T-AVB must begin with the support posture in-theater and how best the T-AVB fits into the theater support organization. This primary concern must then be tempered by the fact that T-AVB is the most effective and economical means for transporting a major portion of potentially deploying MALS CSPs. The T-AVB may therefore, be the best/only opportunity to move CSPs to the AOR. When considering T-AVB employment ask, "how exactly will the T-AVB be employed in theater: pier-side as operational, collocated near a shore-based MALS, or afloat in limited operational mode for a limited mix of aircraft systems?" There is a long list of available employment options, but the decision must be made very early as backward planning shows that key events are imminent. Furthermore, the trade-offs of varying options must be understood. For example, full transport mode equates to a 20-30-day "*black hole*" of no support capability from all the embarked MALS work centers, a potentially far too costly risk to take in support of near-term combat operations.

11) Sustainment Concept. The overall sustainment concept must be a consideration in the plan. Typically, aviation logisticians think in terms of "*pull*" sustainment and resupply (as MALS end-users requisitioning from the Navy supply system) because each MALS brings reach-back and organic requisitioning capability with the CSPs (in some cases with RESP). However, consideration must be given to "*push*" sustainment for certain items and groups of commodities. For example, in the case of aviation munitions sustainment, a push concept from the theater Navy CINC may be the best solution since he has better visibility of theater-wide expenditures and requirements and world-wide asset availability. The push of sourced munitions will be based on the overall requirements matched to a reported daily expenditure rate.

The sustainment concept will also address long-term planning considerations beyond initial 90 days of depth of spares contained within the CSPs. For example, FOSP requirement/flow, follow-on missions for T-AVB, support for branches/sequels in the overall operational scheme of maneuver, analysis of retrograde flow to feed depot/commercial repairs needed to sustain a long-term spares posture. Self-sufficiency and dependency on external sources may also be considered within sustainment planning as the question asked is, "how dependent is the AVLOG concept on external support?" For example, how much reliance is placed on the FSSG for aviation ordnance handling and throughput in the theater?

12) Mobilization. The requirement to activate Reserves may become a key component of the AVLOG concept. Reserves can *back-fill* MALS home stations, can manage remain behind equipment (RBE), support the Fleet Replacement Squadrons (FRSs) while managing the Training Squadron Allowances (TSA), and can augment forces in theater. The mobilization of Reserves is a very complex planning process in and of itself. Understanding mobilization begins with knowledge of command relations of Reserves, the role of the supporting bases and stations (Commander Air Bases (COMCAB)) and CG 4th MAW, and the concepts described in the Marine Corps Mobilization Management Plan (MPLAN).

3. Concept Comparison/Wargaming and Selection. These steps of the MCPP are considered together. In Step 2, the support concept(s) that have been initially designed are only to the degree of detail that parallels the operational COAs. Subsequent concept comparison and wargaming of the AVLOG concepts will be conducted in parallel, or as part of, the COA comparison and wargaming. More likely, the AVLOG concept(s) will be used as "estimates of supportability" for each COA. Selection of the final AVLOG support concept will occur as the final COA is selected.

To assist in AVLOG concept comparison and selection, the "*principles of logistics*" provide a superb means of evaluation. Comparing the principles to the considerations discussed above provides the planner a good model to objectively assess the planned concept.

4. Orders Development. Now it is time for formalizing the outputs of the all the proceeding work and deliberations and to produce the Operations Order (OPORD) or Operations Plan (OPLAN). Published in JOPES format, the OPORD contains the supported ACE basic mission, intent, and guidance. Included will be several key annexes, such as annex A, the task organization (which will define command relations). Annex D is Logistics and the AVLOG logistics concept of support will be an appendix to Annex D. Detailed and functional planning must now be included into the AVLOG appendix. Functional experts (Maintenance Officer, Avionics Officer, Aviation Ordnance Officer, and Aviation Supply Officer) incorporate their own schemes of support as a portion of the overall concept. With sufficient detail, the functional inputs may in fact become a self-contained "tab" to the appendix.

