USMC

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Aviation Logistics

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FOREWORD

The Marine Corps is an inherently naval organization—a combined armed force that is organized, staffed, trained, and equipped to fight from the sea into austere environments. As a key component of the air ground team, Marine aviation exists to support the Marine air-ground task force (MAGTF) commander and the scheme of maneuver. The goal of Marine Corps aviation, therefore, is to attain and maintain combat readiness to support expeditionary maneuver warfare. This is our identity.

The Navy and Marine Corps Team is the nation's ready force, ready in any clime and in any place, to address threats as they arise. To do that, ships at sea employ expeditionary, amphibious and carrier-based forces ready to execute missions as tasked. Those missions often require rapid response; therefore, these forces are forward-deployed, ready to fight as required across the conflict continuum. Preparing for pacing threats, those presented by strategic competitors, means that we are also prepared for the lesser-included missions our MAGTFs—Marine expeditionary forces, brigades, and units—are called upon to execute.

Marine Aviation Logistics integrates sustainment and operational planning efforts between the Navy and Marine Corps in direct support of Marine aviation and is a critical enabler to aircraft readiness and the readiness of the MAGTF. Aviation Logisticians work across functional areas of Aviation Supply, Avionics, Maintenance, and Ordnance in support of the Aviation Combat Element and deliver the necessary capabilities and parts to sustain expeditionary operations at sea and ashore. Marine Aviation is posturing itself for operations in new and uncertain austere expeditionary environments. Aviation Logisticians will ensure the ACE and MAGTF are supported across the range of military operations, today and in the future.Reviewed and approved this date.

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To Our Readers

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 logistical operations. Aviation logistics 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. As such, AVLOG related supporting entities at every level must develop concepts of support that result in ACEs that are rapidly deployable, flexible, self-reliant, and self-sustaining.

Rapid deployment demands ACE organizations, equipment, and supplies be capable of being transported by land, sea, and air assets. The ACE's ability to rapidly deploy and conduct sustained operations provides the MAGTF with tremendous operational flexibility. It also permits the ACE to redeploy to another operating area

A self-reliant ACE is task-organized to support itself logistically with accompanying supplies and for specific timeframes without undue concern for resupply or reliance upon developed infrastructure ashore. An ACE's AVLOG capabilities and accompanying supplies enable it to sustain its operations for up to 90 days while awaiting the establishment of external resupply channels and distribution networks.

AVIATION LOGISTICS VERSUS AVIATION GROUND SUPPORT

Logistical support of the ACE is more complex than other MAGTF elements due to sourcing and funding by both the Navy and Marine Corps. Therefore, the ACE must employ different procedures from its ground counterparts for aviation-related supply, maintenance, and aviation ground support operations.

Two organic units that provide logistical support to the ACE are the Marine aviation logistics squadron (MALS) and the Marine Wing Support Squadron (MWSS). The MALS provides AVLOG (supply, maintenance, and aviation ordnance), while the MWSS provides aviation ground support (AGS), including expeditionary airfield (EAF) support, expeditionary firefighting and rescue, Forward Arming and Refueling Points (FARP), and Combat Service Support (CSS). The respective logistics combat element will provide CSS when requirements exceed the ACE's capability. Detailed information about AGS can be found in Marine Corps Tactical Publication 3-20B, *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 altogether.

Associated national agencies, such as the Office of the Secretary of Defense, 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 component commanders, MAGTF commanders, logistic staffs, and ACE logisticians handle operational and tactical aviation logistic issues.

Strategic-Level Aviation Logistics

Strategic AVLOG supports organizing, training, and equipping the forces needed to further national interests; furthermore, 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, other government agencies and the support of the private sector, as required. 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, two 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. Support includes—

- 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.
- Providing training to Marine Corps AVLOG personnel in preparation for required support activities.

Within the Aviation Department of Headquarters, United States 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. 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, which includes 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). 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 C2 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 geographically pre-positioned and maritime pre-positioned 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

Tactical AVLOG supports 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 and 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 is 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, avionics department, supply department, and ordnance department, rather than the MALS, are responsible for the AVLOG support of embarked Marine aircraft. Marine Corps aircraft squadrons operating from a carrier receive support from similar entities aboard the carrier. Maintenance, avionics, supply, and ordnance personnel from the MALS 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. It responsible for providing intermediate-level (I-level) maintenance, avionics, supply, ordnance, and information technology systems support for aircraft and aeronautical equipment. A typical MALS is tasked organized to provide aviation logistics support to fixed wing (FW), rotary wing (RW) or tilt rotor (TR), as shown in figure 1-1.

