USMC

MCWP 3-21.2

Aviation Logistics

US Marine Corps

PCN 143 000102 00

USMC

DEPARTMENT OF THE NAVY
Headquarters United States Marine Corps
Washington, D.C. 20380-1775

4 October 2012

FOREWORD

Marine Corps Warfighting Publication (MCWP) 3-21.2, *Aviation Logistics*, establishes doctrine for planning and executing Marine aviation logistics (AVLOG). It provides the philosophy for employing Marine AVLOG in support of Marine Corps operations.

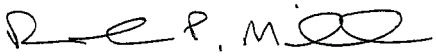
Effective AVLOG is the force multiplier of the Marine air-ground task force's (MAGTF's) aviation combat element (ACE). Viable AVLOG support enables the ACE commander to maintain more capable forces in decisive operations longer. Marine AVLOG is an integral part of the MAGTF as it extends the ACE's operational reach and flexibility.

This publication is primarily for commanders and staff officers who plan and execute AVLOG. It should be read by all Marines who are supported by or involved in AVLOG. It is also for any other activity requiring an understanding of Marine AVLOG. It provides a common basis for understanding Marine AVLOG and how the MAGTF exploits those capabilities operationally and tactically.

This publication supersedes MCWP 3-21.2, *Aviation Logistics*, dated October 2002.

Reviewed and approved this date.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS



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Publication Control Number: 143 000102 00

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AVIATION LOGISTICS

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CHAPTER 1
FUNDAMENTALS

Within the United States Marine Corps, the Deputy Commandant for Aviation 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 aviation logistics (AVLOG) matters. Marine Corps aviation is an integral part of naval aviation; therefore, the Deputy Commandant for Aviation is responsible to the Chief of Naval Operations (CNO) to ensure that Marine Corps aviation aligns with the overall Naval Aviation Enterprise. At all levels, the aviation combat element (ACE) commanders and aviation logisticians must plan and execute general logistical operations and aviation-specific (the 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.

Mission

As a result of United States Code, Title 10, *Armed Forces*, and joint doctrine, the Marine Corps, in coordination with the Navy, has made logistical self-sufficiency an essential element of MAGTF expeditionary warfighting capabilities. This ability means that the AVLOG mission of the Marine Corps, at all command and support levels, is to assist in generating ACEs that are rapidly deployable, self-reliant, self-sustaining, and flexible:

- Rapid deployment demands that ACE organizations, equipment, and supplies be readily transportable by land, sea, and air.
- 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 sustain its own 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.

Aviation Logistics Versus Aviation Ground Support

Logistical support of the ACE is more complex than that of the other MAGTF elements because it is sourced and funded by both the Navy and Marine Corps; therefore, the ACE must employ two sets of procedures for supply and maintenance operations. Logistical support is provided by two types of units organic to the ACE: the Marine aviation logistics squadron (MALS) and the Marine wing support squadron (MWSS). The MALS provides AVLOG (aviation-specific support), while the MWSS provides aviation ground support (AGS), expeditionary airfield (EAF) support, aircraft rescue and firefighting capabilities, and combat service support (CSS). An additional CSS detachment from the MAGTF's logistics combat element can provide ground logistic support beyond the capability of the ACE's organic logistical units. Detailed information about AGS may be found in Marine Corps Warfighting Publication (MCWP) 3-21.1, *Aviation Ground Support*.

Levels of Aviation Logistics

Successful deployment, employment, sustainment, and redeployment of a MAGTF ACE are the result of well-coordinated naval AVLOG support activities conducted at the strategic, operational, and tactical levels. 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, all Marines must understand the interaction of the three.

Associated national agencies, such as the Office of the Secretary of Defense and Defense Logistics Agency, the joint staff, and individual Military Services, address strategic logistic issues. The Services coordinate their required strategic and operational logistics. Combatant commanders and their logistic staffs, both supporting and supported, manage strategic and operational logistic issues that affect their assigned missions. Service components, subordinate commanders, their logistic staffs, and small-unit logisticians handle operational and tactical logistic issues.

Strategic-Level Aviation Logistics

Strategic AVLOG supports organizing, training, and equipping the forces needed to further national interests. It links the national economic base (people, resources, and industry) to naval aviation operations. The combination of strategic resources (national sustainment base) and distribution processes (US Military deployment components) represents the total national capabilities of the United States.

These capabilities include the Department of Defense (DOD), the Military Services, and other government agencies and the support of the private sector as necessary. Strategic naval AVLOG capabilities are generated based on guidance from the CNO N78 (Director, Air Warfare) and the Deputy Commandant for Aviation, while AVLOG requirements are identified by the operating forces. Lead times to coordinate and plan strategic naval AVLOG range from days to years. For example, it may take mere days to position AVLOG assets around the globe in response to a crisis, 2 years for fiscal and routine operational deliberate planning, and 10 years or more for facility development.

Support-specific items for AVLOG are provided through Navy materiel and equipment support systems. The Deputy Commandant for Aviation coordinates with the CNO; Commander, Naval Air Systems Command (COMNAVAIRSYSCOM); Commander, Space and Naval Warfare Systems Command; Commander, Naval Sea Systems Command (NAVSEASYSCOM); and other naval aviation support activity commanders in—

- Planning for and acquisition of equipment, weapons, weapon systems, information technology systems materiel, 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 and information technology systems for the Marine Corps meet operational requirements.
- Ensuring proposed training would prepare Marine Corps AVLOG personnel for required support activities.

Within the aviation department of Headquarters, Marine Corps (HQMC), the Aviation Logistics Support Branch (ASL) coordinates with various offices within the Office of the Chief of Naval Operations (OPNAV) and other agencies for planning the logistical support of both Active Component and Reserve Component Marine aviation. This support includes 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.

Operational-Level Aviation Logistics

Operational AVLOG links tactical requirements to strategic capabilities to accomplish the ACE's operational goals and objectives. It includes the support to sustain air missions and major operations. Operational AVLOG supports expeditionary aviation operations and provides 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 both in theater and within the continental United States (CONUS). These logisticians work closely with operators at the tactical level to identify theater shortfalls and report them to the supporting establishment. At the operational level, the concerns of the aviation logistician and the operator are closely interrelated. Operational-level AVLOG focuses on supporting force closure with the objective, sustainment, reconstitution, and redeployment of the ACE in theater, which includes the following:

- Supporting operational-level command and control and information technology systems for effective planning and management of operational AVLOG efforts.
- Supporting AVLOG requirements at intermediate and forward support bases.
- Developing a concept of AVLOG support for operation plans (OPLANs) and contingency plans (CONPLANs).
- Supporting employment of geoprepositioned and maritime prepositioned AVLOG support assets.
- Supporting arrival and assembly of aircraft and the aviation logistics support ships (T-AVBs) in theater and their reception, staging, onward movement, and integration (RSOI).
- Coordinating AVLOG support with joint, other Service, and host-nation agencies.
- Supporting the reconstitution and redeployment of the ACE and maritime prepositioning forces (MPFs) for follow-on missions.

Tactical-Level Aviation Logistics

The focus of the tactical level 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. The response time of tactical AVLOG must be flexible enough to ensure expeditious deployment. This type of support requires anticipatory planning.

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

It is important to note that the Marine expeditionary unit (MEU) ACE is normally embarked aboard an air-capable ship, such as an amphibious assault ship (general purpose) (LHA) or amphibious assault ship (multipurpose) (LHD). The ship's aircraft intermediate maintenance department, supply department, and ordnance department, rather than the MALS, is responsible for the AVLOG support of embarked Marine aircraft. 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.

Marine Aviation Logistics Squadron

The MALS is the tactical AVLOG organization of the Marine Corps and is responsible for providing intermediate-level (I-level) maintenance, supply, ordnance/armament, and information technology systems support for aircraft and aeronautical equipment. Each MALS provides a core group of supervisory and support personnel, which, when augmented by aircraft-specific maintenance personnel from aircraft squadrons, provides an intermediate maintenance capability for either fixed-wing or rotary-wing aircraft. See figure 1-1.

Maintenance Levels

Commander, Naval Air Forces Instruction 4790.2, *The Naval Aviation Maintenance Program* (NAMP), and Chief of Naval Operations Instruction (OPNAVINST) 8000.16, *Naval Ordnance Maintenance Management Program (NOMMP)*, support CNO/Commandant of the Marine Corps (hereafter referred to as the Commandant) readiness and safety objectives and provide for optimum use of manpower, facilities, materiel, and funds. Detailed information regarding funding can be found in Department of the Navy Staff Offices Manual P-3013-1, *Financial Management of Resources Fund Administration (Operating Forces)*; Marine Corps Order P4400.177, *Marine Corps Aviation Supply Desk-Top Procedures with Continuous Process Improvement*; and Naval Supply Systems Command (NAVSUP) P-485, *Operational Forces Supply Procedures*.

The naval aviation maintenance program (NAMP)/naval ordnance maintenance management program operate on three levels of maintenance—organizational level (O-level), I-level, and depot

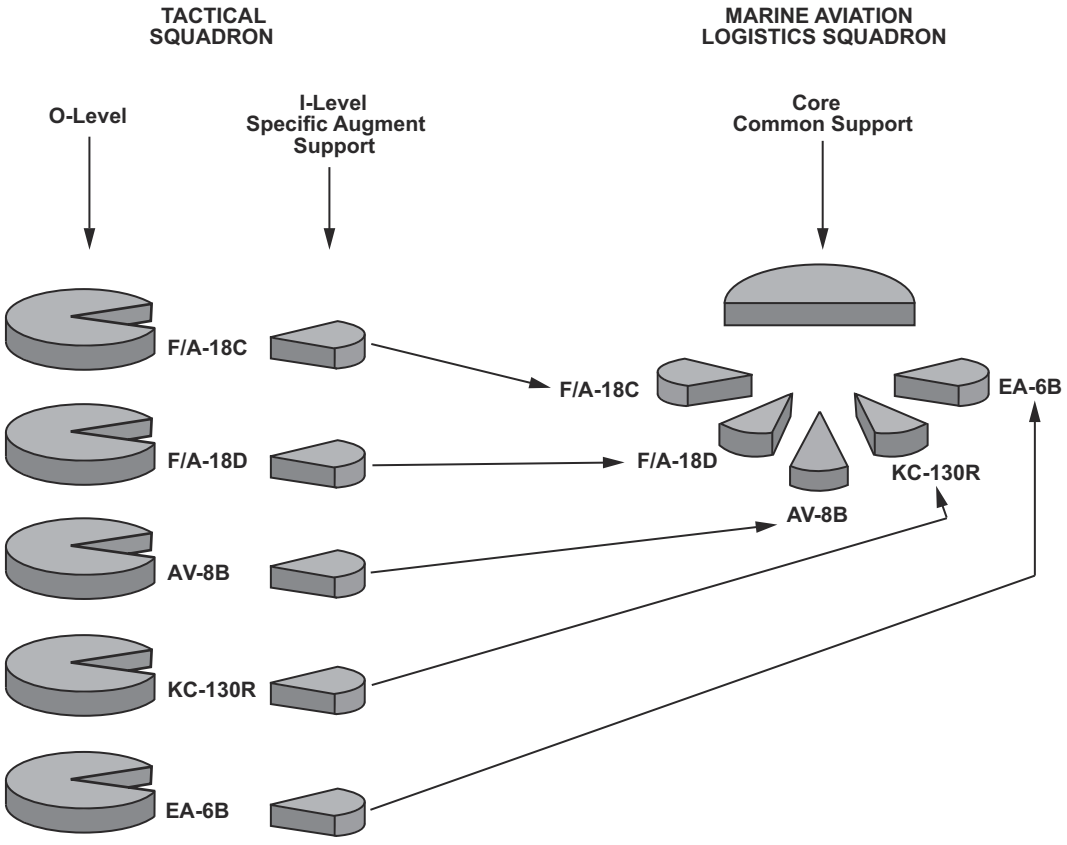


Figure 1-1. Marine Aviation Logistics Squadron Support Organization.

level (D-level)—and govern management of all levels of aviation and aeronautical equipment maintenance and ordnance. The programs provide the management tools required for efficient and economical use of personnel and materiel resources in performing maintenance. They also provide the basis for establishing standard organizations, procedures, and responsibilities for accomplishing all maintenance on naval aircraft, associated materiel, and equipment. The division of maintenance into the 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 that ensures optimum economic use of resources.
- Collect, analyze, and use data to assist all levels of NAMP management. Information technology systems are a critical enabler across all levels of maintenance.

Organizational-Level Maintenance

Organizational-level maintenance is performed daily by operating units (squadrons) in support of their operations. The O-level maintenance mission is to maintain assigned aircraft and aeronautical equipment in a full mission-capable 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 following categories:

- Inspections.
- Servicing.
- Handling.
- On-equipment corrective and preventive maintenance, including repair, removal, and replacement of defective components.
- Class V(A) [aviation ammunition] ordnance loading/unloading and arming/dearming.
- Incorporation of technical directives.
- Recordkeeping and reports preparation.
- Age exploration of aircraft and equipment under reliability-centered maintenance (RCM).

Intermediate-Level Maintenance

Intermediate-level maintenance is the responsibility of and performed by designated maintenance activities, usually 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 materiel support at the nearest location with the lowest practical resource expenditure. Intermediate-level maintenance consists of on- and off-equipment materiel support and may be grouped under the following categories:

- Performance of maintenance on aeronautical components and related support equipment and EAF components.
- Calibration of designated equipment.
- Processing aircraft components from stricken aircraft.
- Providing technical assistance to supported units.
- Incorporation of technical directives.
- Manufacture of selected aeronautical components, liquids, and gases (cryogenics).
- Performance of on-aircraft maintenance when required.
- Age exploration of aircraft and equipment under RCM.
- Munitions assembly and receipt, issue, storage, and inventory.
- Off-equipment corrective and preventive maintenance, including repair, removal and replacement of defective components.

Depot-Level Maintenance

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

- Standard D-level maintenance of aircraft.
- Rework and repair of engines, components, and support equipment.
- Calibration by Navy calibration laboratories.
- Incorporation of technical directives.
- Modification of aircraft, engines, and default support equipment.
- Manufacture or modification of parts or kits.
- Technical and engineering assistance by field teams.
- Armament of aircraft and equipment under RCM.
- Rework of EAF components.

Marine Aviation Logistics Support Program

Together with the T-AVBs and maritime prepositioning ships (MPSs), the Marine Aviation Logistics Support Program (MALSP) provides the MALS with the ability to support all aircraft types that compose a MAGTF ACE. The 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.

Prior to the MALSP, there was no standard method of task-organizing aviation spare parts, support equipment, EAF, mobile facilities, and aviation support personnel. Commonly, the unit supply/maintenance officer used his experience to determine 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's mission was great. The time required to assemble AVLOG support packages exceeded all other phases of task-organizing an ACE. Although AVLOG support was provided, it was neither responsive nor effective.

Task-Organizing Aviation Logistics

A key feature of the MALSP concept is the ongoing development of logistic support capable of rapid task organization and deployment. The primary means for accomplishing this enhancement is a series of standardized, predetermined logistic support packages containing all elements (not including Class V[A] munitions) required to support any CONPLAN that the Marine Corps may be tasked to execute. Contingency support packages (CSPs), the primary MALSP building blocks, contain negotiated allowances of spare parts, support equipment, EAF, mobile facilities, and the personnel needed to sustain Marine aviation in combat. The MALSP, together with the MPF program (including the T-AVBs), provides aviation logisticians the ability to identify and integrate people, support equipment, EAF, mobile facilities, and the spare parts needed to support all aircraft types that could comprise a MAGTF ACE. It integrates current and future support programs and concepts necessary to sustain Marine aviation in combat.

While in garrison, Marine aircraft squadrons of a specific type, model, and/or series (T/M/S) are

usually consolidated in specific Marine aircraft groups (MAGs). In combat or other contingencies, the Marine Corps task-organizes to provide a tailored force with appropriate capabilities for the designated mission. 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 on 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 logistic support packages between task-organized units is a more complex undertaking.

Compositing Marine Aviation Logistics Support Program 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 that can serve as either a rotary-wing or fixed-wing element of the ACE. As the aircraft move to join a composite unit, the associated logistic support must also move.

The MALS within the MAG supplying the aircraft squadron provides the supporting logistic assets in the form of T/M/S-specific "building blocks." The MALS from which these "building blocks" are drawn is the parent MALS. The MALS to receive these "building blocks" or CSP, is 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.

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

- Fly-in support package (FISP).
- Peculiar contingency support package (PCSP).
- Common contingency support package (CCSP).
- Follow-on support package (FOSP).
- Marine expeditionary unit ashore support package (MESP).
- Remote expeditionary support package (RESP).
- Training squadron allowance.

Logistic planning for MALSP requires that the logistic assets available at each MALS be considered and used in sourcing the various MALSP support packages. As a starting point in developing MALSP, notional aircraft assignments to support Marine expeditionary brigade (MEB) ACEs were developed. Logistic 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 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 solid aviation support foundation (see fig. 1-2). For example, AVLOG assets can be task-organized from one or more parent MALS and joined

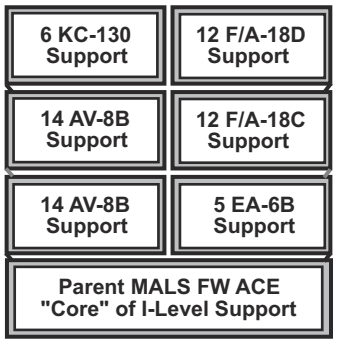


Figure 1-2. Marine Aviation Logistics Support Program Building Block Concept.

to the core of a host MALS. Together, rotary-wing and fixed-wing composite MALS will form the logistic support base for the MAGTF ACE for up to 90 days at combat flying hour rates.

Fly-In Support Package

The ACE fixed-wing and rotary-wing aircraft are flight ferried directly to the theater of operations and are supported by Air Mobility Command (AMC) aerial tankers and cargo aircraft. The remainder of the fly-in echelon (FIE) is flown into the theater of operations by AMC/Civil Reserve Air Fleet (CRAF) aircraft and includes squadron personnel, such as maintenance and support crews, a representative T/M/S FISP contained in mobile facilities, limited O-level individual materiel readiness list (IMRL)/support equipment, and EAF items.

As organizational-level parts support packages, FISPs are designed to support the FIE aircraft of the MAGTF ACE. The 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 are designed to support a particular T/M/S and quantity of aircraft. These assets are additive to the aviation consolidated allowance list (AVCAL) and the consolidated shipboard allowance list (COSAL).

Until activated in support of a contingency, a FISP is considered protected stock materiel, is maintained under the cognizance of the MALS aviation supply officer, and is to be drawn down only to rotate stock/maintain configuration control. The FISP assets are not removed to fill materiel 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 HQMC ASL.

Support equipment supporting the FIE includes all noncustody coded (N-coded) IMRL and minimal P, L, or M custody-coded IMRL items required during flight ferry or for initial aircraft debarkation, parking, or servicing operations (see table 1-1 for information on custody codes). Support equipment assets for the FIE, when combined with the assets offloaded from MPSs, comprise all necessary custody-coded [O-level] support equipment required during the first 30 days of a contingency.

Upon a squadron's arrival in the area of operations, the FISP will be combined with the O-level and limited I-level support equipment that has been transported into theater via FIE/MPS. This combination provides readiness and sustainability for the deployed aircraft until a tailored I-level maintenance capability, such as the MALS, arrives in theater aboard a T-AVB, by airlift, or by other means.

Contingency Support Package

Contingency Support Packages consist of the common and specific I-level logistic support required for the composite deployment of detachments/squadrons of particular T/M/S aircraft. See figure 1-3.

The five basic elements that comprise CSPs are personnel, support equipment (such as IMRL items), EAF, mobile facilities, and AVCAL/COSAL. There are master allowance documents for each element, such as a table of organization, IMRL, table of basic allowance (TBA), and AVCAL/COSAL. Because O-level IMRL, mobile facility allowances, and personnel allocations are already separately identified and rapidly deployable, they are incorporated into CSPs. The 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 PCSP and CCSP allowance subcategories.

Peculiar Contingency Support Package Allowances

The PCSP allowances consist of the specific items required to provide I-level supply and support equipment support for a specific T/M/S aircraft. A specific item is one that is used for a specific aircraft or support equipment application.

Table 1-1. Individual Materiel Readiness List.