4011. Aviation Logistics Planning and Execution In-depth. For detailed information regarding the processes, functions and responsibilities associated with developing AVLOG concepts of employment, TPFDD development and the use of MAGTF-LOGAIS in support of AVLOG FDP&E refer to MCRP 5-11.1B Aviation Logistics Planning.

Appendix A

Glossary

AA………………………………………………………………………………..Assault Echelon
AAE………………………………………………………………Aircraft Armament Equipment
AAI………………………………………………………………………Asset Activity Identifier
ACC……………………………………………………………….Aircraft Controlling Custodian
ACE……………………………………………………………………Aviation Combat Element
ACM……………………………………………………………………Air Contingency MAGTF
AE………………………………………………………………………………Assault Echelon
AFOE………………………………………………………………Assault Follow-On Echelon
AGS…………………………………………………………………..Aviation Ground Support
AIMD………………………………………………Aircraft Intermediate Maintenance Department
AIS……………………………………………………………Automated Information System
ALD……………………………………………………………..Aviation Logistics Department
AMC…………………………………………………………………………Air Mobility Command
AMO………………………………………………………………Aircraft Maintenance Officer
AMRR…………………………………………………………Aircraft Material Readiness Report
AOR………………………………………………………………………Area of Responsibility
APML…………………………………………………Assistant Program Manager for Logistics
APOD…………………………………………………………………Aerial Port of Debarkation
APOE…………………………………………………………………Aerial Port of Embarkation
ARG…………………………………………………………………Amphibious Ready Group
ASD………………………………………………………………….Aviation Supply Department
ASL……………………………………………………….Aviation Logistics Support (Branch)
ASO……………………………………………………………………Aviation Supply Officer
ASP……………………………………………………………………Ammunition Supply Point
ATE……………………………………………………………………Automatic Test Equipment
ATF……………………………………………………………………Amphibious Task Force
AUTOSERD……………………………………Automated Support Equipment Recommendation
AVCAL…………………………………………………Aviation Consolidated Allowance List
AVLOG……………………………………………………………………………Aviation Logistics
AWM……………………………………………………………………….Awaiting Maintenance
AWP………………………………………………………………………………Awaiting Parts
AWSE…………………………………………………..Aviation Weapons Support Equipment
CAIMS…………………………………Conventional Ammunition Integrated Management System
CCIR…………………………………..………Commander’s Critical Information Requirements
CCSP……………………………………………………Common Contingency Support Package
CFA…………………………………………………………………Cognizant Field Authority
CINC………………………………………………………………………Commander-in-Chief
CMD………………………………………………………Consumables Management Division
CNAL…………………………………………………..Commander, Naval Aviation (Atlantic)
CNAP……………………………………………………Commander, Naval Aviation (Pacific)
CNARF………………………………………………..Commander, Naval Aviation (Reserves)
CNO…………………………………………………………………Chief of Naval Operations