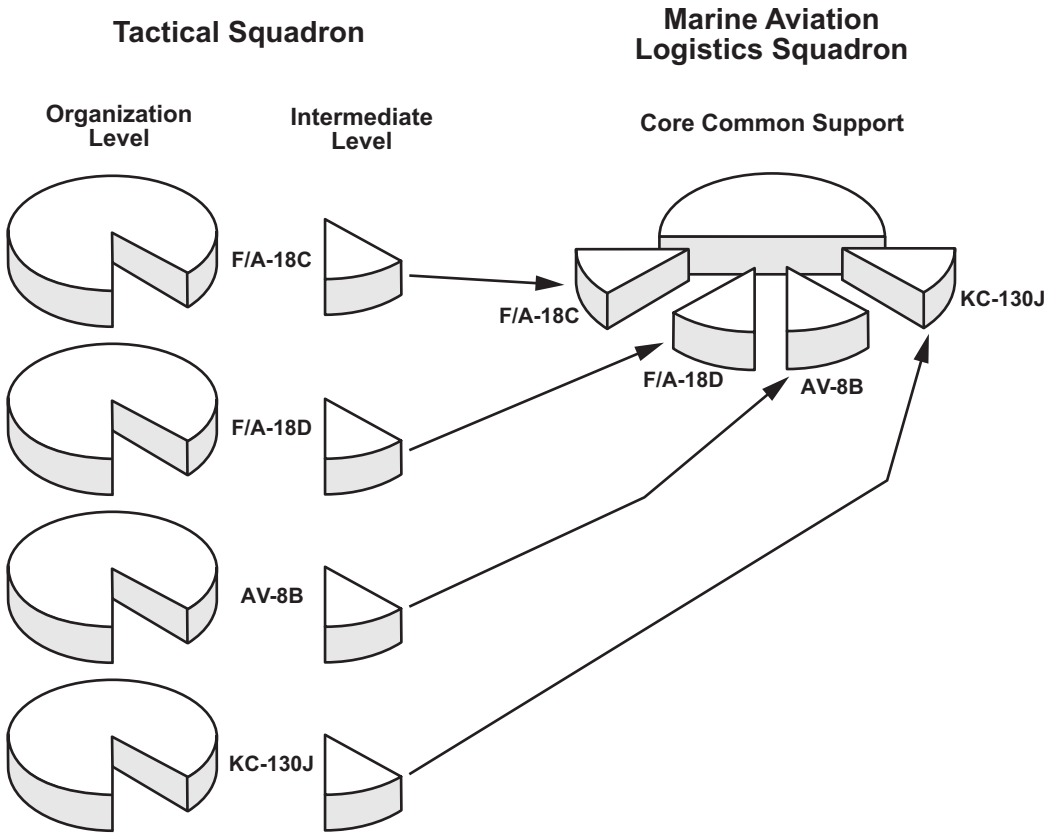

Figure 1-1. A Typical Organizational Structure of a Marine Aviation Logistics Squadron.

MAINTENANCE LEVELS

The following publications describe the construct of the three levels maintenance—Organizational level (O-level), I-level and Depot level (D-level)—employed across Naval Aviation and govern the management of all levels of aviation and aeronautical equipment maintenance and ordnance.

- Naval Air Forces Instruction 4790.2, *The Naval Aviation Maintenance Program (NAMP)*.
- Chief of Naval Operations (OPNAV) M-8000.16. *The Naval Ordnance Management Policy (NOMP) manual*.

The NAMP also establishes procedures that 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 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

Operating units (squadrons) perform organizational level maintenance on a daily basis by in support of their operations. The objective of O-level maintenance is to maintain assigned aircraft and aeronautical equipment in a full mission-capable status while continuing to improve the local maintenance process. When required, O-level maintenance may be performed by I-level or D-level activities. Generally, O-level maintenance is grouped under the following categories:

- Inspections.
- Servicing.
- Handling.
- Troubleshooting.
- On-equipment corrective and preventive maintenance, including repair, removal, and replacement of defective components.
- Class V(A) (aviation ammunition) ordnance loading/downloading and arming/de-arming.
- Incorporation of technical directives.
- Record keeping and reports preparation.
- Age exploration of aircraft and equipment under reliability-centered maintenance.

Intermediate Level Maintenance

Intermediate-level maintenance is the responsibility of and performed by designated maintenance activities, usually the MALS. The objective of I-level maintenance 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 is 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 reliability-centered maintenance.
- Munitions assembly and receipt, issue, storage, transportation and inventory.
- Off-equipment corrective and preventive maintenance, including repair, removal and replacement of defective components.