Code	Usage	Remarks
E	Items used infrequently (less than once a month)	The item is available from the supporting IMA as required. The IMA makes the item available to activities. After use, the activities return the item to IMA.
M	Noncalibratable items requiring management and not otherwise custody coded	The quantity authorized for these items is the total quantity required for subcustody by each activity supported. An example of an M-coded item is a carrying case for a calibratable item when it is listed in the source data as a separate end item. There are two steps for assigning items in code M. First, the support equipment controlling authority identifies the item. Second, the Naval Air Engineering Center assigns code M to the item.
P	Items weighing more than 200 pounds (more than 300 pounds for wheeled equipment)	When authorized for a supporting IMA, the IMA or MALS contingency support package quantity is the total quantity required for subcustody to each O-level maintenance activity. The items are issued on a subcustody basis to squadrons for full-time use. The squadron returns the item to the IMA prior to deployment. While deployed, the new supporting IMA issues these items to embarked squadrons.
L	Items requiring calibration and management	These are items designated for use at O-level maintenance and not already coded D, E, or P. The quantity authorized is the total quantity required for subcustody by each activity supported. The O-level activities retain the items when deployed.

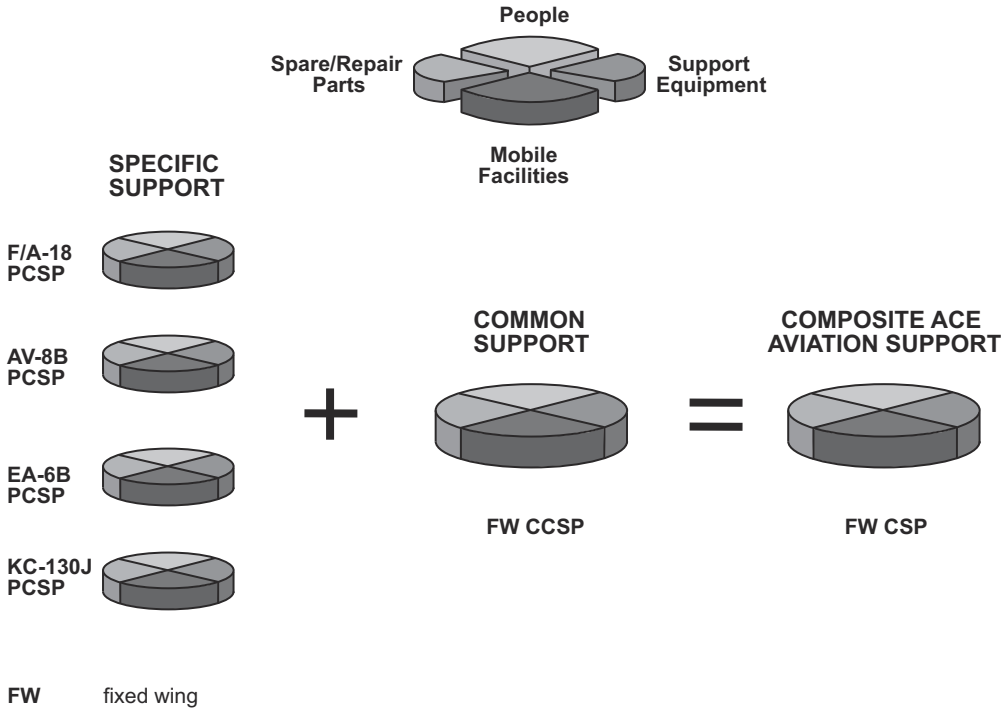


Figure 1-3. Marine Aviation Logistics Support Program Contingency Support Package.

Common Contingency Support Package Allowances

The CCSP allowances consist of those Marine common supply assets and support equipment that the host MALS provides in support of assigned aircraft. A fixed-wing common item is one that applies to at least the Joint Strike Fighter, F/A-18, and AV-8B aircraft. A rotary-wing common item is one that applies to at least the CH-53E, CH-46E, H-1, or MV-22B aircraft. For planning purposes it is assumed that the fixed-wing and rotary-wing MALS will be geographically separated.

Follow-On Support Package Allowance

Equipment for the FOSP consists of supply items and support equipment assets that, although not required to *initiate* the assault, are required to *sustain* the assault. The FOSP materiel results from a combination of several factors—

- The FOSP spares requirement is determined by running the readiness-based sparing model to the full site baseload and the MALS/site individual component repair list versus the number of aircraft in the package and the planning individual component repair list, which is how a CSP is modeled.
- The degree to which the FOSP allowance quantity exceeds the site's authorized PCSP and CCSP allowance quantities for an item becomes the authorized FOSP allowance quantity for that item.
- There are also items that, because of airlift and sealift constraints must be phased into an employment area by use of assault follow-on echelon or follow-up shipping. For example, weight and cube can be considerations in designating materiel as a FOSP allowance.
- Since FOSP assets are required to sustain the assault, the allowances are built to a 90-day combat utilization rate. These allowances are site specific and must be distinctly identified in allowance documents provided to each MALS.

Marine Expeditionary Unit Ashore Support Package

During combat and foreign humanitarian assistance/disaster relief operations, the MEU ACE or detachments have been placed ashore for extended periods, apart from the amphibious ready group. As a result, aviation supply support became an unsourced requirement with a potential negative impact on sortie generation and contingency readiness. Historically, the parent MALS has sourced logistic requirements in support of extended MEU ashore operations out of available operating stock. As a result, MESP were created to provide a standard MEU deckload O-level, supply-only support at a 30-day combat utilization rate. The MESP is not intended to be used to supplement/provide greater depth for a FISP or other package that is or will be deployed.

Deployment of the MESP requires the MEU commander to request MESP support from the Aviation Logistics Department (ALD):

- East Coast based MEUs are supported by United States Marine Corps Forces Command (MARFORCOM).
- West Coast based MEUs are supported by United States Marine Corps Forces, Pacific (MARFORPAC).

The MARFORCOM/MARFORPAC ALD, in coordination with the respective Marine expeditionary force (MEF); MAWs; Commander, Naval Air Forces (COMNAVAIRFOR); Commander, Naval Surface Forces; and the naval inventory control point (NAVICP), will direct the deployment the MESP. This deployment shall occur by standardized container, which can be moved by MEU-organic KC-130 heavy or medium lift rotary-wing aircraft for rapid deployment within 24 hours. The parent MALS from which the MESP T/M/S package is drawn shall act as the primary point of entry for supply requisitions and provide logistical support. If multiple MESP T/M/S packages are deployed, a parent MALS is selected as the primary port of

embarkation. The MEU commander, with concurrence from the supporting MARFORCOM and/or MARFORPAC ALD, directs the MESP redeployment and reconstitution once the theater commanders order the completion of operations.

Remote Expeditionary Support Package

On occasion, Marine aircraft deploy in support of contingencies without MPF assets. Due to operational timing, economic considerations, and geography, these aircraft squadrons will deploy to an area of operations with only a FISP and a MALS detachment with the requisite AVLOG 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 AVLOG requirement planning in support of major theater war OPLANs is available. 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 MPF assets arrive.

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. For example, an AV-8B PCSP equals the required specific support for a single AV-8B squadron, while an F/A-18 PCSP equals the required specific support for three F/A-18 squadrons. The design of CCSPs/PCSPs supports the deployment and logistics of entire squadrons/groups of squadrons used during major theater war/contingencies. Although this type of allowancing makes great use of scarce economic resources, it hinders 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 the range of military operations. Usually, these contingencies do not require multiple squadrons of an aircraft type or the full support of CCSPs/PCSPs.

A RESP is a combination of O-level protected stock (FISP) augmented by selected PCSP stock supporting targeted repair capability, aviation weapons support equipment, aviation support equipment, mobile facilities, and MALS personnel that would detach from a CSP to be used to support ACE operations. A RESP is strategically airlifted to the area of responsibility and designed to support a notional number of aircraft minus Class V(A) munitions until the arrival of logistic support from T-AVB (CCSP/PCSP) or MPF assets. When full CSPs operational requirements are not deployed, an RESP can act as a standalone capability to support operational requirements.

Developed during deliberate planning, RESPs provide AVLOG planners "ready-made" tools to rapidly tailor support regardless of aircraft mix and operational scenario. Composition of RESPs includes the AVLOG support elements, which are currently resident within CCSPs/PCSPs and require no additional economic resources. See figure 1-4 on page 1-12.

Training Squadron Allowance

Designated MALS provide support to training squadrons attached to the MAG they support. Training squadron allowances are built to support a 30-day endurance period at peacetime flying hours. The training squadron allowance IMRL/AVCAL/COSAL/mobile facilities are additive to the allowances of the MALS and are distinctly identified as such in allowance documents.

Maritime Prepositioning Force and Aviation Logistics Support Ship Support

Aviation combat element aircraft can be supported by one or more of three maritime prepositioning ships squadrons (MPSRONs). They can also get support from one or both of the AVLOG support T-AVB ships.

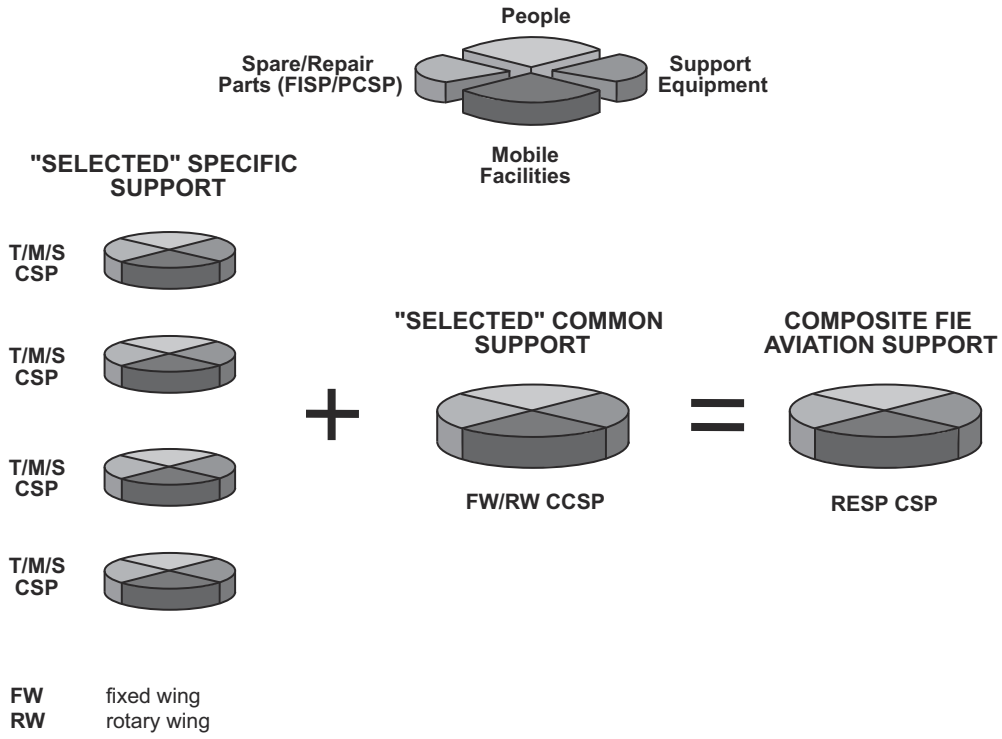


Figure 1-4. Remote Expeditionary Support Packaging.

Maritime Prepositioning Force Operations in Support of Expeditionary Aviation Logistics

An MPF operation is the rapid deployment and assembly of a MAGTF into a permissive area using a combination of intertheater airlift and forward-deployed MPSs. These operations are strategic deployment options that are global in nature, naval in character, and suitable for employment in a variety of circumstances. An MPF is a rapid response enabling force that can be mission-tailored and self-sustainable. As such, MPF operations provide an essential element in conducting the national military and maritime strategies by protecting key naval chokepoints and sea lines of communications. Such operations include the airlift of MAGTF and Navy elements, such as the Navy support element or naval coastal warfare, with some associated equipment into an arrival and assembly area to join with equipment and supplies carried aboard MPSs.

Aviation Logistics Support Ship Operations in Support of Expeditionary Aviation Logistics

The mission of the T-AVB is to provide rapid and dedicated sealift for employment of a tailored aviation intermediate maintenance activity (IMA) to support deployment of Marine Corps fixed-wing and rotary-wing aircraft. Most equipment and supplies required to sustain forward deployed fixed-wing and rotary-wing aircraft will be delivered by the T-AVB. Although the concept of operations for the T-AVB is primarily to support MAGTF 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 an 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 an 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 and are crewed by maritime administration personnel in reduced operating status 5: they can be fully activated in 5 days. When activated, the Ready Reserve force ships come under the operational control of the Military Sealift Command (MSC). Both the *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. They are supported by embarked information technology systems. The MALS can be partially operational aboard the T-AVB during transit to the area of operations.

On notification of movement, the T-AVB is expected to arrive in the operational area within 30 to 35 days to marry with aircraft, personnel, and support prepositioned by fixed-wing flight ferry and FIE units. Transfer of the IMA spare parts and equipment ashore normally begins on arrival if conditions permit. If rapid movement ashore is not possible, MALS operations can be sustained in the operational area. Under these conditions, the T-AVB prioritizes its workload in support of flight line maintenance requirements to ensure that mission-essential support is provided. See figure 1-5 on page 1-14.

Reserve Aviation Logistics

The Marine Corps Reserve is organized under the Commander, United States 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 Component aviation support units are capable of independent, task-organized logistic support as an element of a MAGTF. The MAGTF commander can integrate Reserve Component 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 (HHQ) 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 and fleet replacement squadron support.
- Form MAGTFs for service with the fleet.

Marine Corps Reserve logistic capabilities and responsibilities are comparable to the logistic 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 combatant command (command authority) over assigned Marine Corps Reserve forces when mobilized or ordered to active duty (other than for training).

Upon activation, Commander, United States Marine Corps Forces Reserve transfers command of Reserve Component forces to Commander, United States Marine Corps Forces Command (MARFORCOM) for Active Component/Reserve Component integration, predeployment training, and deployment/redeployment actions required to support combatant commander requirements.

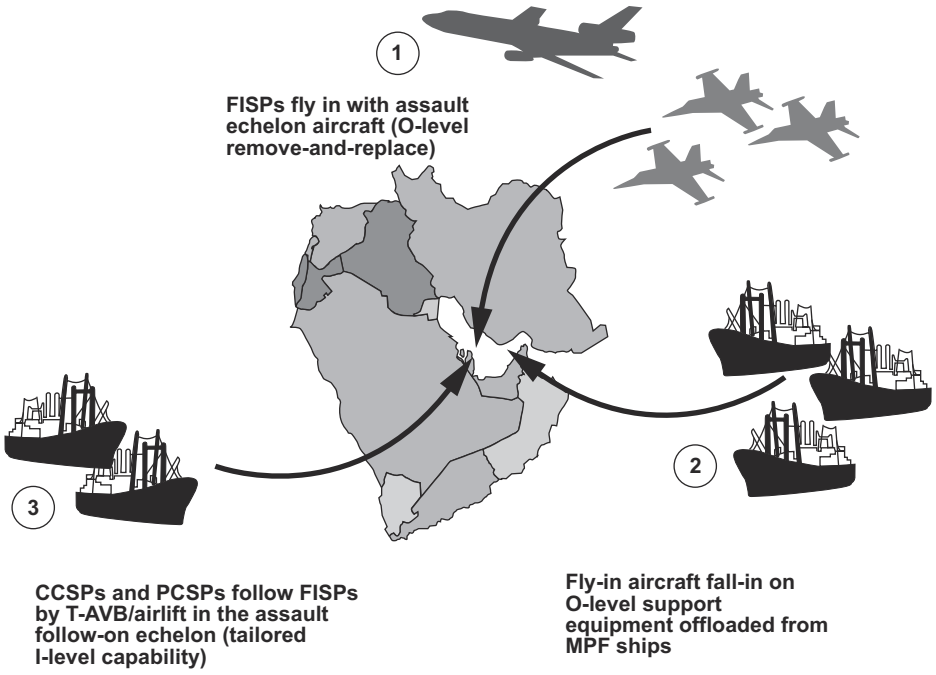


Figure 1-5. Marine Aviation Logistics Support Program Employment.

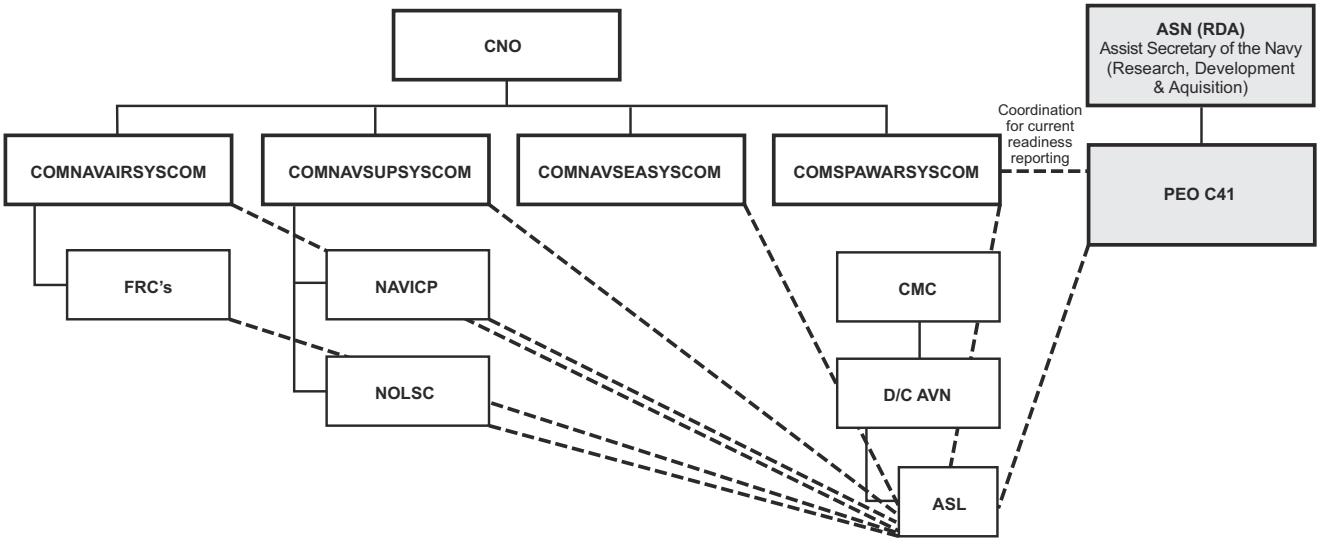
CHAPTER 2
ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES

Each organization has inherent logistic capabilities and each type commander (TYCOM) has specific 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.

Aviation Logistics Supporting Establishment

Numerous Department of the Navy (DON) commands/agencies support naval aviation (see fig. 2-1). In logistics, the most visible function is naval aviation materiel support, provided by naval systems commands. Naval systems commands support responsibilities include the development, logistic support planning, acquisition, testing and evaluation, contracting, construction, installation, conversion, alteration, configuration management, overhaul, and D-level maintenance and repair of the following:

- Aircraft.
- Weapons and weapon systems.
- Missiles and other expendable ordnance.
- Command and control and communications systems.
- Training equipment and devices.
- Land vehicle systems and equipment.
- Shore facilities, utilities, and related equipment.
- Materiel, supplies, and supporting services for the Navy and the Marine Corps.



ASN (RDA) Assistant Secretary of the Navy (Research, Development and Acquisition)
CMC Commandant of the Marine Corps
COMNAVSUPSYSCOM Commander, Naval Supply Systems Command
COMNAVSEASYSCOM Commander, Naval Sea Systems Command
COMSPAWARSYSCOM Commander, Space and Naval Warfare Systems Command
D/C AVN Deputy Commandant for Aviation
FRC fleet readiness center
PEO C4I Program Executive Office Command, Control, Communications, Computers, and Intelligence

Figure 2-1. Notional Aviation Logistics Supporting Establishment.