COA…………………………………………………………………………………Course of Action
COCOM……………………………………………………………………Combatant Commander
CONPLAN…………………………………………………………………………Contingency Plan
COSAL…………………………………………………………..Consolidated Shipboard Allowance List
CRAF…………………………………………………………………………Civil Reserve Air Fleet
CSE……………………………………………………………………….Common Support Equipment
CSP……………………………………………………………………Contingency Support Package
CSS……………………………………………………………………………Combat Service Support
CSSD……………………………………………………………Combat Service Support Detachment
CSSE…………………………………………………………………Combat Service Support Element
C2………………………………………………………………………………Command and Control
DCMC(A)……………………………………….Deputy Commandant of the Marine Corps (Aviation)
DLA………………………………………………………………………….Defense Logistics Agency
D-LEVEL…………………………………………………………………………………Depot-level
DOD……………………………………………………………………………….Department of Defense
DSF…………………………………………………………………….……Data Services Facility
DTO……………………………………………………………………………...Direct Turn-Over
EAF…………………………………………………………………………..Expeditionary Air Field
ETS…………………………………………………………………….Engineering Technical Services
FARP…………………………………………………………….Forward Arming and Refueling Point
FDP&E……………………………………………………….Force Deployment Planning and Execution
FE………………………………………………………………………………………Facility Equipment
FF……………………………………………………………………………………………Flight Ferry
FIE………………………………………………………………………………………….Fly-In Echelon
FMC…………………………………………………………………………………Full Mission Capable
FOB…………………………..……………………………………………….Forward Operating Base
FOSP…………………………………………………………………………Follow-On Support Package
FRS………..…………………………………………………………….Fleet Replacement Squadron
FW……………………………………………………………………………………………..Fixed-Wing
FYDP………………………………………………………………..…Future Years Defense Plan
GCCS…………………………………………………………Global Command and Control System
GCSS……………………………………………………………………..Global Combat Support System
HAZMAT……………………………………………………………………..Hazardous Material
HNS…………………………………………………………………..…Host Nation Support
HQMC………………………………………………………………..Headquarters Marine Corps
ICRL…………………………………………………………..Individual Component Repair List
I-LEVEL…………………………………………………………………Intermediate-Level
ILSP………………………………………………………………Integrated Logistics Support Plan
ILSMT…………………………………………….Integrated Logistics Support Management Team
IMA…………………………………………………………………Intermediate Maintenance Activity
IMRL…………………………………………………………….Individual Material Readiness List
INMARSAT……………………………………………………………International Maritime Satellite
IPB…………………………………………………………..Intelligence Preparation of the Battlefield
ISO………………………………………………………….International Standards Organization
ITV………………………………………………………………………………In-Transit Visibility
JOPES…………………………………………….Joint Operational Planning and Execution System

JROC…………………………………………………………Joint Requirements Oversight Council
JTF………………………………………………………………………………..Joint Task Force
LAMS………………………………………………………..Local Asset Maintenance System
LM……………………………………………………………………………Logistics Manager
LOC……………………………………………………………………Lines of Communication
LOGAIS…………………………………………………Logistics Automated Information Systems
LPB………………………………………………………..Logistics Preparation of the Battlefield
MACG………………………………………………………………Marine Air Control Group
MAG……………………………………………………………………..Marine Aircraft Group
MAGTF…………………………………………………………..Marine Air-Ground Task Force
MALS……………………………………………………….Marine Aviation Logistics Squadron
MALSP……………………………………………….Marine Aviation Logistics Support Program
MARFORLANT…………………………………………………………..Marine Forces Atlantic
MARFORPAC…………………………………………………………Marine Forces Pacific
MARFORRES…………………………………………………………..Marine Forces Reserve
MAW……………………………………………………………………..Marine Aircraft Wing
MC……………………………………………………………………………..Mission Capable
MCPP…………………………………………………………..Marine Corps Planning Process
MDL………………………………………………………………………..MAGTF Data Library
MDS……………………………………………………………………Maintenance Data System
MDSS……………………………………………………………..MAGTF Deployment Support System
MEB…………………………………………………………..Marine Expeditionary Brigade
MEF……………………………………………………………………..Marine Expeditionary Force
METCAL………………………………………………………………Metrology and Calibration
MEU……………………………………………………………..Marine Expeditionary Unit
MF……………………………………………………………………………Mobile Facility
MOS…………………………………………………………..Military Occupational Specialty
MPF……………………………………………………………Maritime Prepositioning Force
MPLAN……………………………………………………………………………Mobilization Plan
MPS……………………………………………………………..Maritime Prepositioning Ships
MPSRON………………………………………………...Maritime Prepositioning Ship Squadron
MSC…………………………………………………………………..Maritime Sealift Command
MILSTAMP…………………………..Military Shipping Transportation and Management Program
MTW…………………………………………………………………………Major Theater War
NALAIS…………………………………………………Naval Automated Information Systems
NALC……………………………………………………………Naval Ammunition Logistics Center
NALCOMIS……………….Naval Aviation Logistics Command Management Information System
NALMEB……………………………………Norway Air-Landed Marine Expeditionary Brigade
NAMP…………………………………………………………Naval Aviation Maintenance Plan
NATEC…………………………………Naval Air Technical Data Engineering Services Command
NATO…………………………………………………………North Atlantic Treaty Organization
NAVAIR…………………………………………………………Naval Air Systems Command
NAVICP……………………………………………………...…Naval Inventory Control Point
NAVSEA………………………………………………………Naval Surface Systems Command
NAVSUP…………………………………………..……………Naval Supply Command
NCEA…………………………………………………………Non-Combat Expenditure Allocation