Depot Level Maintenance

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

- Standard D-level maintenance of aircraft.
- Rework and repair of engines, components, and support equipment.
- Calibration performed by Navy calibration laboratories.
- Incorporation of technical directives.
- Modification of aircraft, engines, and support equipment.
- Manufacture or modification of parts or kits.
- Technical and engineering assistance by field teams.
- Rework of EAF components that are necessary to support a task-organized mix of Marine aircraft.

MARINE AVIATION LOGISTICS SUPPORT PROGRAM MODERNIZATION

The Marine Aviation Logistics Support Program (MALSP) concept evolved from the 30-year old legacy MALSP doctrine—developed for Marine expeditionary force (MEF) sized operations—to the MALSP Modernization construct. The purpose of MALSP Modernization is to provide a more responsive, agile, flexible and sustainable solutions through properly sized forward operational footprints synchronized across a demand-pull nodal logistics chain. In accordance with Marine Corps Vision and Strategy 2025 and the Maritime Strategy. Marine Aviation is posturing itself for operations in new and uncertain austere expeditionary environments. This will ensure the ACE and MAGTF are supported across the range of military operations.

TASK-ORGANIZING FOR AVIATION LOGISTICS SUPPORT

A key feature of the MALSP MOD concept is the ability of the MALS to rapidly task organization and deploy with its supported ACE. The primary means for accomplishing this is a series of standardized, predetermined logistical support packages containing all elements (excluding Class V[A] munitions) required to support an the ACE during the execution of MAGTF tasks specified in an OPLAN. Contingency support packages (CSPs), the primary MALSP building blocks, contain negotiated allowances of spare parts, support equipment, 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, , mobile facilities, and the spare parts needed to support all aircraft types that could comprise a MAGTF ACE. This integration permits the ACE to generate sorties necessary to conduct combat or non-combat missions.

While in garrison, Marine aircraft squadrons of a specific type/model/series (T/M/S) are consolidated into specific Marine aircraft groups (MAGs) in order to achieve economies of scale and scope. 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 combat element. The result is a task-organized squadron, MAG, or Marine aircraft wing (MAW), depending on the size of the MAGTF 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.

MARINE AVIATION LOGISTICS SUPPORT PROGRAM MODERNIZATION PACKAGES AND ALLOWANCES

Compositing occurs when creating a MAGTF ACE. 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 that receives these building blocks or CSP is the host. 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 understand the composition of the various MALSP packages.

When designing MALSP MOD allowances, planners shall identify logistic shortfalls early in the planning process. It will allow ample time to request assistance from alternate MALS or the Commander, Naval Air Forces. As a starting point in developing MALSP, notional aircraft assignments to support Marine expeditionary brigade (MEB) ACEs are developed. Logistic support requirements are 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. These building blocks are arranged 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. Allowances are designed to be mutually supportive and fit together like blocks to form a solid aviation support foundation, as shown in figure 1-2. For example, the host MALS is comprised of people and equipment from one or more PMALS. The host MALS is task-organized to provide AVLOOG support to its designated ACE.

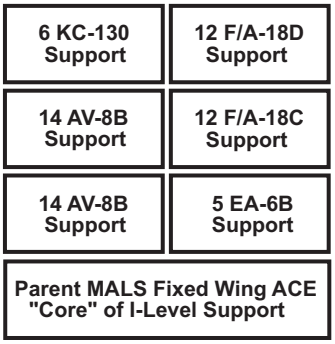

Figure 1-2. Marine Aviation Logistics Support Program Building Block Concept.

FLY-IN SUPPORT ALLOWANCE

A majority of ACE FW and RW 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) are 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 FSA contained in mobile facilities, a limited O-level individual materiel readiness list (IMRL)/support equipment, and EAF items.

The FSA is an organizational level parts support package, designed to support the FIE aircraft of a MAGTF ACE. The FSA consists of a mirror-image allowance built to support a particular T/M/S and quantity of aircraft. The allowance provides the spare parts normally removed and replaced at the O-level and are computed at combat utilization rates for a 30-day endurance period. 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, an FSA is considered protected stock materiel, that 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 FSA assets are not removed to fill materiel requirements in support of garrison/peacetime operations. Additionally, FSAs 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 non-custody coded (referred to as 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. Refer to table 1-1 for a list of custody codes used for individual materiel readiness. 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.

Table 1-1. Individual Materiel Readiness List.

Code	Usage	Remarks
E	Items used infrequently (less than once a month).	These items are available to activities from the supporting IMA, as required. After use, the activities return the item to IMA.
M	Non-calibratable items requiring management and are not custody coded.	The quantity authorized for M-coded items is the total quantity required for sub-custody by each activity supported. For example, an M-coded item, such as a carrying case for a calibratable item, will be 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 number required for sub-custody to each O-level maintenance activity. The items are issued on a sub-custody 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 number required for sub-custody by each activity supported. The O-level activities retain the items when deployed.