Naval Air Systems Command

Research, design, development, testing, acquisition, and logistic support of all aviation procurements relating to Navy and Marine Corps aircraft, missile targets, associated materiel, and equipment is the responsibility of Naval Air Systems Command (NAVAIRSYSCOM). As the technical manager for aviation maintenance, the COMNAVAIRSYSCOM—

- Provides guidance on procedures, technical direction, and management review at each level of maintenance.
- Provides aviation maintenance procedural documents in sufficient scope and depth to clearly define the maintenance functions, organizations, and responsibilities to perform these functions.
- Implements and maintains a complementing metrology and calibration program as a part of the NAMP.
- Assists the CNO and others in developing training programs for officer and enlisted personnel assigned to aviation maintenance.
- Provides aviation maintenance materiel allowance lists and lists of facilities that are authorized, available, and required for fleet and shore activities.
- Makes recommendations on design of the maintenance data system (MDS) to reduce redundant, time-consuming, and unnecessary reporting. Ensures the MDS is compatible throughout all levels of maintenance.
- Serves as functional manager for Naval Aviation Logistics Command Management Information System (NALCOMIS) per Naval Air Systems Command Instruction 5230.11, *Fleet Aviation Logistics Information Systems Functional Management Manual*.
- Provides NAMP instruction support for CNO N781C (OPNAV Principle Official Program Sponsor).
- Provides fleet aviation performance improvement support.
- Provides on-site NAVAIRSYSCOM field service representative support to activities requesting assistance.
- Develops and maintains management information systems that directly support the fleet.
- Plans, designs, develops, and implements all information decision support systems that affect the total life cycle of aeronautical equipment.
- Provides technical support related to naval aviation resource analysis, maintenance engineering, logistic engineering, and logistic support program implementation.
- Provides support of all aviation maintenance trainers and weapon system training programs and manages D-level aircraft training courses.

Naval Supply Systems Command

Naval Supply Systems Command provides materiel in support of the operation and maintenance of aeronautical equipment/ordnance. 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, accessories, and safety equipment; EAF components; support equipment; common and specific support equipment; and weapons/ammunition. Numerous NAVICPs and the Naval Operational Logistics Support Center (NOLSC) provide for the functions discussed below.

The NAVICP computes aviation materiel requirements in range and depth for the AVCAL and COSAL. This responsibility includes conducting and coordinating provisioning conferences and identification and transfer of items to be managed by other cognizant inventory control points. The NAVICP also—

- Budgets for and funds all assigned aviation materiel requirements.
- Procures materiel directly from industry or other government agencies.
- Allocates NAVAIRSYSCOM procured materiel to stock points, distributes materiel to fill

replenishment stock requirements, and refers requisitions to stock points to meet requirements.
- Disposes of materiel in excess of system requirements (which includes support equipment) when authorized by the COMNAVAIRSYSCOM.
- Maintains aeronautical spares and spare parts catalogs. The catalog function includes obtaining national stock numbers from the Defense Logistics Information Service Center.
- Determines system asset rework requirements of repairable components to be processed by naval, inter-Service, or commercial rework facilities.
- Provides primary materiel support for air-launched weapons.

The NOLSC is the Navy's centralized inventory manager for all naval ammunition. It is a clearing house for fleet ordnance support management and warfare assessment and is responsible for the policies, procedures, and business systems for arms, ammunitions, and explosives. The commanding officer of the NOLSC also has the following responsibilities:

- Provides support to fleet ordnance positioning, conducts storage analysis, and ensures worldwide visibility of the fleet plan.
- Provides direction and procedures for ammunition allowance establishment and processing; receives, reviews, and approves all allowance requests; and processes and loads all allowance data into the Ordnance Information System-Wholesale (OIS-W).
- Serves as the naval aviation ordnance community's point of contact for moving conventional ordnance to locations outside CONUS.
- Provides life cycle program support for all naval ammunition, weapons, combat systems, and support equipment.
- Acts as the naval ordnance automated information system (AIS) program manager and provides functional management of OIS-W and Ordnance Information System-Retail (OIS-R).

Naval Sea Systems Command

A NAVSEASYSCOM component, the Naval Ordnance Safety and Security Activity's (NOSSAs) primary mission is to establish standard policy and procedures for and provide global oversight of DON explosives safety, ordnance physical security and environmental matters, and insensitive munitions. It provides global oversight of the NAVSEASYSCOM ordnance quality evaluation program. Other management responsibilities are supervising special offices, Reserve Component units, and other field activities that perform explosive safety inspections. The Explosives Safety Support Offices Atlantic and Pacific continue to report as detachments to the NOSSA. Core NOSSA functions include the following:

- Explosives safety.
- Insensitive munitions.
- Ordnance environmental support.
- Quality evaluation.
- Security.

Program Executive Office Command, Control, Communications, Computers, and Intelligence

Program Executive Office (PEO) Command, Control, Communications, Computers, and Intelligence (C4I) is partnered with Space and Naval Warfare Systems Command and other industry partners. The PEO C4I provides integrated communication and information technology systems, delivering end-to-end connectivity and enabling decision superiority to US naval forces.

In support of the AVLOG community PEO C4I, Command and Control Program Office (PMW 150), the Naval Tactical Command Support System (NTCSS) provides the full range of responsive mission support AIS hardware and software to facilitate management of information, personnel, materiel, and funds required to maintain aircraft. Specifically, NTCSS supports I-level and O-level aviation maintenance management, materiel, financial management, and related administrative management.

The NTCSS provides tactical commanders the required mission support information for tactical decisions, improved equipment supportability, and maintainability. This results in a commensurate enhancement in the material condition and combat readiness of surface, subsurface, and aviation units. The key NTCSS applications used by aviation logisticians are NALCOMIS Optimized Organizational Maintenance Activity (OOMA), NALCOMIS Optimized IMA, and relational supply (RSUPPLY) (see chap. 4).

Type Commanders

Type commanders are responsible for the maintenance and materiel condition of aeronautical equipment assigned to their cognizance for the operation and support of the naval aviation mission (see fig. 2-2). Each TYCOM coordinates aeronautical equipment assignment logistic support and maintenance performed on aeronautical equipment under his custody. Naval operating forces are assigned to TYCOMs for training, employment, and logistic support. The Commander, MARFORPAC and the Commander, MARFORCOM are also designated as the Commanding General, Fleet Marine Force, Pacific and the Commanding General, Fleet Marine Force, Atlantic, respectively. While in this role, they are the TYCOMs for the Marine Corps on Marine aviation ordnance. Logistic support, aviation ordnance training requirement submission, and noncombatant expenditure allowance (NCEA) of Class V(A) munitions are the only TYCOM functions performed by the Commanding Generals of the Fleet Marine Forces, Atlantic and Pacific. The COMNAVAIRFOR and the Commander, Naval Air Forces Reserve are the TYCOMs for Marine Corps aircraft and aviation support equipment. They are responsible for logistic support of both Navy and Marine Corps aircraft and engines.

The MARFORCOM and MARFORPAC ALD, respectively, support the COMNAVAIRFOR 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, IMRL materiel management, and other special programs.

Fleet Readiness Centers and Cognizant Field Activities

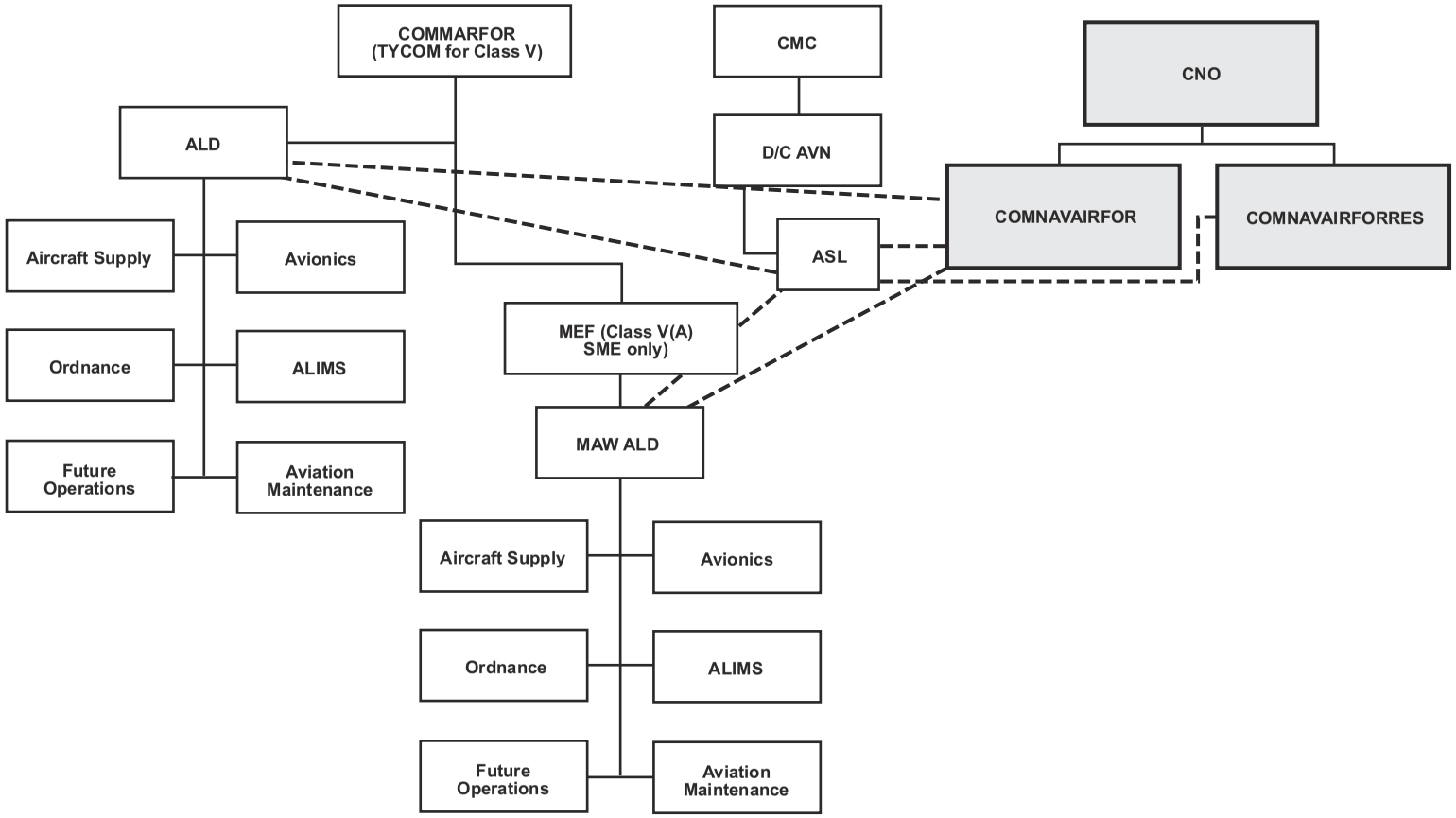
Industrial functions consist of three general categories: rework activities, aeronautical modification, and support services.

Rework Activities

Rework activities consist 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. Functions include complete rebuild, reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of system consumables. They also include inspection, calibration, and testing.

Aeronautical Modification

Aeronautical modification functions are required to change or improve design levels of performance, reliability, and materiel condition. The term modification, as used in this publication, includes alteration, conversion, engineering change, and modernization. For 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.



CMC Commandant of the Marine Corps
COMMARFOR Commander, United States Marine Corps Forces
COMNAVAIRFORRES Commander, Naval Air Forces Reserve
D/C AVN Deputy Commandant for Aviation
MARFOR Marine Corps forces
SME subject matter expert

Figure 2-2. Notional Aviation Logistics Organization (Situation Dependent.)

Support Services

The D-level supports the O- and I-levels by providing technical help and carrying out those functions beyond the responsibility or capability of the O- and I-level activities through the use of more extensive facilities, skills, and materiels. Personnel from depots carry out D-level functions in depots or in the field. The fleet readiness center will—

- 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 logistic problems.
- Perform other levels of aircraft maintenance for eligible activities, on specific request or assignment.
- Perform other functions as directed by the COMNAVAIRSYSCOM.

Headquarters, Marine Corps, Aviation Logistics Support Branch

The Deputy Commandant for Aviation and the Head, ASL are responsible for developing and implementing matters of AVLOG policy and management. Materiel, equipment, and systems of AVLOG are provided for through Navy materiel and equipment support systems. To plan for and acquire equipment, weapons, weapon systems, materiel, supplies, facilities, maintenance, and support services for Marine Corps aviation, HQMC ASL coordinates with—

- Each department of the aviation branch, such as aviation plans/programs/budgets and aviation weapon systems requirements.
- OPNAV.
- COMNAVAIRSYSCOM.
- Commander, Naval Sea Systems Command.
- PEO C4I.
- Other naval aviation support activities.

The organization also coordinates with the CNO to ensure that the characteristics of newly procured or developed equipment and materiel for the Marine Corps meet operational requirements and that proposed training prepares Marine Corps personnel for combat. The HQMC ASL coordinates AVLOG actions with other agencies as part of its responsibility for Marine Corps aviation. Specific functions within the purview of HQMC ASL include the following:

- Assist CNO staff and the naval AVLOG supporting establishment in distributing aeronautical and related materiel for adequate outfitting of Marine Corps aviation units.
- Develop logistic plans and programs for aviation units and represent Marine Corps aviation in developing naval aviation maintenance and supply policies and procedures.
- Represent Marine Corps aviation in the development and execution of maintenance plans, test equipment master plans, and integrated logistic support plans for aeronautical weapon systems and related equipment subsystems and aviation ordnance.
- Represent the Marine Corps in developing naval aviation maintenance and aviation supply policies and procedures.
- Provide comments, directions, and recommendations on AVLOG support for aviation weapon systems and associated equipment that are under development or in procurement.
- Coordinate AVLOG requirements relative to deployment, employment, and maritime or land prepositioning.
- Develop and monitor plans and programs on aviation ordnance.
- Coordinate logistic support needs for airborne armament and armament handling equipment.
- Review and assist in the preparation or revision of weapons systems planning documents,

program planning documents, and other long range AVLOG planning tools.
- Supervise and monitor the Aviation Explosive Safety Program and conventional ammunition.
- Function as the occupational field specialists in aviation maintenance, avionics, ordnance, supply, and aviation logistics information management and support (ALIMS) military occupational specialties (MOSs).
- Monitor and analyze aircraft readiness data and recommend appropriate actions.
- Assist CNO and other supporting agencies in the planning, programming, development, and fielding of AIS equipment and software to support Marine Corps AVLOG.
- Provide program direction for the MALSP within approved aviation plan requirements.
- Coordinate with CNO, NAVAIRSYSCOM, and subordinate DON activities on MALSP policy and requirements within a command and between supported and supporting commands.

Marine Corps Forces Component Command Aviation Logistics Department

All joint forces with Marine Corps forces assigned will include a Marine Corps component command headquarters, such as MARFORCOM or MARFORPAC. There are two combatant command-level Marine Corps component commands with standing ALDs: MARFORCOM and MARFORPAC. The 4th MAW ALD staff provides ALD functions for the United States Marine Corps Forces Reserve (MARFORRES) component command. All other combatant command-level Marine Corps component commands can be augmented from MARFORCOM, MARFORPAC, and MAW ALD staffs to provide ALD staff functionality as required. The Assistant Chief of Staff (AC/S) ALD, as a primary staff branch of a Marine Corps component command headquarters, is responsible for strategic and operational aspects of AVLOG for forces assigned under his cognizance. The AC/S ALD ensures the readiness of assigned aircraft, support equipment, mobile facilities, and aviation munitions by providing support and sustainment. The AC/S ALD advises Marine component commanders on readiness, policies, deliberate planning, organization, functions, and operations. The AC/S ALD also reviews and assists in preparation or revision of weapon systems planning documents, program planning documents (PPDs), and other long-range AVLOG planning tools. When directed, the ALD deploys in support of a Marine Corps forces component command headquarters. The AC/S ALD is responsible for management, distribution, and accountability of mobile facilities and ancillary equipment. The ALD provides AVLOG assistance as required to bases and stations. Each Marine Corps forces component command ALD—aircraft maintenance, aviation supply, avionics, ordnance, aviation logistics information management and support, and future operations—has special functions.

Aircraft Maintenance

The aircraft maintenance department must—

- Provide counsel to the AC/S ALD and other staff sections on all aviation maintenance-related matters.
- Develop and coordinate with NAMP policy steering committee on maintenance/materiel policy and procedures.
- Participate with external aviation support activities in all decisionmaking processes that relate to deployability and sustainability.
- Ensure the appropriate application and allocation of AVLOG support for unit deployments, exercises, and contingency operations.
- Collect and analyze maintenance, management, and materiel readiness data to determine logistic support shortfalls and provide corrective action recommendations.
- Provide technical assistance to subordinate units and any internal staff section on the status

of aircraft maintenance or the degradation of aviation capabilities.
- Monitor engine, airframe, and associated support equipment maintenance and modifications.
- Coordinate aircraft maintenance materiel readiness list (AMMRL) requirements and provide program oversight.
- Assist in the development of AVLOG inputs to OPLAN time-phased force and deployment data (TPFDD).
- Serve as a member of logistic readiness and support programs related to the integrated logistic support management teams, MALSP, and readiness reviews.
- Participate with outside support activities to develop AVLOG support requirements under the amphibious ready group aviation readiness plan and unit deployment program.
- Coordinate with appropriate activities for the enhancement and standardization of aviation maintenance-related AIS.
- Advise on personnel in MOS 60/61XX.
- Review, analyze, and evaluate managerial and performance data in relation to the aviation maintenance effectiveness and readiness posture of the force.

Aviation Supply

The aviation supply department must—

- Provide counsel to AC/S ALD and other staff sections on all aviation supply-related matters.
- Advise subordinate commands on aviation supply concerns.
- Maintain liaison with higher and adjacent commands on 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.
- Be the point of contact for aviation supply-related affordability issues.
- Participate in all activities that identify and resolve significant aviation supply issues negatively impacting force readiness.
- Review, analyze, and evaluate managerial and performance data related to 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.
- Conduct active participation in allowance issues including modeling, funding, and filling allowances.
- Participate with outside support activities to develop AVLOG support requirements under the amphibious ready group aviation readiness plan and unit deployment program.
- Coordinate enhancements and standardization of aviation supply-related AIS with appropriate activities.
- Maintain involvement in all flight hour program funding issues.
- Provide advice on matters related to personnel in MOS 66XX.

Avionics

The avionics department must—

- Provide counsel to the AC/S 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 and TYCOM's SME for the force mobile facility program.
- Validate requirements and direct redistribution of special mission MEU equipment, tactical air electronic warfare equipment, and defensive electronic countermeasure equipment.
- Validate requirements and participate in modernization efforts of L-Class (LHA/LHD/LPD [amphibious transport dock]) ships related to

aircraft intermediate maintenance department avionics support and integration of Marine Corps mobile facilities.
- Perform functions related to the movement of MALS components required aboard the T-AVB.
- Furnish technical assistance to subordinate units and internal staff sections as required on matters relating to avionics.
- Provide representation at meetings, conferences, and reviews dealing with avionics programs and associated equipment, such as the avionics operational advisory group, integrated logistics support management team, or program reviews.
- Validate requirements and coordinate support of the meteorology and calibration program, precision measurement equipment program, and automatic test equipment.
- Coordinate engineering technical services with supported wings, local Naval Air Technical Data and Engineering Service Command, and TYCOMs in support of operational units.
- Provide advice on matters related to personnel in MOSs 63XX/64XX.
- Coordinate enhancements and standardization of avionics-related AIS with appropriate activities.