NNOR……………………………………………………………Non-Nuclear Ordnance Requirement
NTCSS…………………………………………………Naval Tactical Command Support System
NTF……………………………………………………………………………Naval Task Force
OCONUS………………………………………………………Outside Continental United States
O-LEVEL…………………………………………………………………Organizational Level
OMA……………………………………………………..…Organizational Maintenance Activity
O&M……………………………………………………………….Operations & Maintenance
OOTW……………………………………………………………..Operations Other Than War
OPNAV…………………………………………………………………….Operations, Navy
OPLAN…………………………………………………………………Operational Plan
OPORD…………………………………………………………………Operational Order
OPP……………………………………………………………Offload Preparation Party
OPSEC…………………………………………………………………Operational Security
OPSO……………………………………………………………………..Operations Officer
OPT…………………………………………………………………..Operational Plan Team
OPTAR……………………………………………………………………..Operating Target
OSD…………………………………………………………Office of the Secretary of Defense
PCSP……………………………………………………………Peculiar Contingency Support Package
P&E……………………………………………………………..……Planner & Estimator
PM……………………………………………………………………………Program Manager
PME………………………………………………………..….Precision Measuring Equipment
PO(E)…………………………………………………………..Plans, Operations (Expeditionary)
PPD………………………………………………………………Program Planning Document
PSE……………………………………………………………..Peculiar Support Equipment
PWR……………………………………………………………..Prepositioned War Reserve
RAMEC……………………………………………..Rapid Action Minor Engineering Change
RBE………………………………………………………………..Remain Behind Equipment
RCM…………………………………………………………Reliability Centered Maintenance
RESP…………………………………………………………Remote Expeditionary Support Package
RMD…………………………………………………………..Repairables Management Division
ROLMS…………………………………………Retail Ordnance Logistics Management System
RO/RO…………………………………………………………………………Roll-on/Roll-off
RRF…………………………………………………………………..Ready Reserve Fleet
RSO&I…………………………………………Receipt Staging Onward Movement and Integration
RW………………………………………………………………………………Rotary Wing
SA/A…………………………………………………………System Administrator/Analyst
SALTS……………………………………..Streamlined Automated Logistics Transmission System
SAD……………………………………………………………..Supply Accounting Division
SAMM…………………………………………………System Administrator Management Menu
SE…………………………………………………………………………...Support Equipment
SECDEF……………………………………………………………………..Secretary of Defense
SECNAV…………………………………………………………………Secretary of the Navy
SERMIS………………………………Support Equipment Resource Managed Information System
SESS……………………………………………………………………...…Support Equipment
SIGSEC………………………………………………………………………….Signal Security
SLRP………………………………………………Survey, Liaison and Reconnaissance Party

SMD…………………………………………………………………..Supply Management Division
SMQ………………………………………………………………...Special Maintenance Qualification
SNAP…………………………………………Shipboard Nontactical Automated Data Processing
SOP…………………………………………………………………..Standard Operating Procedures
SPOD…………………………………………………………………..Sea Port of Debarkation
SPOE…………………………………………………………………..Sea Port of Embarkation
SRA………………………………………………………………….. .Shop Repairable Assembly
SRC……………………………………………………………….…Schedule Removal Card
SRD……………………………………………………………………Supply Response Division
SSD……………………………………………………………………Squadron Support Division
SUADPS-RT……………………Standard Uniform Automated Data Processing System-Real Time
T-AVB…………………………………………………………Aviation Logistics Support Ship
TBA……………………………………………………………………Table of Basic Allowances
TCAIMS………………Transportation Coordinators Automated Information Management System
TD……………………………………………………………………………..Technical Directive
TMS……………………………………………………………………………Type/Model/Series
T/O……………………………………………………………………………..Table of Organization
TPFDD………………………………………………………..Time Phased Force Deployment Data
TSA………………………………………………………………Training Squadron Allowance
TYCOM……………………………………………………………………..…Type Commander
VFR……………………………………………………………………………Visual Flight Rules
WRA………………………………………………………………Weapons Repairable Assembly
WRM…………………………………………………………………..War Reserve Material
WSPD………………………………………………………Weapons System Planning Document