Ordnance

The ordnance department must—

- Provide counsel to the AC/S ALD and other staff sections as required on all aviation ordnance-related matters.
- Function as component adviser to the combatant commander (J-4) for Marine Corps Class V(A) ammunition logistic issues.
- Monitor Class V(A) ammunition prepositioning programs.
- Conduct Class V(A) ammunition deliberate planning in support of OPLANs.
- Function as TYCOM's SME for NCEA and training programs.
- Provide oversight of explosives safety programs and serve as senior inspector during explosive safety inspections at Marine activities.
- Monitor Marine aviation support package Class V(A) portion and authorize release of any Marine aviation support package ammunition in ammunition condition code B [serviceable (issue with qualification)] for use.
- Coordinate with Navy fleet combatant commanders to resolve Class V(A) ammunition shortfalls.
- Coordinate with fleet combatant commander ordnance storage/load plans for air station ammunition allowances for training and prepositioned wartime reserves.
- Provide status of in theater Class V(A) ammunition, such as expenditures, assets on hand by location, and status of inbound assets, to appropriate internal staff during combat/contingency operations.
- Coordinate ordnance-specific weapons requirements, such as expeditionary storage magazines and combat aircraft loading areas, and ordnance-specific construction requirements, such as expeditionary ammunition storage berms.
- Register Class V(A) ammunition allowances through OIS-W to monitor, review, and provide guidance to subordinate commands for inventory management, inventory accuracy, accountability, and reporting of Class V(A) assets.
- Monitor matters concerning the Ordnance Information System-Marine Corps (OIS-MC)
- Act as a liaison and monitor matters affecting deployed forces afloat, such as training, predeployment preparations/milestones, and Marine Corps/Navy integration operability issues.
- Monitor, review, and provide guidance to subordinate commands for arms, ammunition, and explosives security.
- Validate and approve Class V(A) priority 03 ammunition requisitions provided by major subordinate commands.
- Represent MARFORCOM; MARFORPAC; and Commander, United States Marine Corps Forces Reserve as a member of executive working group committees charged with review of publications concerning aviation ordnance

standing operating procedures (SOPs) and explosive safety manuals.
- Manage fleet weapons support team personnel support of conventional and air-launched weapons requirements.
- Provide advice on matters pertaining to MOS 65XX personnel.
- Coordinate with appropriate activities, enhancements, and standardization of aviation ordnance-related AIS.
- Serve as a member of nonnuclear ordnance requirement (NNOR) executive working group for MARFORCOM.

Aviation Logistics Information Management and Support

The aviation logistics information management and support department must—

- Provide counsel to the AC/S ALD and other staff sections on all aviation information technology-related matters.
- Develop and coordinate information technology policy.
- Participate with external aviation support activities in all decisionmaking processes that relate to information technology deployability and sustainability.
- Collect and analyze AIS readiness data to determine information technology support shortfalls and provide recommendations for corrective actions.
- Provide guidance to subordinate units and any internal staff section on the status of information technology systems or the degradation of services.
- Maintain involvement on present and future budget requirements directly impacting AIS capabilities.
- Participate with outside support activities to develop and facilitate information technology support requirements for unit deployments.
- Coordinate with appropriate activities regarding enhancements and standardization of AVLOG information technology.
- Monitor the execution of AIS functions relating to MALSP.
- Identify, coordinate, and synchronize AVLOG information technology requirements and implementation for new information technology platforms.
- Coordinate, collect, and analyze all present and future requirements to component headquarters for consideration to the Marine Requirements Oversight Council.
- Advise HHQ on all AIS-related matters, such as the equipment status report.
- Review, analyze, and evaluate managerial and performance data related to the aviation information systems effectiveness and readiness posture of the force.
- Provide representation at meetings, conferences, and reviews dealing with information technology and associated equipment, such as the AVLOG operational advisory group, NTCSS integrated logistics support management team, training standards requirements review, or transition task force meetings.
- Validate information technology requirements and coordinate support of information technology systems.
- Represent MARFORCOM and MARFORPAC as a member of executive working group committees charged with review of publications concerning aviation information technology systems SOPs.
- Coordinate enhancements and standardization of information technology systems with appropriate activities.
- Advise AVLOG executive steering committee on all matters of information technology interests within the naval aviation enterprise.

Future Operations

The future operations department must—

- Coordinate and execute all functions of aviation logistics deliberate planning with the combatant commander, Service component, TYCOM, and fleet participants.

- Produce Joint Strategic Capabilities Plan supporting plans and AVLOG annexes and appendices as required by the Joint Operation Planning and Execution System (JOPES) and MCWP 5-1, *Marine Corps Planning Process*.
- Identify and develop joint mission-essential task list requirements for component AVLOG requirements.
- Coordinate component AVLOG participation in joint and Service exercises.
- Identify and develop master scenario events list to maximize component and MSC AVLOG participation in joint and Service exercises.
- Coordinate crisis action planning (CAP) and execution for AVLOG RSOI and follow-on Service logistic sustainment.
- Develop and monitor peacetime and contingency commander's critical information requirements.
- Coordinate component policy development for geoprepositioning programs.
- Coordinate Reserve Component force integration requirements for peace and contingency.
- Coordinate and monitor AVLOG support aboard MPSs.
- Provide representation and leadership at conferences, meetings, and reviews dealing with AVLOG planning and contingency requirements.
- Coordinate AVLOG requirements through Service and combatant commander channels.
- Provide AVLOG input for combatant commander integrated priority list.
- Coordinate and provide AVLOG input for component input to combatant commander's Joint Monthly Readiness Review.
- Participate in and coordinate AVLOG input to component headquarters for consideration to the Marine Requirements Oversight Council.
- Coordinate and provide AVLOG input for combatant commander and Service planning, programming, and budgeting system issues and documents.
- Identify, coordinate, and synchronize AVLOG requirements and implementation for new aviation platforms.

Marine Corps Operating Forces

The Marine Corps operating forces constitute the forward presence, crisis response, and fighting power available to joint force commanders. Marine Corps operating forces consist of Marine Corps forces assigned to combatant commanders or retained under the control of the Commandant, the Marine Corps Reserve under the control of the Commandant, security forces under the control of designated fleet commanders, and special activity forces under the control of the Secretary of State. 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 coordinates and manages strategic and operational logistic support issues.

The MARFORCOM/MARFORPAC ALD, with the respective G-3 (air) and G-4, determines AVLOG requirements, including the AVLOG support provided by the MALS and the CSS/AGS required to support MALS operations. The MARFORCOM/MARFORPAC ALDs advise the commander on the readiness status of AVLOG support packages, identify requirements, and recommend priorities and allocations for AVLOG support in all functional areas. They work closely with assigned forces, specifically the assigned wing (ALD) sections regarding the following AVLOG responsibilities:

- Providing advice on the readiness status of AVLOG support packages.
- Developing policies and identifying requirements, priorities, and allocations for AVLOG support.
- Integrating AVLOG operations with logistic support from external commands or agencies.
- Supervising the execution of the commander's orders regarding AVLOG.
- Ensuring that the concept of AVLOG clearly articulates the commander's vision of AVLOG and supports the tactical concept of operations and the scheme of maneuver.

- Conducting deliberate and CAP, integrating AVLOG into overall CSS concept of support.
- Conducting RSOI planning for the AVLOG concept of support.
- Developing 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 nonsupportable requirements to the appropriate higher/external command.
- Coordinating with the amphibious task force N-4 for the AVLOG provided under ACE MAW ALD/MALS S-3 cognizance.

Marine Expeditionary Force, Class V(A) Logistic Support

Aviation ordnance is the only AVLOG function staffed at the MEF. The MEF aviation ordnance officer assists the deployed and preparing to deploy MEU and ACE in matters related to aviation ordnance requirements and logistic support. The MEF aviation ordnance officer also serves as a liaison for other AVLOG matters for the MEF and coordinates with MARFORCOM/ MARFORPAC or wing as required. Specific areas of responsibility are to—

- Provide counsel to AC/S G-4 and other staff sections as required on all aviation ordnance-related matters.
- Administer Class V(A) ammunition prepositioning programs.
- Conduct Class V(A) ammunition deliberate planning in support of OPLANs.
- Administer alert contingency MAGTF Class V(A) ammunition package.
- Coordinate with MARFORCOM and/or MARFORPAC to resolve Class V(A) ammunition shortfalls.
- Provide status of in theater Class V(A) ammunition to appropriate internal staff during combat/contingency operations, such as expenditures, assets on hand by location, and status of inbound assets.
- Coordinate ordnance-specific weapons requirements (e.g., expeditionary storage magazines and combat aircraft loading areas) and ordnance-specific construction requirements (e.g., expeditionary ammunition storage berms).
- Provide technical advice on and coordinate matters pertaining to Class V(A) ammunition, aircraft release/launch systems and armament weapons support equipment (AWSE).
- Conduct liaison on matters affecting deployed forces afloat (e.g., training, predeployment preparations/milestones, and Marine Corps/ Navy integration operability issues).
- Monitor, review, and provide guidance to subordinate commands for arms, ammunition, and explosives security.
- Advise on MOS 65XX personnel.

Marine Aircraft Wing Aviation Logistics Department

The mission of the MAW ALD is to assist subordinate MAGs in matters related to aviation materiel readiness and internal materiel management of weapon systems and advise the commander on all AVLOG matters. The ALD's goals are to maintain high aircraft and system readiness, minimize costs associated with maintaining aircraft, and improve AVLOG efficiency. This is accomplished through close coordination with HHQ, supporting naval and commercial organizations, and subordinate commands. The ALD organization consists of six core functional branches—aircraft maintenance, aviation supply, avionics, aviation ordnance, AVLOG plans, and AVLOG information management and support. These functional branches work in conjunction with other MAW branches, HHQ, subordinate units, and outside agencies in support of the overall AVLOG mission.

Aircraft Maintenance Branch

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 subordinate MAGs. The aircraft maintenance officer and staff are the principal points of contact for coordinating aircraft materiel readiness between the aircraft TYCOM; the MAW commander; and the assigned MAGs. The branch also—

- Implements and coordinates aircraft maintenance policy within the MAW.
- Conducts liaison with external agencies in support of aircraft readiness within supported MALS.
- Coordinates aircraft maintenance support for ship and unit deployments.
- Performs aircraft data analysis and aviation program management.
- Performs aircraft, engine, and support equipment accounting.
- Develops and disseminates aircraft materiel readiness reports.
- Performs cognizance and policy control of the central technical publications library.
- Coordinates scheduling of D-level repair for aircraft, systems, engines, and support equipment.
- Performs cognizance and policy control of the IMRL program.
- Coordinates the assignment of personnel in the 60/61XX MOSs.
- Coordinates with the ALIMS branch on changes/updates to MALSP and the use of the T-AVB.

Aviation Supply Branch

Primary branch responsibilities include coordinating aviation materiel (such as inventory management, distribution, storage, and transportation), financial matters, training, and related programs in support of squadrons assigned within subordinate MAGs. The aviation supply officer and staff are the principal points of contact for coordinating aviation supply matters between the aircraft TYCOM; the MAW commander; and the assigned MAGs. The branch also—

- Implements and coordinates aviation supply policy within the MAW.
- Coordinates with the MAW comptroller on all matters concerning operations, maintenance, and Navy expenditures.
- Conducts liaison with external agencies in support of aircraft readiness within supported MALS.
- Coordinates aviation materiel support for ship and unit deployments.
- Coordinates the assignment of personnel in the 6602, 6604, and 6672 MOSs.
- Analyzes aviation supply and financial management performance.
- Monitors weapon system materiel support transitioning from commercial supply to Navy supply.
- Coordinates with the ALIMS branch on policy development input to HHQ for changes/updates to NTCSS and other aviation logistic information systems.

Avionics Branch

The primary responsibilities of the avionics branch include managing all avionics policy matters and readiness issues within the wing. In addition, the branch—

- Manages all mobile facility and supporting equipment and coordinates the procurement and distribution of mobile facility assets between higher and lower echelons.
- Maintains a serialized inventory of selected electronic countermeasures equipment and coordinates its assignment to units within the wing.
- Coordinates the assignment of personnel in the 63XX/64XX MOSs.

- Coordinates engineering technical services with supported MAGs, local Naval Air Technical Data and Engineering Service Command, and TYCOMs in support of operational units.
- Coordinates with senior and subordinate headquarters to ensure supported operational units have custody of required aircraft mission-essential equipment.
- Coordinates between senior and subordinate headquarters to ensure prompt verification of rapid action minor engineering changes.
- Coordinates and provides oversight to calibration services performed by subordinate units.

Aviation Ordnance Branch

The primary responsibility of the aviation ordnance branch is managing Class V(A) munitions and serving as the principal point of contact for coordinating aviation ordnance matters and policy between the supported MAGs and the functional TYCOM. The branch also—

- Monitors the NCEA provided to sustain the supported MAGs.
- Manages aircraft armament equipment (AAE) prime pool under the cognizance of the functional TYCOM.
- Coordinates the assignment of personnel in the 65XX MOSs.
- Monitors the Personnel Qualification and Certification Program for Class V Ammunitions and Explosives as administered by subordinate commands.
- Monitors the Marine Corps Ammunitions and Explosives Safety Program as administered by subordinate commands.
- Registers Class V(A) ammunition allowances through OIS-W to monitor, review, and provide guidance to subordinate commands for inventory management, inventory accuracy, accountability, and reporting of Class V(A) ammunition.
- Assists the G-3 in compiling testing and training requirements from subordinate commands for submission to HHQ.
- Monitors matters concerning the OIS-R.
- Monitors, reviews, and provides guidance to subordinate commands for arms, ammunition, and explosives security.
- Conducts Class V(A) ammunition deliberate planning in support of OPLANs.
- Represents MARFORCOM and MARFORPAC as a member of executive working group committees charged with review of publications concerning aviation ordnance SOPs and explosive safety manuals.

Aviation Logistics Plans Branch

Primary responsibilities of the AVLOG plans branch include developing, coordinating, and assessing the AVLOG elements TPFDD required for deliberate and crisis action war plans. The AVLOG plans officer and staff are the points of contact between the MALS and the MEF. They provide the key information on CSP data, lift requirements, and AVLOG phasing into theater. Other key responsibilities are to—

- Coordinate MAW policy development input to HHQ for geoprepositioning programs, update to the MAGTF logistics automated information system (LOGAIS) family of systems, and update MALSP doctrine to include the use of the 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 on current and future OPLANs/CONPLANs.
- Develop force deployment planning and execution (FDP&E) options with deliberate planning.
- Provide the input for the MEF/Marine Corps component commanders AVLOG annex.

Aviation Logistics Information Management and Support Branch

Primary responsibilities of the ALIMS branch include managing all AIS policy matters and

coordinating information systems matters between assigned MAGs, MAWs, and TYCOMs. The branch also—

- Implements and coordinates AIS policy within the MAW.
- Coordinates with MAW G-6 on all matters concerning information technology employment and policy.
- Coordinates AIS support for ships and unit deployments.
- Coordinates assignment of aviation information systems specialists (MOS 6694).
- Conducts liaison with external agencies in support of AIS.
- Coordinates with all MAW logistic branches on policy development input to HHQ for changes/updates to NTCSS and other AIS.
- Provides counsel to the AC/S ALD and other staff sections on all aviation information technology-related matters.
- Participates with external aviation support activities in all decisionmaking processes that relate to MAW information technology deployability and sustainability.
- Collects and analyzes AIS readiness data to determine information technology support shortfalls and provide recommendations for corrective actions.
- Provides guidance to subordinate units and any internal staff section on the status of information technology systems or the degradation of services.
- Maintains involvement on present and future budget requirements directly impacting AIS capabilities.
- Participates with outside support activities to develop and facilitate information technology support requirements for unit deployments.
- Coordinates with appropriate activities regarding enhancements and standardization of AVLOG information technology.
- Monitors the execution of AIS functions relating to MALSP.
- Identifies, coordinates, and synchronizes AVLOG information technology requirements and implementation for new information technology platforms.
- Advises HHQ on aviation information systems specialists.
- Advises HHQ on all AIS-related matters, such as the equipment status report.
- Reviews, analyzes, and evaluates managerial and performance data related to aviation information systems effectiveness and readiness posture of the force.
- Provides representation at meetings, conferences, and reviews dealing with information technology and associated equipment, such as the AVLOG operational advisory group, NTCSS integrated logistics support management team, training standards requirements review, and transition task force meetings.
- Validates information technology requirements and coordinates support of information technology systems.
- Represents the MAW as a member of executive working group committees charged with review of publications concerning aviation information technology systems SOPs.

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CHAPTER 3
MARINE AVIATION LOGISTICS SQUADRON

The MALS provides AVLOG support, such as aviation-specific maintenance, ordnance, avionics, and supply, for subordinate units of a fixed-wing or rotary-wing 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.
- Provides Navy-specific supply support to the MWSS EAF and weather sections.
- Requires motor transport and engineering support from the MWSS to conduct Class V(A) ammunition distribution and establish mobile facility sites.
- Provides information technology support.

Each MALS, Active Component or Reserve Component, can perform the following core functions:

- Provide 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 logistic support to ACE squadrons. This support encompasses the requisitioning, storage, handling, assembly, transportation, and inventory management reporting of Class V(A) ammunition. The MALS must be capable of planning for and operating an ammunition issue point at expeditionary sites.
- Interpret, implement, audit, inspect, and provide oversight for the MAG commanding officer for all policies and procedures relating to the administration and management of operations and maintenance, Navy funds (less temporary additional duty funds), aviation supply, aircraft maintenance, aircraft ordnance, avionics, cryogenics, and information technology support for all units within the MAG/ACE.
- Coordinate with the 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 nonserviceable aeronautical equipment/materiel 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 information technology support to facilitate execution of the aviation supply, maintenance, and Navy-funded financial functions of the MAG/ACE.

Maintenance Department

The AVLOG functions of the MALS maintenance department include aircraft, avionics, ground support equipment (support equipment) maintenance, flight equipment, cryogenics, and maintenance data collection and analysis. All available talents and resources are used to ensure components are repaired to the highest standard of quality to further enhance the warfighting

capabilities of the tactical squadrons. Specific responsibilities are to—

- Coordinate control of aircraft maintenance performed by and in support of squadrons and units under the cognizance of the MAG commanding officer and control of materiel condition and combat readiness of assigned weapon 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 temporary augmentation personnel as required for training in the maintenance of organic systems and subsystems by the I-level.
- Coordinate predeployment planning for the provisioning of personnel, facilities, support equipment, 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.
- Track aircraft assignments within the MAG.
- Maintain liaison with supported squadron maintenance materiel control centers and the aviation supply department (ASD) and ensure adequate validation and reconciliation of outstanding requirements take place.
- Monitor MAG squadrons to ensure an effective maintenance program is being conducted.
- Monitor MAG squadrons to ensure an active and effective quality assurance monitoring program exists.
- Monitor MAG squadrons to ensure correct maintenance, administration, and materiel 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 the assignment of aircraft parking spaces within the MAG with the MAG S-4.
- 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 nonflyable 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 perform a quarterly review of the MALS individual component repair list.
- Conduct regular meetings, chaired by the maintenance officer and cochaired by the aviation supply officer, 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.

Avionics Department

The avionics department provides maximum support, coordination, and leadership to the mission of the MALS regarding aircraft maintenance, avionics equipment maintenance, integrated logistic resource management, and professional personnel development. Management of the MALS avionics department is the responsibility of the MALS avionics officer and is accomplished by interpreting and implementing avionics policies and procedures for the MALS commander.

All maintenance and support of MALS, supporting activities, and avionics equipment—to include weapons repairable assemblies, shop repairable assemblies, support equipment, test measuring and diagnostic equipment—are performed by personnel assigned to the avionics department. These functions encompass programs, equipment, and support for activities internal and, occasionally, external to the MAG. The avionics department, responsible to the commanding officer, has the overall responsibility within the MALS for the scheduling, prioritization, and production of avionics equipment.

An avionics department exists within each MALS and consists of the following functional branches: avionics branch, precision measurement equipment branch, mobile facility branch, and various production branches necessary to support the MAG's flying squadrons. Each branch is responsible for the maintenance of its avionics equipment, the welfare of its personnel, an accurate accountability of work center IMRL assets, and individual branch security. The avionics branch is responsible for overall department administrative duties and I-level maintenance on avionics equipment. Depending on the type of aircraft supported, the avionics branch may contain up to five work centers: communications/navigation, electrical/equipment repair, automatic test equipment, electronic warfare, and radar.

Aviation Ordnance Department

The function of the aviation ordnance department is to provide the MALS with logistical and management support of Class V(A) ordnance, AAE, and AWSE by interpreting and implementing the ordnance policies and procedures for the MAG. The MALS ordnance staff—

- Ensures the management and distribution of authorized NCEA.
- Assists the MAG (S-3) in developing, testing, and training requirements for aviation ordnance.
- Ensures proper logistical support and storage requirements for prepositioned war reserve materiel (WRM) are identified, including buildup and delivery of Class V(A), ammunition stock points, advanced bases, and forward arming and refueling points.
- Manages the MAG's ordnance safety program and ensures explosive safety policies and procedures are issued and adhered to.
- Ensures compliance with the policies and procedures set forth in OPNAVINST 8000.16C when preparing quality deficiency reports, explosive mishap reports, technical publication deficiency reports, and engineering investigation requests.
- Ensures Class V(A) ammunition is managed according to the current revision of NAVSUP P-724, *Conventional Ordnance Management Policies and Procedures*, and other related directives.
- Establishes and monitors the handling, qualification, and certification program for nonnuclear aviation ordnance and nonnuclear explosive devices for the MALS.
- Establishes and maintains a satellite production control work center.
- Analyzes department production and readiness using reports provided by the MDS.
- Ensures satellite production efforts support the maintenance department's goals, objectives, and standards.
- Publishes a monthly maintenance and training plan for airborne weapons, training assets, AWSE, AAE, and formal in-service training of aviation ordnance personnel.
- Ensures all maintenance performed on the AAE pool and AWSE aligns with the NAMP and the naval ordnance management policy.
- Provides information on manpower, equipment, Class V(A) ammunition, and facilities to appropriate authorities.
- Establishes a verification program for technical manuals and directives maintained by the division.

- Establishes and maintains an AAE pool in accordance with the naval ordnance management policy and TYCOM requirement.
- Ensures the OIS is used to manage Class V(A) ammunition.
- Ensures the department maintains the capability to operate from advanced bases and forward arming and refueling points.
- Coordinates predeployment planning for ordnance personnel, Class V(A) ammunition preposition requirements, facilities, support equipment, tactical vehicle support, and services to support squadrons according to Naval Sea Systems Command Ordnance Publication 5, Volume III, *Ammunition and Explosives Ashore: Advanced Bases*.
- Screens squadron ordnance requests and the availability of Class V(A) ammunition to ensure only essential assets embarked.
- Ensures appropriate levels of support are identified in the TPFDD database.

Aviation Supply Department

The ASD executes all storage, inventory, condition, and management functions of Navy-provided, aeronautical-related materiel. The ASD staff functions include the responsibilities listed in the following subparagraphs. An ASD exists within each MALS and their preferred locations are adjacent to the aviation maintenance department. The hours of operation will normally be twenty four hours a day, seven days a week but may be modified from time to time at the direction of the aviation supply officer/chief.

Supply Response Division

The supply response division is responsible for the initial screening and technical research of all requisitions ordered through NALCOMIS or DD [Department of Defense] Form 1348-6, *Single Line Item Requisition System Document*. The supply response division will refer consumable requisitions that cannot be filled from supply officer stores to the appropriate supply point of entry. The supply response division is also responsible for the reconciliation and monitoring of all outstanding direct turnover (DTO) requisitions, except for custodial, pre-expended bins, and service market items.

Consumables Management Division

The consumables management division is responsible for the procurement, receipt, storage, issue, delivery, servicability, and inventory of all consumable materiel. The consumables management division consists of the following five branches:

- The receiving branch receives and redistributes all materiel shipped to the MAG/MALS from external sources.
- The consumable delivery branch delivers all consumable issues and DTO receipts and processes-related transactions.
- The consumables storage branch stores, issues, and inventories 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 manages inventory of consumable materiel.
- The pre-expended branch establishes, manages, and replenishes pre-expended bin sites authorized by the aviation supply officer or maintenance officer.

Repairables Management Division

The repairables management division is responsible for—

- Repairables allowance management, procurement, receipt, storage, issue, delivery, servicability, and inventory of all repairable materiel.
- Induction and recovery of repairables into/from the IMA and for shipment and tracking beyond the capability of maintenance components to the appropriate activity.
- Management and control of all classified and fleet-controlled materiel (repairable and consumable).

The repairables management division consists of the following five branches:

- The repairables control branch—
  - Establishes and maintains repairable allowances and is responsible for their procurement, inventory, and accountability.
  - Processes most repairable requisitions and receipts and all repairables returned from the IMA.
  - Screens and tracks carcasses that are beyond the capability of maintenance.
  - Performs receipt, storage, issue, packaging, and shipment duties on classified materiel. Procedures for handling classified materiel are detailed in Secretary of the Navy Instruction 5510.36, *Department of the Navy (DON) Information Security Program (ISP) Instruction,* and OPNAVINST 5218.7, *Navy Official Mail Management Instructions.*
- The repairables delivery branch delivers all repairable materiel (issues and DTO) to the customer. It also picks up all nonready-for-issue repairable components from the customer ensuring accuracy of all documents, such as the logbook, scheduled removal card, 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—weapons repairable assembly and shop repairable assembly.
- The awaiting parts branch stores and manages repairable components awaiting repair parts.
- The supply shipping branch packages and ships all aeronautical-related components and equipment.

Supply Accounting Division

The supply accounting division is responsible for all tasks related to maintaining and reporting the financial accounts granted to the ASD. The supply accounting division consists of two branches—the end use branch and the stock fund branch. The end use branch maintains and reports all end use accounts allocated to the ASD and is divided by operating target (OPTAR) funding. The stock fund branch reports transactions that affect the Navy Working Capital Fund (NWCF) special accounting code (SAC) 207 inventory. It also verifies the financial processing of all transactions processed by the MALS.

Squadron Support Division

The squadron support division is responsible for receiving, processing, and monitoring all requirements for aeronautical-related custodial materiel and maintaining custody records for all organizational allowances. The squadron support division consists of the customer assistance branch and the custody records branch. The customer assistance branch receives, processes, and monitors all requirements for aeronautical-related custodial materiel. The custody records branch maintains the custody record cards for all organizational allowance materiel, such as IMRL; TBA; COSAL; controlled equipage listed in the Naval Air Systems Command Manual 00-35QH-2 (Section H), *NAVAIR Allowance List for Aviation Life Support System and Airborne Operational Equipment for Aircraft Squadrons Navy and Marine Corps*; and maintenance assist modules/test bench installations. This branch also formulates the quarterly and annual budgets and the midyear budget review for all custodial materiel.

Supply Management Division

The supply management division is 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 supply management division consists of the audit branch, which monitors all supply functions within the ASD to ensure compliance with authorized procedures and achievement of established goals, and the MALSP support branch, which validates and loads MALSP allowances and monitors pack ups.

Supply Personnel and Administration Division

The supply personnel and administration division is responsible for the administrative control of all personnel assigned. The supply personnel and administration division performs clerical functions and maintains the master files of all messages, orders, correspondence, and directives for the ASD. The supply personnel and administration division consists of the supply personnel branch, which performs functions related to administrative control of all personnel within the ASD, and the supply administrative branch, which provides clerical assistance for the ASD as directed by the aviation supply officer or the aviation supply chief.

Marine Aviation Logistics Squadron Operations Department

The MALS is a command entity that is similar to other Marine squadrons. The MALS operations officer is the chief advisor to the MALS commanding officer for all matters pertaining to the planning and execution of tactical operations involving aviation logistic support. The MALS operations department identifies, plans, coordinates, and supervises all operational AVLOG planning requirements.

Marine aviation logistics squadron operations department coordinates with both the parent MAG and each supported squadron regarding ALS for deployed squadrons and detachments. Additionally, it serves as the MALS point of contact for all deployment support involving the unit deployment program, L-class/aircraft carrier (CV)/ aircraft carrier (nuclear) (CVN), and T-AVB/MPF employment plans and milestone reporting. It is also responsible for AVLOG FDP&E as it relates to deliberate planning and CAP.

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 TPFDD and its placement into the JOPES. The following steps will be followed by the MALS operations department during the deliberate planning process:

- Coordinate the range and depth of AVLOG support required for the concept of operations as defined by the MAW AVLOG plans section.
- Review all plans that require employment of AVLOG and Class V(A) support and coordinate operational AVLOG as required to support each plan.
- Coordinate review of OPLANs/CONPLANs with internal MALS departments.
- Determine, in coordination with consolidated administration, assignment of MALS core and augments personnel to—
  - MPS survey, liaison, and reconnaissance party, arrival and assembly operations element, and offload preparation party.
  - T-AVB.
  - CV/CVN/LHA/LHD.
  - Ashore ACE beddown airfield.

The MALS operations department also reviews each applicable deliberate plan and determines—

- If the commander's intent and end state for each deliberate plan/CONPLAN have been met.
- The employment, configuration, and coordination of arrival date of the T-AVB.
- The TPFDD flow of AVLOG assets into the theater of operations.
- Each MALS unit line number is identified on the TPFDD.
- Site survey for the MALS beddown sites.
- Geoprepostioned support equipment offload distribution and assignment plan.

Crisis Action Planning

The CAP performed by AVLOG 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 a tool to develop tailored support. If the crisis is in response to a contingency for which no deliberate planning has been previously conducted, aviation logistic support must be tailored without the benefit of existing data. During CAP, the MALS 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 CAP is established.
- Coordinating the development and implementation of troop movements from home station to the seaport/aerial port of embarkation.
- Coordinating with other MALS departments/sections to identify and tailor aviation logistic support.
- Determining priorities for MALS personnel replacements in coordination with the S-1.
- Coordinating MALS operations security and signal security.

Aviation Logistic Information Management and Support Department

The ALIMS Department is responsible for the administration, operation, and maintenance of all computer systems and networks throughout the MAG. The ALIMS Department also serves as a liaison to external agencies regarding information technology issues. The ALIMS Department consists of the following three divisions:

- The administration division performs personnel administration and quality assurance. It performs clerical functions and maintains the master files for messages, orders, correspondence, directives, and personnel records for ALIMS. Quality assurance is responsible for inspecting and auditing ALIMS functions within the MAG to ensure compliance with appropriate orders and directives.
- The customer support division provides direct support to MAG units for all AVLOG information technology systems. It provides technical support, issue and receipt of assets, production control, asset management, maintenance, local area network support, materiel management, and validation of AVLOG information technology requirements.
- The network support division provides direct support to all AVLOG MAG units. The division is responsible for network and system administration, including the administrative and operational control of the NTCSS and naval air fleet system array (NFSA).

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CHAPTER 4
COMMAND AND CONTROL INFORMATION MANAGEMENT SYSTEMS

Logistic information management at the tactical level ranges from manual methods to employment of sophisticated AIS. Marine Corps aviation organizations down to the squadron level have organic AIS capabilities to manage the maintenance and logistic requirements of aircraft, aeronautical materiel, and aviation weapons and ordnance. Each organization has networked computer systems to support data input and processing of various information requirements. Aircraft squadrons/MALS 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 ALIMS section supervises the MALS's/aircraft 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. There are a variety of AISs supporting naval aviation. These systems are managed, controlled, and funded by the Navy for use by and distribution to naval aviation (Navy/Marine Corps) activities and supporting establishments. This chapter discusses most of the major mission-critical AISs peculiar to aviation logistics.

Naval Tactical Command Support System

The NTCSS is included in the AIS and is under the management of PEO C4I. It provides a full range of responsive mission support AIS hardware and software to facilitate management of information, materiel, and funds required to maintain and operate aircraft. Specifically, NTCSS supports O- and I-level maintenance, indirect supporting activities' aviation maintenance management, and materiel and financial management.

The NTCSS, as a family of systems, incorporates the functionality provided by NALCOMIS OOMA, NALCOMIS Optimized IMA, RSUPPLY, OOMA (organizational at intermediate), and the integrated barcode system (IBS) 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. The NTCSS provides tactical commanders and AVLOG managers the required mission support information for tactical decisions and improved equipment supportability and maintainability and results in a commensurate enhancement in the materiel condition and combat readiness of aviation units.

The optimized 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.
- Reduce the administrative burden on the fleet.
- Improve the quality of upline reported data.

Naval Aviation Logistics Command Management Information System Optimized Organizational Maintenance Activity

The NALCOMIS OOMA provides effective AIS capability to satisfy various functional

requirements of the 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. It enables the organization to manage maintenance and supply processes by allowing users to enter, collect, process, store, review, report, and interface required data. These detailed processes support—

- Aircraft, engines, assets, EAF components, and support equipment repair.
- Materiel requisitions.
- Direct and indirect support materiel control.
- Personnel, aircraft, and equipment assignment and deployment.
- Subcustody of equipment.
- Utilization of resources.
- Additional actions at the O-level.

The major functions required by the O-level are combined into one system that shares 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 OOMA are divided into eight subsystems and two utilities.

The subsystems are—

- *Database Administration*. 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.
- *Maintenance*. This subsystem collects and processes maintenance-related data and provides this data to other subsystems on the database.
- *Flight*. This subsystem collects and processes flight-related data and provides this data to other subsystems on the database.
- *Logs and Records*. This subsystem provides the ability to establish and maintain configuration profiles on aircraft, engines, modules, and components assigned to the O-level.
- *Asset*. This subsystem provides the ability to inventory and process inspection-related data on O-level assigned assets, such as aeronautical equipment, support equipment, IMRL, EAF equipment, and the aviation life support system.
- *Data Analysis*. This subsystem enables O-level maintenance, management, and materiel analysts to approve MAFs and flight records for upline submission to the data services facility; correct, delete, and reinduct MAFs and flight documents; perform end-of-month MAF closeout processing; and generate MAF audit reports.
- *Technical Publications*. This subsystem reserved for future use.
- *Reports*. This subsystem provides the ability to select and produce reports.

The utilities are—

- *Ad Hoc Query*. This utility enables users to create reports to meet their specific needs. The reports may be derived from selected database tables allowing the manager to gather data in various areas, such as aviation maintenance, management, and materiel reports; flight reports; trend analysis; manpower utilization; user login identification; special maintenance qualification assignments; and specific workload reports.
- *System Administrator Management Menu*. This utility provides the system administrator/analyst with the ability to maintain the system configuration. The system administrator management menu includes—
  - Application administration.
  - System utilities.
  - Detachment processing.
  - Mail/messages facility.
  - Printer management.
  - Process status.
  - System initialization.
  - Operating system security management.
  - Queue management.

Naval Aviation Logistics Command Management Information System Optimized Intermediate Maintenance Activity

Used at the MALS, NALCOMIS Optimized IMA 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 support equipment repair, materiel requisitions, repairables management, awaiting parts 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 and share a database, which avoids duplication of related data among 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 communication among users in the MALS is accomplished through online mailbox and hardcopy report notices, which are distributed on preassigned work center printers.

The major functions of NALCOMIS Optimized IMA that provide support to the MALS are divided into the following ten subsystems, which contain similar processes:

- *Database Maintenance*. This subsystem allows the database administrator to establish and maintain data within NALCOMIS Optimized 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. This subsystem also handles the processing of external interface data to update inventory and requisition records.
- *Maintenance Activity*. This subsystem allows maintenance personnel to document maintenance actions, order parts, maintain individual component repair list data, and make inquiries. Actual documentation requirements, such as validation specifications, form descriptions, and field entry requirements, are contained in MALS and other instructions. Any NALCOMIS Optimized IMA-specific documentation requirements are covered in the detailed description of each function or screen. Contingency processing is included in this subsystem.
- *Configuration Status Accounting*. This subsystem contains three sections: aircraft engines, support equipment, and technical directives:
  - Aircraft engine users establish and maintain a database in NALCOMIS Optimized 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 of all information pertaining to assigned support equipment.
  - Technical directives track incorporated and nonincorporated technical directives for aircraft engines, engine modules, engine components, support equipment, and support equipment components.
- *Personnel Management*. This subsystem contains information on assigned military and civilian personnel. The information is used for workload management and to verify authorization for discrepancy signoffs, quality assurance inspections, MAF reviews, and other job-related functions.
- *Asset Management*. This subsystem contains the functions required to maintain inventory and utilization data for support equipment and IMRL items.
- *Materiel Requirement Processing*. This subsystem covers materiel requirements generated by maintenance customers at the O- and I-levels. These requirements include repairable components, consumable repair parts, and indirect materiel support items.

- *Local/Upline Reporting*. This subsystem supports engine transaction records and is reserved for future use.
- *System Support*. This subsystem permits the user to see a listing of the onscreen messages that are awaiting action. In addition, the system administrator uses online functions to review the requests for reports and to release them for subsequent printing.
- *Data Offload/Onload*. This subsystem generates files, reports, and documents for data offload/onload. These items accompany temporarily transferred support equipment and personnel and permanently transferred support equipment, either to or from organizations.
- *Technical Publications*. This subsystem provides an automated technical library tracking system.

Relational Supply

Navy and Marine Corps operating units depend on readiness to ensure mission success. One module of a group of applications comprising the NTCSS is RSUPPLY, which provides the Navy with online inventory, logistic, and financial management tools and automates supply financial management for the operating forces. Relational supply is composed of logistics management, inventory management and financial management.

Logistics Management

The logistics management subsystem provides—

- Automated assistance for supply department materiel control and customer support activities.
- Online collection and maintenance of data on stock items, repairables, and requisitions.
- Online requesting of materiel by supply department customers and automated issue of materiel or creation of requisitions.
- Automation to manage offload or stock transfer.

It further automates preparation, control, recording and reporting of receipts; maintains the status of all requisitions and purchases, including money value only, pushed materiel, and NAVSEASYSCOM-funded initial outfitting type requisitions; and verifies acceptability of various data elements prior to admittance of new data into the system.

Inventory Management

The 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 are processed. The second function—computing, adjusting, and reporting inventory data—implements policies through system-wide inventory data modifications and produces management reports that summarize stock item information held as inventory data. Stocking objectives and allowances are managed within this function.

Financial Management

The financial management subsystem provides support for either manual or automated updates and information queries of all financial data maintained in shipboard uniform automated data processing system-real time. The subsystem is composed of three primary functions: providing automated support for maintaining up-to-date financial data, monitoring and controlling fund expenditures, and producing financial reports and displays. The financial management 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. The two accounting methods incorporated into the financial management subsystem are the—

- *OPTAR*. This method is used to account for activity operations and maintenance funds. All

materiel and expenditures for obtaining services are expended to an annual appropriation upon issue to the unit or obligation for purchase. This accounting method is also performed for any supported units.

- *NWCF SAC 207*. With this method, the accounting aviation supply officer has inventory and fiscal accountability for materiel in stock. Materiel in stores is held in the NWCF and, upon issue, is expended to an annual appropriation with reimbursement to the stock fund. Materiel transferred to other supply officers is retained in the NWCF and reported to the fleet accounting and disbursing center (FAADC) as expended through transfer. The FAADC reconciles transfer expenditures monthly to units involved. Formal inventory control records are maintained and simplified working capital fund returns are submitted monthly to the FAADC.

Optimized Organizational Maintenance Activity (Organizational at Intermediate)

The OOMA (organizational at intermediate) system collects data from O-level maintenance and uploads to NFSA OOMA mid-tier. The second function of OOMA (organizational at intermediate) is to distribute technical data from the OOMA mid-tier to O-level maintenance.

Integrated Barcode System

The IBS is a form of automated information technology that applies barcode technology and automated data entry techniques to materiel receipt and expenditure processing, physical inventory management, configuration accounting, equipage accounting, carcass tracking, and materiel 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. The IBS provides automated functionality to conduct inventories, location audits, and receipts processing using barcode technology and without the use of printed materiel. Inventories or location audits are conducted based on user-determined parameters, such as location range, stock number, or other criteria. Functionality is provided to conduct both scheduled and unscheduled inventories. The IBS also—

- Provides automated support for the performance of inventory count accuracy and quality controls auditing prior to acceptance of the inventory results.
- Provides a capability to automate inventory reconciliation research.
- Determines stock numbers that are out of balance between stock records and inventory results.
- Queries all applicable automated files.
- Presents information found in online or printed reports.

Naval Air Fleet System Array

The NFSA is a group of systems that facilitates current and future management, logistic, and training capabilities for O- and I-level organizations. The NFSA systems include: AIR*Speed*, Aviation Maintenance Training Continuum System (AMTCS), interactive electronic technical manuals (IETMs), Joint Knowledge Caching Server, Naval Aviation Maintenance Discrepancy Reporting Program, and OOMA Mid-Tier.

AIR*Speed*

AIR*Speed* optimizes aviation logistics through rigorous systems analysis and the effective application of continuous process improvement methodologies. Its primary mission is to transform the maintenance and supply chain into an integrated, reliable, demand-pull-based replenishment system.

Aviation Maintenance Training Continuum System

The AMTCS provides early estimates of the manpower, personnel, and training requirements needed to support and sustain current operations.

The primary goal of AMTCS is to provide a seamless training continuum for each aviation technician's level of technical proficiency.