Appendix B

References and Related Publications

Joint Publications (JPs)

1-02 Department of Defense Dictionary of Military and Associated Terms
3-0 Doctrine for Joint Operations
3-04.1 Joint Tactics, Techniques and Procedures for Shipboard Helicopter Operations
4-0 Doctrine for Joint Logistics
5-0 Doctrine for Joint Planning
5-00.2 Joint Task Force (JTF) Planning Guidance and Procedures
5-03.1 Joint Operational Planning and Execution System (JOPES)

Naval Doctrinal Publications (NDPs)

3 Naval Operations
4 Naval Logistics

Naval Publications

OPNAV Instructions

3110.11 Peacetime Planning Factors Governing Naval Aircraft
3750.6 Naval Aviation Safety Program
4790.2 Naval Aviation Maintenance Program (NAMP)
5442.2 Aircraft Inventory Reporting System (AIRS)
5442.4 Mission Essential Subsystems Matrices (MESM)

NAVAIR Instructions

4110.2 Hazardous Material Control and Management
4130.1 Configuration Management Manual
4730.1 Aircraft Service Period Adjustment (ASPA)
5200.14 Preparation of Program Planning Documents (PPD)
5215.10 Rapid Action Minor Engineering Change (RAMEC) Program
5600.19 Technical Manual Rapid Action Change (RAC) Program
13100.11 Preparation Of Weapon System Planning Documents (WSPD)
13650.1 Aircraft Maintenance Material Readiness List (AMMRL) Program
13700.15 Aircraft Engine Management System

NAVAIRNOTE

5200 Marine Aviation Logistics Support Program (MALSP) PPD
5200 Maritime Prepositioning Ships Aviation Support Equipment PPD

5200 Norwegian Air-Landed Marine Expeditionary Brigade (NALMEB) Aviation Support Equipment PPD

NAVSUP Instructions

5400.4 Naval Supply System Command Organization Manual
5400.7 Naval Aviation Supply Office Functional and Material Missions
5450.11 Mission, Functions and Tasks of the Naval Ammunition Logistics Center
P-409 MILSTRIP Desk Guide
P-437 MILSTRIP Manual
P-485 Supply Procedures Afloat

Naval Publications (other)

OH 5-82 Aviation Logistics Support Ship (T-AVB) Operations
NAVMC 2907 Maritime Prepositioning Force (MPF) Prepositioning Objective
NAVMC 2926 NALMEB Prepositioning Objective

Marine Corps Publications

Marine Corps Doctrinal Publications (MCDP)

3 Expeditionary Operations
4 Logistics
5 Planning

Marine Corps Warfighting Publications (MCWP)

3-2 Aviation Operations
3-21.1 Aviation Ground Support
3-32 MPF Operations
4-1 Logistics Operations
4-11 Tactical Level Logistics
4-11.4 Maintenance Operations
4-11.7 MAGTF Supply Operations
4-12 Operational Level Logistics
4-13.1 Strategic Mobility
5-1 Marine Corps Planning Process
5-11.1 MAGTF Aviation Planning

Marine Corps Reference Publications

5-11.1A Aviation Planning Documents
5-11.1B Aviation Logistics Planning
5-12D Organization of Marine Corps Forces

Marine Corps Orders

P3000.17 MPF Planning and Policy Manual
P3000.18 Marine Corps Planner's Manual

Marine Corps Bulletins (MCBul)

3501 MPF MAGTF Force List

Marine Corps Concept Documents

Sea-Based Logistics
Maritime Prepositioning Force 2010
Operational Maneuver From the Sea
MAGTF Aviation and Operational Maneuver From the Sea