Interactive Electronic Technical Manuals

The IETMs are electronic technical publications that are located in a single database. When queried on a specific maintenance action (corrective, preventative, or troubleshooting), IETMs locate and consolidate all applicable information from the database and provide a customized maintenance solution. They operate with a server-based application that receives continuous updates from the fleet central technical publication librarians, ensuring the most up-to-date technical data.

Joint Knowledge Caching Server

The Joint Knowledge Caching Server is a Web-based "knowledge resource" that provides warfighters with an easy, accessible tool for researching and obtaining accurate, up-to-date data required to support their mission. It automatically receives daily updates to all publications, orders, safety notices, policies, or directives that relate to and support aviation maintenance operations.

Naval Aviation Maintenance Discrepancy Reporting Program

The Naval Aviation Maintenance Discrepancy Reporting Program facilitates the electronic submission and complete processing of discrepancy reports, including engineering investigations, hazardous materiel reports, product quality deficiency reports, and aircraft discrepancy reports.

Optimized Organizational Maintenance Activity Mid-Tier

The OOMA mid-tier system provides operational forces and supporting establishment entities, including DOD and Congressional level staffs, with naval aviation materiel and supply readiness information. This information enables a common picture and understanding of naval aviation capabilities and readiness for key leadership at all levels.

Support Equipment Management System

The support equipment management system is a family of systems that provide information and data management support for the budgeting, acquisition, assignment, and inventory control of aviation support equipment. The support equipment management system is composed of the support equipment resources management information system (SERMIS), the automated support equipment recommendation data (AUTOSERD), and the local asset management system.

Support Equipment Resources Management Information System

The SERMIS is the primary management information system supporting the AMMRL program. Directed by the OPNAV N78, the SERMIS is the single source for baseline budgeting and acquisition of aviation support equipment for NAVAIRSYSCOM program managers and Marine Corps support equipment logistic managers. The SERMIS provides a centralized and integrated database containing support equipment data for inventory, allowance, and rework capability and production status in a form suitable for online interactive access. The COMNAVAIRSYSCOM uses the SERMIS database to construct an IMRL for all Marine Corps aviation activities. The IMRL is a consolidated list of specified items and quantities of support equipment required by a particular aircraft maintenance activity or activity component to perform its assigned aviation maintenance mission. The IMRLs identify materiel requirements and provide a basis for support equipment procurement. This information aids decisions regarding readiness, budget forecasts, procurement requirements, and redistribution of excess assets.

Automated Support Equipment Recommendation Data

The AUTOSERD is the primary system for data collection and transfer of aviation support equipment requirement and acquisition information among the NAVAIRSYSCOM. It is also used by cognizant field activities and the NAVICP Philadelphia, previously known as the Aviation Supply Office, Mechanicsburg, PA.

Support equipment requirements are documented in support of aircraft, missiles, weapon systems, installed avionics, engines, and other systems support equipment for high operational readiness. One of the outputs of the logistic support analysis is a document and its associated process known as the support equipment recommendations data. The support equipment recommendations data is the source document for the AUTOSERD system. The support equipment recommendations data is a compilation of data that describes a requirement for specific items of support equipment. It serves as the primary data record for the design, development, integrated logistic support, and allocation and superseding (prime/alternate relationship) of support equipment. It describes technical and design parameters and acquisition and logistic support data to satisfy end article support requirements.

The AUTOSERD system is the sole source of input for requirements data to the AMMRL program's support equipment resources management information system. Its primary objective is to provide a consistent and coordinated support equipment requirement process and pass accurate support equipment source data to the support equipment resources management information system for production of IMRLs.

Local Asset Management System

The local asset management system is a standardized system for the management of support equipment at all three levels of naval aviation maintenance. The local asset management system enhances the control of inventory through upline reporting of support equipment assets to the support equipment resources management information system. That system contains the master database of equipment for the AMMRL program. The local asset management system also provides automated methods of tracking support equipment assets at the O- and I-levels.

Additional Aviation Logistics Information Management Systems

The systems discussed in the following subparagraphs provide additional functionality and capabilities critical to materiel management and AVLOG operational planning.

Ordnance Information System-Wholesale/Retail

The OIS-W and OIS-R systems manage and control naval aviation ammunition, ordnance, and explosives. The MALS/squadron ordnance technicians and managers use the OIS-W to provide online 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 supports life cycle management of Class V(A) materiel.

The OIS-R is a computer-based inventory management tool designed to provide automated ammunition requisitioning, status accounting, and inventory management capability at the MALS/ammunition supply point level. The OIS-R also provides the capability to interface with the OIS-W by naval message from expeditionary sites. It is the principal system used to provide visibility of Class V(A) and Class V(W) (ground) ammunition at the user level and is a feeder system to the OIS-W.

All Weapons Information System

The All Weapons Information System is a NAVAIRSYSCOM Web portal that allows users

to access multiple Web applications for aviation ordnance data collection and reliability using one username and password. The OPNAVINST 8000.16 governs the use of the system's modules, which allows the user to:

- Develop/track configuration management.
- Track inventory.
- Collect performance data.
- Develop program requirements.
- Develop data products.
- Track engineering analysis.
- Collect maintenance data.

Aviation Logistics Support Ship Automated Load Planning System

The T-AVB automated load planning system is the current AIS for the embarkation of mobile facilities aboard the T-AVBs. Used to accomplish the load planning process from initial planning to final printing of the load plan, the system considers the many T-AVB peculiarities to ensure operational capability of selected mobile facilities while underway. The Integrated Computerized Deployment System, also known as ICODES, is the next generation of AIS for the T-AVB and will replace T-AVB automated load planning system.

CHAPTER 5
PLANNING

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 used when developing an AVLOG concept of support for an expeditionary ACE.

Principles

Planning for AVLOG is guided by a set of overarching principles (see fig. 5-1). Each plan, action, organization, report, procedure, and piece of equipment may be defined and measured in terms of these principles. Each logistic decision is guided by these principles, which apply to all military logistics and provide the common foundation of joint and Marine Corps logistic doctrine. The operational commander, who must know the effective limits of the available logistic support, and the logistic planner, who ensures that all the essential elements of the logistic system are incorporated, must understand the following seven principles:

- *Responsiveness*. Providing the right support at the right time and at the right place.
- *Flexibility*. Adapting logistic support to changing conditions.
- *Attainability*. Acquiring the minimum essential logistic support to begin operations.
- *Survivability*. Ensuring the functional effectiveness of the logistic infrastructure in spite of degradation and damage.
- *Sustainability*. Ensuring adequate logistic support for the duration of the operation.
- *Economy*. Employing logistic support assets effectively.
- *Simplicity*. Avoiding unnecessary complexity in preparing, planning, and conducting logistic operations.

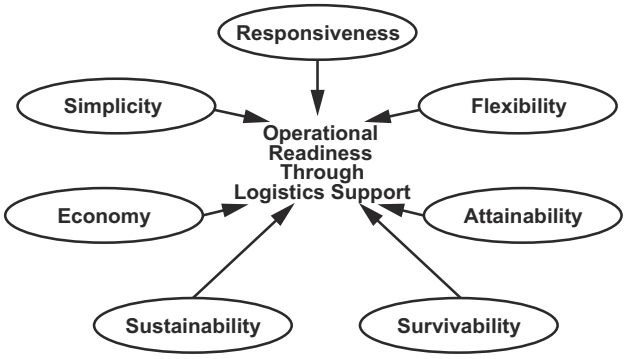


Figure 5-1. Principles of Logistics.

Strategic Level Aviation Acquisition

Acquisition and logistic planning for aircraft/aeronautical equipment, support equipment, and airborne weapon systems is conducted by selected naval systems commands, such as NAVAIRSYSCOM or NAVSEASYSCOM. The individuals who oversee the many functions required to provide complete logistic support through the life cycle of a system are known as assistant program managers for logistics or logistic managers.

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 appropriate DOD regulations.

Mission Need Determination

When DOD department heads determine a new capability is required to meet a perceived mission need, a mission needs statement is submitted to the Joint Requirements Oversight Council. If the identified mission need is valid, the mission need statement is approved and a priority is assigned.

Integrated Logistic Support Plan

The integrated logistic support plan is developed from 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 is divided into the following phases:

- Program initiation.
- Concept exploration.
- Demonstration/validation.
- Full-scale development.

Each phase includes consideration of the logistic requirements for—

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

Maintenance Plans

Maintenance plans are concise descriptions of maintenance requirements that drive all logistic elements. These plans are developed and compiled for designated aircraft, their related systems, and other selected items of equipment. It is NAVAIRSYSCOM's policy to develop, issue, and maintain maintenance plans for aircraft/aeronautical equipment, airborne weapon systems, EAF equipment, and support equipment. 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 authorized to perform the maintenance action indicated, and estimates the frequency of component failure or repair action. Maintenance plans provide the interface between maintenance, engineering, and supply for provisioning purposes and communicate inputs to enable other logistic managers to develop their hardware support requirements.

Logistic Requirements Documentation

Several key documents, derived by naval aviation planners at the Service and system command levels, document logistic requirements of aircraft platforms and key logistic programs in support of MALSP and geoprepositioning programs.

Weapon System Planning Document

The weapon system planning document (WSPD) is a basic policy and planning document published by COMNAVAIRSYSCOM. It provides direction and guidance for program planning, budgeting, and execution in the development, acquisition, operation, and logistic support of aircraft and airborne weapons/equipment. The planning data is used by COMNAVAIRSYSCOM, program executive officers, system commands, NAVICPs, and other field activities and fleet commands. The WSPD includes the following:

- Planned procurements.
- Delivery schedules.
- System inventories and inventory objectives.
- Base load data.
- Test and evaluation plan.
- Requirements for supplemental and contingency support.
- Rotational site support.
- Shipboard support.
- Planning factors, such as recommended monthly combat/peacetime flight hours.
- Authorized weapons expenditures.
- Materiel support and training policies.

- Training equipment plans.
- Maintenance facilities (mobile facilities).
- Related logistic support planning information.

To ensure congruity, the organizations involved in these actions must use the common planning base provided by the WSPD. Prepared and published by COMNAVAIRSYSCOM, WSPDs are notices for Navy and Marine Corps aircraft and airborne weapons/equipment, which are either undergoing major modifications or are included in the future year's defense program. These documents are revised periodically to reflect significant changes that occur in the programs. These changes are coordinated with HQMC Aviation Plans, Policy, and Procedures Branch, Aviation Weapon System Requirements Branch; HQMC ASL; and with OPNAV N78 prior to issuance. Within the WSPD and based upon numerous factors, spare parts, mobile facilities, and support equipment requirements in support of MALSP are identified. In conjunction with the MALSP PPD, these documents identify the aviation logistic support elements required of all tactical Marine aircraft.

Program Planning Document

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. These documents are used by NAVAIRSYSCOM, NAVICP, NAVAIRSYSCOM field activities, and fleet commands for support planning, budgeting, and other actions related to procurement, distribution, provisioning, replenishment, and maintenance of the system and equipment and include—

- Quantitative planning data concerned with procurements, delivery schedules, installation schedules, inventories, and planning factors.
- Policy statements concerned with materiel support, training, and maintenance.
- Other related planning data, as appropriate.

These documents 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 CNO and the Commandant's approved plan for a given system. Before issuance, the PPD is submitted to the cognizant offices within OPNAV, HQMC, and NAVAIRSYSCOM activities for concurrence. The three Marine Corps programs published as PPDs are—

- MALSP.
- MPS/aviation support equipment program.
- Marine Corps Prepositioning Program-Norway (MCPP-N) and/or aviation support equipment program.

Budgeting and Funding for War Reserve Materiel

The responsibility for programming, budgeting, and funding aviation-peculiar WRM differs from that of ground-common materiel. The HQMC Deputy Commandant for Aviation is responsible for coordinating all AVLOG, including determining requirements and sponsoring the development and acquisition of aviation-specific end items. The Deputy Commandant for Aviation reviews the Navy budget process to ensure that approved Marine aviation programs are correctly reflected in the future year's defense program and the annual DOD budget. Specific aviation WRM responsibilities include:

- Participating in the CNO's NNOR process for the 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 Class V(A) 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 Class V(A) WRM stocks.

Establishment of the Maritime Prepositioning Force Ashore

An MPF operation is the rapid deployment and assembly of a MAGTF using a combination of intertheater airlift and forward-deployed MPSs. These operations are strategic deployment options that are global in nature, naval/joint in character, and suitable for employment in a variety of circumstances. As such, MPF operations provide an essential element in the conduct of the national military strategy by airlifting MAGTF and Navy support element personnel, with some associated equipment, into an arrival and assembly area to join with equipment and supplies carried aboard MPSs.

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 intertheater airlift and aerial tanker support.
- Adequate offload forces to support the operation, such as the MAGTF and Navy support element.
- Sufficient airfield space for the ACE aircraft, AMC, and CRAF operations and throughput capability to support the intended airflow.
- Ample port/beach area for timely offload and throughput. The port must have sufficient water depth, adequate overhead clearance, and maneuver room to permit loading/offloading of MPSs. Beaches and approaches must be evaluated for hydrographic supportability and swept for mines and other hazards.
- Suitable transportation network between the port/beach, airfields, and assembly areas to permit a timely arrival and marrying up of airlifted units with sealifted equipment and supplies.
- Force protection.

Concept of Maritime Prepositioning Ships Squadron Aircraft Support

The three key logistical support elements spread-loaded among each MPSRON are aviation support equipment, Class V(A) ordnance, and EAF assets. These assets, combined with others and the FIE, provide complete logistic support during the first 30 days of an MPF operation.

Each MPS contains tailored O-level common support equipment, peculiar support equipment, and minimal I-level common support equipment to support the MPF MAGTF preassigned mix of aircraft. When deployed, each ACE provides tactical air support for a MEB. Each MAGTF will have the capability for independent deployment or, if the situation dictates, the ability to join to form a larger force.

The ACE fixed-wing aircraft will be flight ferried 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 using AMC/CRAF aircraft and will include—

- Squadron personnel, such as maintenance and support crews.
- Representative FISPs contained in mobile facilities.
- O-level support equipment, such as N-coded items.
- Minimal I-level support equipment required for initial aircraft maintenance operations, such as tow tractors, mobile electric power carts, or hydraulic servicing carts.

Upon arrival and offload of MPSs, each aircraft squadron assigned to the MEB ACE, will “link

up" and take custody of the remainder of the common/peculiar support equipment and Class V(A) required to operate and maintain its respective aircraft. Each MPSRON contains a tailored support equipment account for each type of aircraft assigned to the MEB ACE, which consists of support equipment (custody coded items P, L, and M). When the support equipment loaded aboard the MPS is linked up with the aviation support equipment transported into the theater of operations by the FIE, it includes all common/peculiar support equipment required to operate each T/M/S aircraft during the first 30 days of combat.

Additionally, each MPSRON includes minimal fixed-wing and rotary-wing facility equipment contained in mobile facilities. This facility equipment or I-level support equipment supports I-level support functions common to fixed-wing/rotary-wing aircraft, such as tire/wheel buildup, battery maintenance, or cryogenics. The facility equipment loaded aboard the MPS is operated by designated MALS detachment personnel and is designed to support ACE aircraft until the arrival of the host MALS on the T-AVB or other strategic lift. Each host MALS will deploy with a tailored I-level CCSP and a 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.

Embarked aboard each MPSRON, EAF equipment supports fixed-wing and rotary-wing aircraft. Spreadloaded on three of the five MPSs, each has a core capability of airfield surfacing, airfield lighting, optical landing systems, and aircraft arresting gear. Airfields are constructed to meet the specific needs of aircraft and mission and do not have to follow specific configuration requirements. The EAF assets are employed under two basic concepts: as augmentation for a base (host nation or captured airfield) or as an EAF. One option would be to consolidate the assets of all three ships and build an EAF. This conceptual airfield includes—

- A 4,000-foot runway.
- Parallel taxiway.
- Hot refueling pits.
- Parking for 75 tactical fixed-wing/rotary-wing aircraft and three theater lift aircraft.

Establishment of the host MALS in the theater of operations along with the MWSS for AGS gives the MEB ACE a sustained EAF capability.

Concept for Marine Corps Prepositioning Program—Norway Aviation Support

The MCPP-N is the only land-based Marine Corps prepositioning program that includes aviation support equipment and select EAF equipment (aircraft arresting gear and optical landing systems). The program's focus has shifted from being regionally based for the defense of Norway/NATO's [North Atlantic Treaty Organization's] northern flank, to a globally-based program capable of supporting a wide range of operations to include supporting Norway's defense. The MCPP-N program includes support equipment located at two sites within Norway.

This support equipment consist of tailored O-level support equipment and minimal I-level support equipment to support a MEB ACE's preassigned mix of aircraft and M-31 expeditionary arresting gear. All equipment is capable of being moved by sealift, surface, or airlift to a required theater of operations if necessary. When the support equipment in MCPP-N is combined with the support equipment transported into theater by flight ferry and/or FIE, the MEB ACE is provided with the support equipment required to operate each T/M/S for 30 days of combat operations. Additionally, MCPP-N is capable of tailoring support equipment packages to support smaller detachments and/or composite squadrons operating within a range of military operations.

The MCPP-N support equipment also includes minimal fixed-wing/rotary-wing facility equipment, which supports I-level functions common to fixed-wing and rotary-wing aircraft. The facility equipment located in Norway is operated by designated MALS detachment personnel and is designed to support ACE aircraft until the arrival of the host MALS by aircraft or T-AVB. Each host MALS deploys with tailored CCSPs and PCSPs required by each aircraft type the MALS is designated to support. Upon the establishment of the host MALS in a theater of operations, the MEB ACE will be capable of sustained combat operations.

The support equipment mix resident within MCPP-N is governed by the Marine Corps Aviation Prepositioning Program. Under this program, the T/M/S mix supported by and the support equipment contained in MCPP-N are reviewed annually. This review ensures that the support equipment portion of MCPP-N is optimized to support MAGTF missions.

Aviation Logistics Support Ship

In addition to MPF/MCPP-N, aircraft that are part of an ACE can also be supported by one or both of the T-AVBs. Operational planning for the use of the T-AVB entails considering the embarkation, deployment, execution, and redeployment phases of an operation.

The T-AVB can be configured to provide an operational MALS afloat; fully loaded with mobile facilities intended to be offloaded in the operational theater; or maximum loading of mobile facilities, deployment to the operational theater, partial offloading of mobile facilities, and further operations as a sea-based MALS platform. Ultimately, the chosen configuration depends on MAGTF mission requirements and commander's guidance. The T-AVB also provides for resupply in a conventional container lift-on/lift-off or roll-on/roll-off as well as in-stream onload and/or offload configuration.

Capabilities and Modifications

A T-AVB is a C5-S-78A Seabridge class, commercial, combination roll-on/roll-off, and lift-on/lift-off cargo ship adapted by the MSC for use by the Marine Corps. The T-AVB-3 (*SS Wright*) is home-ported in Baltimore, MD (see fig. 5-2) while T-AVB-4 (*SS Curtiss*) is home-ported in San Diego, CA (see fig. 5-3).

The Maritime Administration will maintain both T-AVBs in a 5-day reduced operating status. This status allows for the transition to full operating status within 120 hours. A civilian commercial

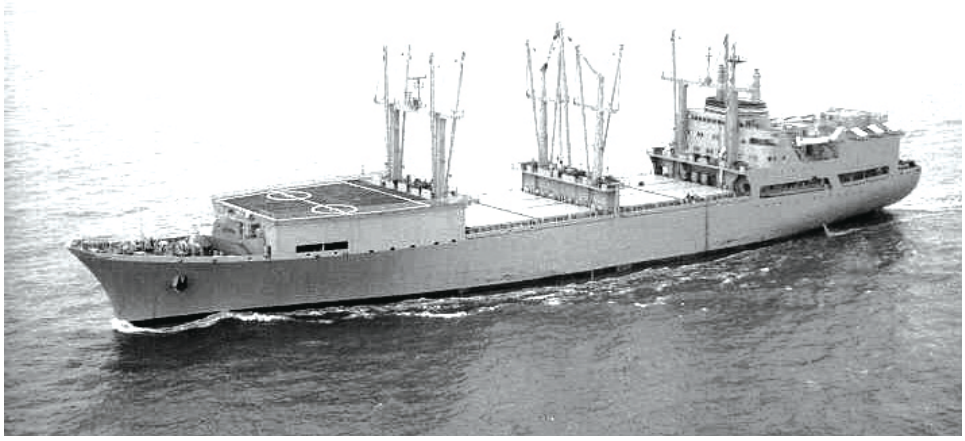


Figure 5-2. *SS Wright*.

Figure 5-3. *SS Curtiss*.

merchant marine 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 the Maritime Administration under the operational command of the MSC.

A number of modifications were made to the Seabridge class ships to support an embarked operational MALS consisting of up to 300 mobile facilities and approximately 325 Marines. Some of these modifications are described in the following subparagraphs.

Communications Network

A high speed data communications network has been installed throughout the ship, including all berthing, open cabin spaces, and the main and second decks. Enclosed ship spaces (berthing and cabins) have 100 MB/sec CAT-5 switched network outlets. Open decks have bulkhead connection points for 100 MB/sec multimode fiber optic cable connections to support mobile facility clusters.

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 25 senior Marine Corps personnel.

Helicopter Platform

A helicopter deck and control station, certified for day and night visual flight rules, were added above the main deck and are capable of supporting aviation evolutions of all DOD-type helicopters. The platform, located on the upper deck of the ship, can accommodate a CH-53E in all landing and takeoff 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 Mobile Facilities

The MALS support equipment required to be operational en route is powered in part by embarked generators connected to the T-AVB's electrical distribution system. Additionally, the ship has a 1500-kilowatt generator that provides stable power.

Diesel Fuel Marine System

These systems are for the generators that are brought on-board and operated on-board.

Administrative Work Space

This space is for the host MALS administration, operations, and embarkation sections.

Medical Facilities

These facilities are medical treatment rooms that can provide limited emergency care and a six-bed medical ward.

1MC Intercom System

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

Hazardous Materiels Storage

Although the ship is not specifically configured for hazardous material, it may be transported in "marine use approved" tank containers and, in lesser quantities, as "mobile loaded" cargo in approved containers if the containers are stored in accordance with existing codes.

Compressed Air

Outlets are available on the main and second decks. Sufficient hoses must be embarked by each work center that requires compressed and/or pneumatic air.

Water

Water hookups for mobile facilities that require water, such as battery lockers, are located between holds four and five on the main and second decks. Hoses must be embarked by the using unit.

Mobile Facilities

The mobile facilities (8- by 8- by 20-foot containers) used by the MALS conform to International Organization for Standardization container dimensions and are configured to perform various missions. Operational mobile facilities can be configured doublewide when embarked aboard the T-AVB. In addition, access modules are used to gain access to mobile facilities stowed in the lower holds and those that are complexed for I-level supply support aboard the ship. The mobile facilities can be outfitted with shelves for storage or as shelters for support equipment. Mobile facilities required for use will be identified by serial number and special requirements (such as 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.

Planning

Planning for the deployment and employment of T-AVB requires developing load plans in response to existing OPLANs/CONPLANs in which sizes of forces, level of conflict, and geographical location are assumed. Planning for T-AVB deployment, however, must consider several unique planning factors; AVLOG T-AVB planners must be fully integrated into the overall planning process to determine how the T-AVB may best be tailored to support mission requirements.

Activation

When request for ship activation is approved, a civilian crew is hired, systems are brought online, and the ship sails to arrive at the seaport of embarkation for MALS loading within 120 hours of activation.

Modes of Operation

The T-AVB's unique capabilities allow the task organized MALS to support various scenarios. The MALS requires a detachment from an MWSS and MACG for support. The three basic modes of operation for the T-AVB are operational, transport, and combination.

In the operational mode, mobile facilities 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, such as mobile facilities, reefers, and flatracks, and 42 access

modules can be loaded on the T-AVB—186 of which may be fully powered and operational mobile facilities.

In the transport mode, mobile facilities and personnel of the MALS are embarked aboard the T-AVB to provide maximum, land-based, expeditionary, AVLOG support to the ACE when offloaded ashore. In this mode, approximately 684 containers can be loaded on the T-AVB; however, none of these mobile facilities may be fully powered or operational until offloaded and "complexed" ashore.

In combination mode, mobile facilities 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 mobile facilities 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.

Loading

All detailed deliberate 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 requires 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/deletions/modifications must be identified, with appropriate corrective action taken. The evaluation of the load plan, which is developed through the use of T-AVB automated load planning system, will require that the weights and dimensions of equipment by category, such as mobile facility or bulk, be processed through the ship's onboard computers to determine the trim characteristics of the ship. Once the load plan has been evaluated and adjustments made, any significant changes in the amount/type of equipment to be embarked will require re-evaluation.

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 the ship can be loaded by MALS personnel. Upon receipt of a mission, the MAGTF commander will, through either deliberate planning or crisis planning functions, develop a course of action (COA), 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 order of forces for deployment will commence. Deployment planning is based on the tactical requirements of operations and force time-phasing requirements. These requirements determine marshalling, staging, embarkation, and movement plans. It is during this time that the ACE task-organized, fixed-wing/rotary-wing host MALS is designated and preparation for deployment begins. The concepts and procedures used by the MALS support this task-organized and time-phased MAGTF deployment method.

Predeployment Logistic Actions

During predeployment organization and preparation for AVLOG support, the MALS of any MAG providing aircraft to the ACE (a parent MALS) identifies and prepares for shipment the support package requirements (FISP and PCSP) for the specific type of aircraft being provided. It then transfers 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. The FISPs are transported to the operational area with deploying aircraft by FIE; although, the host MALS will not normally take custody of FISPs until arrival in the operational area.

The fixed-wing/rotary-wing host MALS will identify and prepare for shipment resident FISPs, CCSP, and PCSPs. It will receive support packages (FISPs, PCSPs) from the parent MALS and

transfer resident support packages that are not required to a designated remain-behind MALS.

At this point, the fixed-wing/rotary-wing 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, including the MWSS/MACG detachment; and their organic data processing facilities with logistic and inventory records properly configured. Upon completion of the predeployment logistic action, information on lift requirements of the ACE logistic support organizations must be provided upline. Such reporting will ensure that logistic support assets are accurately reflected in the master deployment and execution data of HHQ. This information is provided through MAGTF LOGAIS.

Aviation Logistics Concept Development Planning Process

Conceptual planning establishes aims, objectives, and intentions and involves developing broad concepts for action. For the aviation logistician, conceptual planning means matching requirements (goals and objectives aligned to operational concept) to all available resources and capabilities (broad logistic 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 that enable and sustain aircraft readiness make the initial aspects of AVLOG planning a quantitative drill. The predictive nature of logistic requirements planning 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 model must encompass the full spectrum of AVLOG processes, procedures, systems, and activities and, concurrently, will be framed with risk and uncertainty. See figure 5-4.

The complexity of AVLOG concept development is best simplified when conducted within an organized framework or structured methodology, such as the sequential steps of the Marine Corps Planning Process, 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 often the operational logistician for the MAGTF ACE; therefore, it is imperative that the MALS operations officer has knowledge of operational-level logistic planning. These levels of logistic planning include force deployment planning, sustainment planning, and serving as the foundation for subsequent detailed and functional logistic planning.

The development of the AVLOG support concept should begin as early in the planning process as feasible. For example, it can begin when an AVLOG planner participates in the MAGTF- or MEF-level operational planning team as a subject matter expert. 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, at both the MAGTF and ACE levels, the aviation logistician gains relevance and credibility with the operational planners, obtains

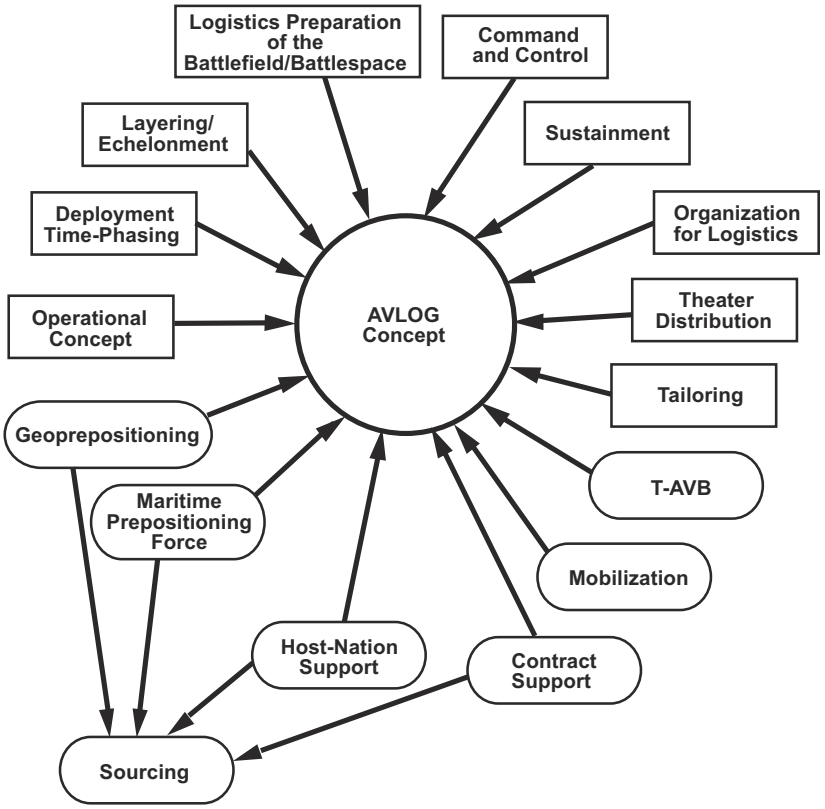


Figure 5-4. Aviation Logistics Considerations.

situational awareness, and is able to compile realistic data to support deliberate or time-sensitive planning requirements.

Problem Framing

The mission for AVLOG should be derived from the higher command's mission, the ACE mission statement, and the ACE commander's intent. For AVLOG to be a force multiplier to the ACE, the planner should derive from the commander's vision a strength for AVLOG in support of the ACE employment concept and an AVLOG main effort. The logistic strength will be the aspect of logistics that best enables the combat capability that is the focus of effort within the operational COA. For example, the AVLOG strength could be the theater operational-level flexibility gained from the operational employment of the T-AVB or it could be rapid force closure with immediate sustainment provided by an RESP. The AVLOG planner should also seek the MAGTF ACE's own weakness/critical vulnerability asking, "How vulnerable are our own strengths?" and "Will our own aviation support plan become a large and lucrative target for the enemy?" Weaknesses (or critical vulnerabilities) may include the constraint of in theater throughput (port/airfield), the beddown plan, or rear area security for AVLOG sites. The result of asking these questions and conducting analysis of higher and supported commands' missions and intent will form the framework for the mission in support of the ACE in particular and the MAGTF as a whole.

Course of Action Development

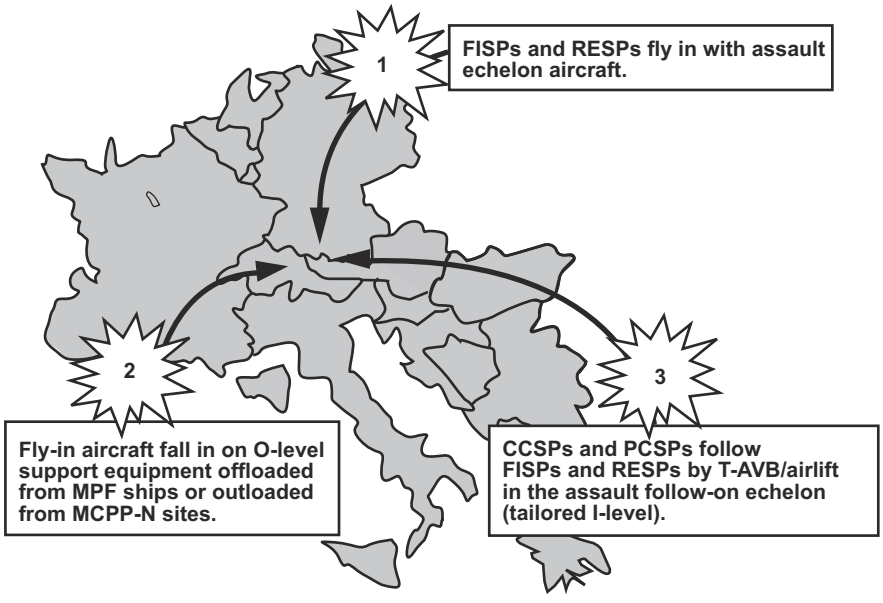
The AVLOG support concept(s) must first focus on the COAs that are formulated by the operational planning team and operational planners. Logistic planning should parallel operational planning/COA development. At this stage, the

AVLOG planner will develop an initial support concept for each COA based on initial estimate(s) and a detailed estimate of supportability. Detailed support planning, which adds depth and fidelity to the initial concept, occurs only after the commander selects a final COA.

To support each COA, an AVLOG support concept is designed. No prescribed set of rules or preferred methodology exists that is commonly used to form the AVLOG concept of support. The following subparagraphs are steps in a model that ensure a minimum set of key "conceptual planning considerations" are employed in the thought process and an evaluation process is injected that uses a measure of effectiveness or metrics. The success criteria used in this model are the principles of logistics. The tool to assist the AVLOG planner in formulating and evaluating the logistic concept is the AVLOG support concept matrix (see app. A). These planning considerations should be viewed as a system. Excessive focus on any one element can cause suboptimization at the cost of others and degrade the entire logistic system that will be put in place for theater-wide aviation logistic support.

Deployment Time Phasing

This first consideration asks, "What elements of AVLOG are required to enable initial aviation combat capability?" This consideration is the force deployment planning aspect of FDP&E. For AVLOG FDP&E, MALSP greatly facilitates this process, but does not provide the total AVLOG solution. By establishing the deployed AVLOG requirements with their associated required delivery dates in the operational concept, reverse planning methodology will step the planner sequentially backward through all the required activities/events that must be accomplished to deliver the required elements where and when needed. For example, to enable 14 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. In addition to the MALSP packages, aviation munitions and geoprepositioning flows to marry up with FISPs/RESPs may have to be planned to arrive at the forward operating base. For example, the offload preparation party must deploy to prepare geoprepositioned equipment (see fig. 5-5).



MCPP-N Marine Corps Prepositioning Program-Norway

Figure 5-5. Aviation Logistics Deployment Time Phasing.

Enabling a deployed MALS to arrive in theater on a T-AVB by C+35 requires extensive and detailed reverse planning that will manifest event time windows. Planning backward, the AVLOG planner will discover a point at which the deploying MALS will have to completely shutdown support activities. Standdown 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 maintenance requirements. A premature loss of critical maintenance capabilities at this juncture will be detrimental to the overall success of the ACE mount out. By ensuring that there are no unusual requirements for MALS support beyond identified aircraft assembly repairs, the MALS will have an identifiable milestone regarding the time and degree to which support activities may shut down.

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 as soon as possible following the announced warning order. Maintenance activities must coordinate closely with supply to ensure the orderly return of awaiting parts and components from the various divisions. All in-work/awaiting maintenance components should be embarked, taking extreme care to ensure components are reassembled as fully as possible and all appropriate documentation is securely attached (see fig. 5-6).

Shut down of the MALS in preparation for embarkation must be closely coordinated. Sufficient time must be allocated for the disassembly of the mobile facility complex, pack up of embark boxes, disestablishment of the ammunition supply point, and movement to the seaport/aerial port of embarkation. Dismantling of the MALS must be sequenced to ensure continued AVLOG support is available for aircraft squadrons, which is especially critical due to a likely

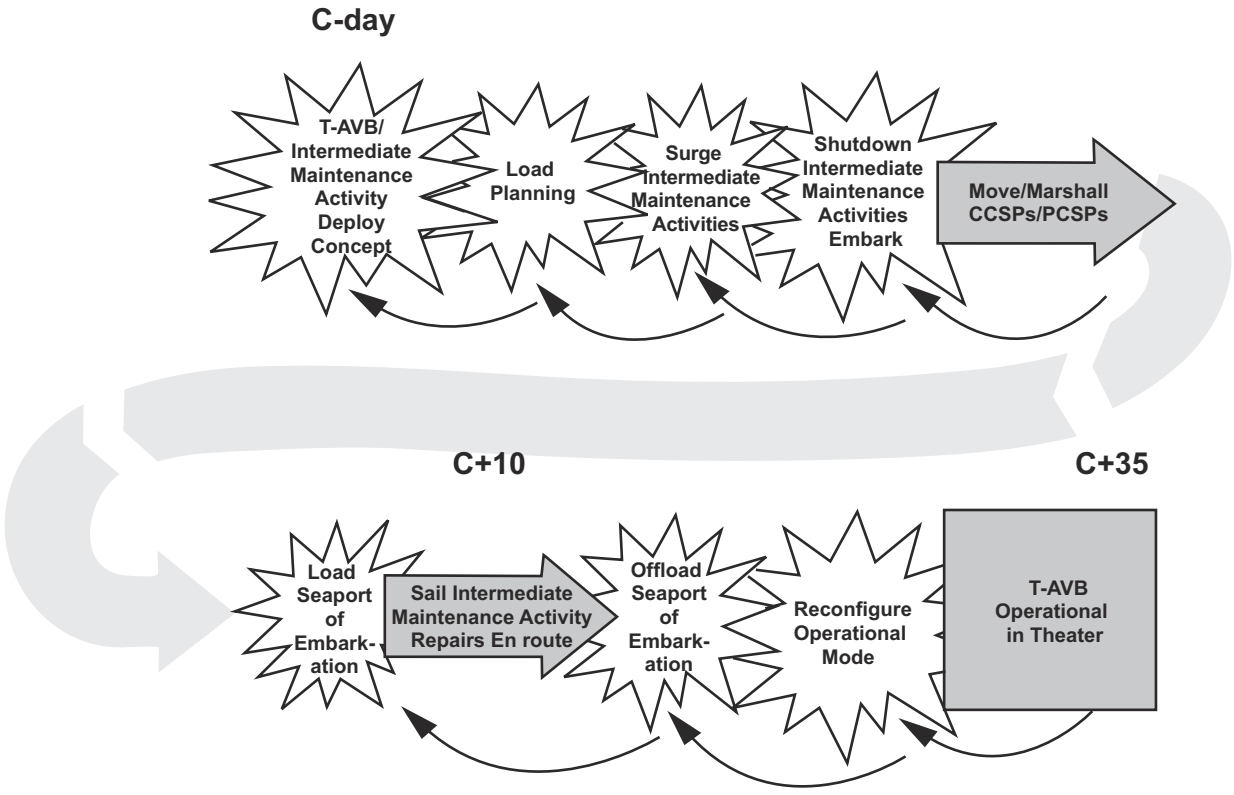


Figure 5-6. Reverse Planning Concept.

surge effort as supported squadrons prepare to deploy. Close coordination among the various MALS elements that will be embarking aboard the T-AVB, coordination internal to each MALS, and synchronization with each of the deploying/supported squadrons is required. Each MALS must continue to support the deploying squadrons until the time they have actually embarked.

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

Layering and Reachback

This consideration asks the question, "How much capability is critical forward versus what can economically remain consolidated far removed from the combat airfields?" The forward versus rear support dilemma is primarily a question of needed maintenance capability that can feasibly be deployed forward. Though maintenance capabilities are contained in three levels, this planning consideration is concerned with the I-level.

The layer needed nearest to the flightline is what is used to service aircraft, maintain aircraft operations, and handle and load munitions (FISP and RESP). While it is preferred to have the PCSPs and CCSPs at the same operating base, it may not always be feasible. For example, there may be more than one fixed-wing base requiring support from only a single site CCSP/PCSP deployed host MALS. The next layer of support, the PCSPs and CCSPs, may operate at a rear and centralized position removed from the outlying operating sites. It may provide a more in-depth degree of CCSP/PCSP MALS repair capability and enable sustainment to the RESP/FISP.

After the CSPs, the support concept would identify follow-on requirements, such as FOSP/in theater facilities to augment increased I- to D-level repair capabilities (first degree engine repair). Finally, the furthest removed layer of support is the out-of-theater, globally-sourced components that must flow through the strategic transportation channels. Sources of support in this layer are the rear elements of the home-based parent MALS, industrial and depot facilities, and commercial repair sites (see fig. 5-7).

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

Strategic Logistic Pipeline

The next considerations are the channels for both replenishment and retrograde into and out of the deployment theater. The flow of logistic 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), to the end user (forces). Personnel and materiel flow into seaports/aerial ports of embarkation by strategic lift. This strategic phase of transportation/distribution ends at seaport/aerial port of debarkation in theater (see fig. 5-8).

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 hazardous materiels regulations), security and custody issues (such as registered mail regulations), and customs clearance requirements. Strategic transportation choices include a range of military and commercial options, both foreign and domestic. Hubs and constraints/chokepoints must be identified in the strategic intertheater and

Figure 5-7. Aviation Logistics Layering.

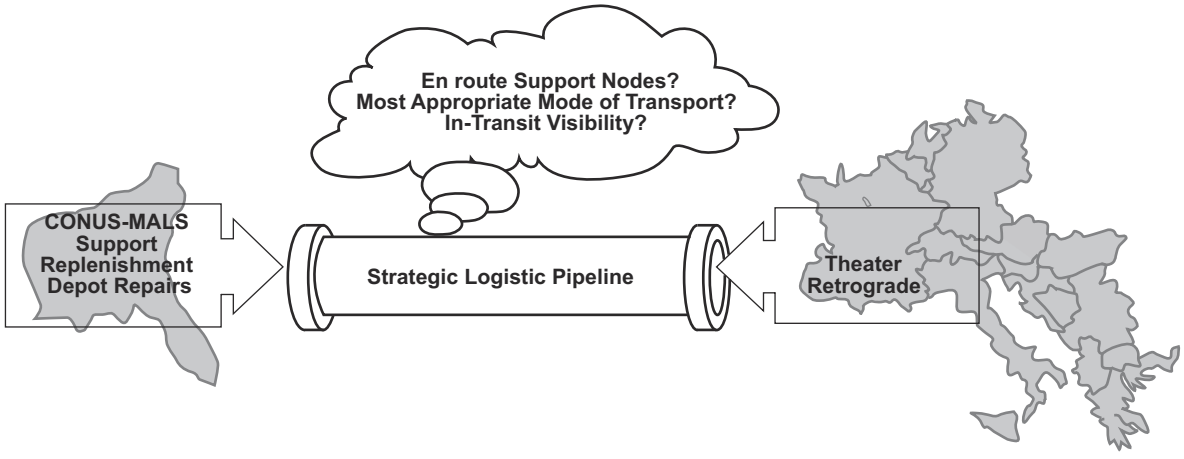


Figure 5-8. Aviation Logistics Strategic Pipeline.

intratheater transportation channels and consideration must be given to placing MALS supply detachment(s) and other capabilities at critical transportation hubs (main and alternates should be identified) to alleviate constraints.

Retrograde requires a reversal of the flow through the transportation network and involves the same considerations, participants, and resources. Consideration must be given to alternate routing of retrograde; however, the actual flow may progress through en route repair sites that may serve as designated repair points. In transit visibility is vital to managing the logistic flow and supports decisions on either end and in both directions of the pipeline.

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 would more likely be tailored. The tailoring of the RESP is determined by the immediate support equipment needs during the first 30 days of support (RESP assumes that prepositioned support equipment is not available) and inter-theater airlift constraints. Similar tailoring decisions are made with the FOSP when planning MALS requirements beyond the 90-day sustainment mark.

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 the transfer of financial accounts between MALS, the tailoring of the table of organization and table of equipment for the T-AVB embarkation, the designation of forward and rear command elements, and reserve augmentation.

The MALSP aims to reduce or eliminate the need for tailoring and simplifies the transfer process between deploying and providing MALS. Even with MALSP there will always be a need to plan for nonstandard solutions in deliberate and in time-sensitive situations; therefore, the AVLOG planner should always be able to improvise in unique, fast moving, and constrained situations. Likewise, the AVLOG planner should be able to assess the costs and risks of tailoring.

Physical Network Analysis

Physical network analysis links the intelligence preparation of the battlespace process, logistic analysis, and commander's intent to develop an AVLOG concept of support. Some of the commander's critical information requirements needed to develop a COA may be logistic-oriented information requirements, such as throughput at a key node. A physical network analysis is a complete assessment of the theater for key aspects and features that are crucial in the overall logistic support concept. These key aspects and features include—

- The aerial ports of debarkation and seaports of debarkation, main/secondary lines of communications, and main supply routes.
- 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 physical network analysis will make use of all available information sources from the S-2/G-2, theater logistic representatives, and secure Internet homepages. While physical network analysis should be one of the first actions/considerations in the planning process, after a detailed estimate of supportability, it will most directly affect the next consideration—theater distribution.

Theater Distribution

Theater (or intratheater) distribution is the flow of personnel, equipment, and materiel within the theater of operations that enables the MAGTF ACE to accomplish its tactical missions. Essentially, it entails plugging into or establishing an effective logistic 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 logistic agent and the MEF CSS element, will join, establish, and/or modify the theater distribution system 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 weak point of the AVLOG support concept has been theater distribution support during retrograde evacuation.

Theater distribution occurs through the physical network and resource elements of the logistic system. 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. All facilities will be considered for use in the logistic system. Those identified for use become designated as installations. Those not chosen provide options and flexibility if required.

The resource elements of the logistic system consist of the personnel, including uniformed and civilian, host-nation, government, military, and contractor; organizations; materiel; and equipment operating within the physical network of the logistic system. Intratheater 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, buses, 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.

Sourcing

The AVLOG planner must seek all possible sources of support. Almost certain constraints, such as limited strategic lift, and/or equipment shortfalls may dictate the need to access alternate sources. The following sources must be planned:

- Prepositioned equipment and supplies (MPF, MCPP-N).
- Prepositioned WRM.
- In theater capabilities, such as Navy afloat aviation support activities and shore-based overseas aviation support activities.
- Cross-Service support.
- Contract support.
- Host-nation support.

The AVLOG planner must emphasize to the supported squadrons that prepositioning will be a primary source for support equipment and that they must gain confidence in using these resources. Planning must place greater emphasis on the use of host-nation, allied, coalition partner, and other foreign support. Civilian contractors (domestic and foreign) provide direct support that was previously only accomplished by the Military Services. The difficult task of sourcing preferred munitions needed to support the ACE will be solved largely from in theater Navy prepositioned WRM stock and afloat ammunition resupply vessels.

Organization for Logistics in Theater

As many of the above planning considerations are developed, the organization for AVLOG support

in theater begins to form. The in theater organization for logistics will identify the following:

- Number of MALS sites required.
- Makeup of each MALS site.
- Lead MALS.
- Employment concept for the T-AVB.
- Establishment of a central MALS hub.
- Requirement for MALS detachment in theater.
- Use of Navy in theater stations and afloat bases.

The logistic system will begin to take shape as the beddown plan is finalized, the operational scheme and combat focus of effort is identified, the physical network analysis is completed, in theater capabilities are discovered, and other available sources of support/resources are identified. A key tradeoff in this consideration is how centralized versus decentralized the in theater organization should be, with command and control and dispersal of resources being weighted factors in this decision. Control for in theater AVLOG distribution should be centralized while economies of scale may necessitate a consolidated MALS hub concept for certain component repairs. The theater organization may look different for different functions/commodities within the AVLOG support concept. For example, the flow for requisitions through different supply ports of entry, the flow of retrograde, and the flow of replenishments may look far different for different types of end items.

The overall organization for AVLOG 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.

Command and Control

Consideration of command and control for AVLOG requires detailed understanding of command relationships to determine which AISs are used. Command relationships must be clearly defined when forward and rear designations are given to deploying MALS, as the MALS are task-organized and assigned in support of a newly formed MAGTF ACE. The AVLOG elements may also detach from the parent MALS and deploy afloat. These elements will normally report to the afloat MAGTF commander who reports to the Navy numbered fleet commander. Command relationships must also be clearly defined because a host MALS will task-organize, embark aboard the T-AVB, and arrive in the theater/combatant commander's area of responsibility.

A variety of communications systems can be employed alone or together to facilitate AVLOG support and command and control. These include NIPRNET [Nonsecure Internet Protocol Router Network], streamlined automated logistics transmission system, INMARSAT [international maritime satellite], and the NTCSS replication facility. Together, these systems give each MALS organic reach forward/back capability in CONUS, afloat (T-AVB), and forward deployed. This organic communications capability is key to transmitting logistic data to CONUS-based Navy logistic nodes and resupply points.

T-AVB Employment Concept

Consideration of the T-AVB mode of employment is central to the overall AVLOG concept. The pros and cons of each of the three modes of T-AVB employment (transport, operational, and combination) can be matched to the MAGTF and ACE's concept of operations and concept of support. Consideration of the T-AVB must begin with the support posture in theater and how the T-AVB best fits into the theater support organization (the logistic system). 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 deploying MALS PCSPs for an entire MAW. The T-AVB may be the best/only opportunity to move PCSPs to the theater. Next, it must be determined how the T-AVB is to be employed in theater—pierside as operational, located near a

shore based IMA, or afloat in limited operational mode for a limited mix of aircraft systems.

Available employment options are abundant, but the decision must be made early (backward planning shows that key events are imminent). Option tradeoffs must be understood; for example, full transport mode equals a 20- to 30-day gap in repair capability from all embarked MALS work centers, which may be too costly a risk to take in near-term operations.

Sustainment Concept

The overall sustainment concept must be considered 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 reachback and organic requisitioning capability with the CCSPs (in some cases with the RESP). However, logisticians must also push sustainment for certain items and groups of commodities.

The sustainment concept will also address long-term planning considerations beyond the initial 90-day depth of spares contained within the CSPs, such as FOSP requirement/flow, follow-on missions for T-AVB, support for branches/sequels in the overall operational scheme of maneuver, and analysis of retrograde flow needed to provide carcasses for depot/commercial repairs that sustain the 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 Marine logistics group for aviation ordnance handling and throughput within the theater?

Mobilization

The requirement to activate Reserve Components may become a key component of the AVLOG concept. Reserve Components can backfill MALS home stations, manage remain-behind equipment, support the fleet replacement squadrons while managing the training squadron allowances, and augment forces in theater. The mobilization of Reserve Components is a complex planning process. Understanding mobilization begins with knowledge of command relations of Reserve Components, the role of the supporting bases and stations (Commander, Marine Corps air bases and Commanding General, 4th MAW), and the concepts described in the Marine Corps Mobilization Management Plan.

Aviation Logistics Concept of Support Wargaming, Comparison, and Decision

The wargaming, comparison, and decision planning steps are considered together. During the problem framing planning step, the support concepts that have been initially designed are only as detailed as necessary by the operational COAs. Subsequent concept wargaming and comparison of the AVLOG concepts will be conducted in parallel or as part of the COA wargaming and comparison. 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. The principles of logistics provide a superb means to evaluate AVLOG concept of support comparison and decision.

Orders Development

The outputs of all the preceding work and deliberations are formalized and the operation order (OPORD) or OPLAN is produced. Published in JOPES format, the OPORD contains the supported ACE basic mission, intent, and guidance. Included will be several key annexes, to include annex A, the task organization that will define command relationships. Annex D is logistics/combat service support, and the AVLOG concept of support will be an appendix to annex D. Detailed and functional planning must be included in the AVLOG appendix. Functional experts, such as the 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 AVLOG concept of support appendix to annex D.

Transition

Transition is the handoff of the battle plan to the units that will execute the plan. If a plan is written, it now is translated into an OPORD. A formal deployment order will be published that directs deployment and deployment support operations. In FDP&E, transition is where planning ends and execution begins with planning and TPFDD validation, movement, and actual sourcing.

At the tactical level, successful transition depends on the level of detail contained within the OPORD and the OPORD's accuracy and currency. Deployment checklists, as detailed as individual preparedness checklists and work center embarkation manifests, will drive milestones dates and times that have been determined through reverse planning the force closure. For the MALS, the operations department may identify a deployment control cell/crisis center that will control and monitor the MALS movement and support posture throughout plan execution.

APPENDIX A

AVIATION LOGISTICS SUPPORT CONCEPT MATRIX

Concept Development	Evaluation Criteria			
Planning Consideration	**Simple**	**Flexible**	**Responsive**	**Integrated with Operations**
Deployment time phasing				
Layering				
Tailoring				
Theater distribution				
Sourcing				
Physical network analysis				
Logistic grid/pipeline (installations)				
Task organization for support				
AVLOG command and control (mission assignments)				
T-AVB employment concept				
Sustainment concept				
Mobilization				
This matrix demonstrates how planners could compare each planning consideration to the principles of logistics or other measures of effectiveness that the commander deems most crucial. If several concepts are being compared, the table can be used to assist in comparison. The approved AVLOG concept of support can be improved when evaluated with the use of the matrix.				

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GLOSSARY

SECTION I. ACRONYMS

AAE . . . . . aircraft armament equipment
ACE . . . . . aviation combat element
AC/S . . . . . Assistant Chief of Staff
AGS . . . . . aviation ground support
AIS . . . . . automated information system
ALD . . . . . aviation logistics department
ALIMS . . . . . aviation logistics information management and support
AMC . . . . . Air Mobility Command
AMMRL . . . . . aircraft maintenance materiel readiness list
AMTCS. . . . . aviation maintenance training continuum system
ASD . . . . . aviation supply department
ASL. . . . . Aviation Logistics Support Branch (HQMC)
AUTOSERD . . . . . automated support equipment recommendation data
AVCAL. . . . aviation consolidated allowance list
AVLOG . . . . . aviation logistics
AWSE . . . . . armament weapons support equipment

C4I . . . . . command, control, communications, computers, and intelligence
CAP . . . . . crisis action planning
CCSP . . . . . common contingency support package
Class V(A) . . . . . aviation ammunition
CNO . . . . . Chief of Naval Operations
COA . . . . . course of action
COMNAVAIRFOR . . . . . Commander, Naval Air Forces
COMNAVAIRSYSCOM . . . . . Commander, Naval Air Systems Command
CONPLAN . . . . . contingency plan
CONUS. . . . . continental United States
COSAL . . . . . consolidated shipboard allowance list
CRAF . . . . . Civil Reserve Air Fleet
CSP . . . . . contingency support package
CSS . . . . . combat service support
CV. . . . . aircraft carrier
CVN . . . . . aircraft carrier, nuclear

D-level . . . . . depot level
DOD . . . . . Department of Defense
DON . . . . . Department of the Navy
DTO . . . . . direct turnover

EAF. . . . . expeditionary airfield

FAADC. . . . . fleet accounting and disbursing center
FDP&E . . . . . force deployment planning and execution
FIE . . . . . fly-in echelon
FISP . . . . . fly-in support package
FOSP. . . . . follow-on support package

G-2 . . . . . assistant chief of staff, intelligence
G-3 . . . . . assistant chief of staff, operations
G-4 . . . . . assistant chief of staff, logistics
G-6 . . . . . assistant chief of staff, communications system

HHQ . . . . . higher headquarters
HQMC . . . . . Headquarters, Marine Corps

IBS . . . . . integrated barcode system
IETM. . . . interactive electronic technical manual
I-level . . . . . intermediate level
IMA. . . . . intermediate maintenance activity
IMRL . . . . . individual materiel readiness list

J-4 . . . . . logistics directorate of a joint staff
JOPES . . . . . Joint Operation Planning and Execution System

LHA . . . . . amphibious assault ship (general purpose)
LHD . . . . . amphibious assault ship (multipurpose)
LOGAIS . . . . . logistics automated information system

MACG . . . . . Marine air control group
MAF . . . . . maintenance action form

MAG . . . . . Marine aircraft group
MAGTF . . . . . Marine air-ground task force
MALS . . . . . Marine aviation logistics squadron
MALSP . . . . . Marine Aviation Logistics Support Program
MARFORCOM . . . . United States Marine Corps Forces Command
MARFORPAC . . . . . United States Marine Corps Forces, Pacific
MAW . . . . . Marine aircraft wing
MB/sec . . . . . megabytes per second
MCPP-N . . . . . Marine Corps Prepositioning Program-Norway
MCWP . . . Marine Corps warfighting publication
MDS . . . . . maintenance data system
MEB . . . . . Marine expeditionary brigade
MEF . . . . . Marine expeditionary force
MESP . . . . . Marine expeditionary unit ashore support package
MEU . . . . . Marine expeditionary unit
MOS . . . . . military occupational specialty
MPF . . . . . maritime prepositioning force
MPS . . . . . maritime prepositioning ship
MPSRON . . . . . maritime prepositioning ships squadron
MSC . . . . . Military Sealift Command
MWSS. . . . . Marine wing support squadron

N-4 . . . . . Director for Material Readiness and Logistics (Navy)
NALCOMIS . . . . . Naval Aviation Logistics Command Management Information System
NAMP . . . . . naval aviation maintenance program
NAVAIRSYSCOM . . . . . Naval Air Systems Command
NAVICP . . . . . naval inventory control point
NAVSEASYSCOM . . . . . Naval Sea Systems Command
NAVSUP . . . . Naval Supply Systems Command (publication)
NCEA . . . . noncombatant expenditure allowance
N-coded. . . . . noncustody coded
NFSA . . . . . naval air fleet system array
NNOR . . . . . nonnuclear ordnance requirement
NOLSC . . . . . Naval Operational Logistics Support Center
NOSSA . . . . . Naval Ordnance Safety and Security Activity
NTCSS . . . . . Naval Tactical Command Support System
NWCF . . . . . Navy working capital fund

OIS . . . . . ordnance information system
OIS-R . . . . Ordnance Information System-Retail
OIS-W . . . . . Ordnance Information System-Wholesale
O-level . . . . . organizational level
OOMA . . . . . Optimized Organizational Maintenance Activity
OPLAN . . . . . operation plan
OPNAV. . . . . Office of the Chief of Naval Operations
OPNAVINST . . . . . Chief of Naval Operations instruction
OPORD . . . . . operation order
OPTAR . . . . . operating target

PCSP . . . . . peculiar contingency support package
PPD . . . . . program planning document
PEO . . . . . Program Executive Office

RCM . . . . . reliability-centered maintenance
RESP . . . . remote expeditionary support package
RSOI . . . . reception, staging, onward movement, and integration
RSUPPLY . . . . . relational supply

S-1 . . . . . personnel officer
S-2 . . . . . intelligence officer
S-3 . . . . . operations officer
S-4 . . . . . logistics officer
SAC. . . . . special accounting code
SERMIS . . . . . support equipment resources management information system
SOP . . . . . standing operating procedure
SS . . . . . steam ship

T-AVB . . . . . aviation logistics support ship
TBA . . . . . table of basic allowance
T/M/S . . . . . type, model, and/or series
TPFDD . . . . . time-phased force and deployment data
TYCOM . . . . . type commander

US . . . . . United States

WRM . . . . . war reserve materiel
WSPD . . . . . weapon system planning document

SECTION II. DEFINITIONS

depot level—The level of maintenance at which equipment is sustained throughout its life cycle by performing major repair, overhaul, or complete rebuild of parts, subassemblies, assemblies or principal end items to include manufacturing parts and conducting required modifications, testing, calibrating, and reclaiming. The depot level of maintenance can be performed at Marine Corps multicommodity maintenance centers, other Service depots, commercial industrial facilities, original equipment manufacturers, or a combination thereof. It also supports lower level maintenance by providing overflow maintenance services, and by performing on site maintenance services, including technical assistance, when required. Also called **D-level**.

intermediate level—The preventive and corrective level of maintenance at which equipment is returned to a mission capable status. Intermediate level maintenance actions include inspection/in-depth diagnosis, modification, replacement, adjustment, and limited repair or evacuation/disposal of principal end items and their selected reparables and components/sub-components. It also includes calibration and repair of test, measurement and diagnostic equipment as well as fabrication of items, precision machining, and various methods of welding. Intermediate level maintenance is performed by specially trained mechanics and technicians per individual training standards and/or training and readiness events and technical publications. Also called **I-level**.

intelligence preparation of the battlespace—The analytical methodologies employed by the Services or joint force component commands to reduce uncertainties concerning the enemy, environment, time, and terrain. Intelligence preparation of the battlespace supports the individual operations of the joint force component commands. Also called **IPB**. See also joint intelligence preparation of the operational environment. (JP 1-02)

organizational level—The preventive and corrective level of maintenance at which equipment is sustaned in a mission capable status. Organizational level maintenance includes expeditious assessment and maintenance conducted under battlefield conditions. It normally entails inventory, cleaning, inspecting, preserving, lubricating, adjusting and testing as well as replacing parts and components with common shop tools per individual training standards and/or training and readiness events and technical publications. Also called **O-level**.

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