Upon a squadron's arrival in the area of operations, the fly-in support allowance (FSA) will be combined with O-level containing an attachment of I-level personnel and 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 strategic airlift, or by another mode of transportation.

MAG Support Allowance

The MSA is a non-mirror image day-to-day operating allowance built to support the specific mix of T/M/S and quantity of aircraft for a MAG's active, reserve, and training squadrons. It consists of O-level and I-level weapons replaceable assemblies and shop replaceable assemblies (SRA) required to provide support for a specific MAG. The MSAs are designed for 15 days of in-garrison material sustainment based on logistics response time. The MSA can be divided to provide support for a specific MAG and to provide supplemental detachment/deployment support.

Intermediate Level Contingency Allowance

The ICA is a non-mirror image allowance built to support a specific mix of T/M/S and quantity of aircraft supported by a MALS. It consists of I-level SRAs and parts to support contingencies. The ICAs are designed for 30 days of material sustainment and are supplemental to the MSA allowance. The ICA may be divided to provide flexible supplemental I-level detachment/deployment support, as shown in figure 1-3.

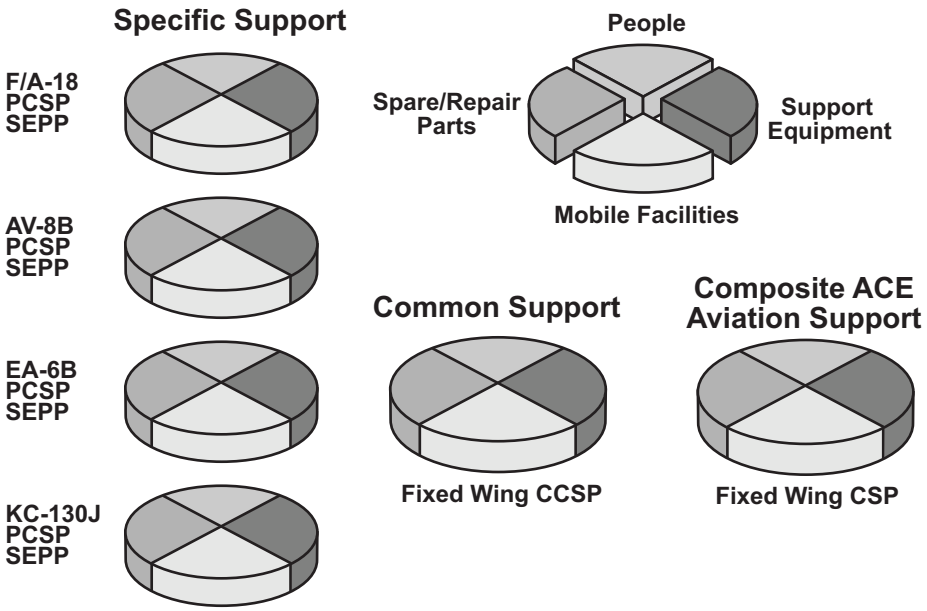

Figure 1-3. Marine Aviation Logistics Support Program Contingency Support Package.

Support Equipment Peculiar Package Allowance

The SEPP allowance consists of peculiar IMRL support equipment; which does not meet SECP criteria and is required to provide I-level (custody code N) and O-level (custody code E) support for a specific T/M/S aircraft.

Support Equipment Common Package Allowance

The SECP allowance consists of common support equipment that the host MALS provides to support assigned aircraft. A FW common support equipment (SE) item is one that has application to F/A-18 and AV-8B aircraft. A RW common SE item is one that has application to the H-1, CH-53E, and the MV-22B. For planning purposes, the FW and RW MALS will be geographically separated.

Supplemental Aviation Spares Support Allowance

The SASS allowance supports an ACE, which has been geographically (dispersed or disaggregated) intentionally separated. The SASS allowance supplements all packages for garrison or contingency based operations. It provides spare parts normally removed and replaced at the O-level. Design for the SASS is for 30 days of material sustainment to support a particular T/M/S and quantity of aircraft.

Strategic Support Allowance

The SSA provides worldwide support of all T/M/S aircraft and contains aggregated parts, which are centrally located because they are a low demand/high cost, carcass constrained, seasonal demand, or are dynamic components with airlift/sealift constraints and insurance items. The SSA design is based on unit or higher headquarters criteria and can be divided to provide supplemental detachment/deployment support.

Integrated Demand Based Items

The Integrated Demand-Based Items allowance is comprised of non-aeronautical materiel, demand based general use consumables, and any other materiel that does not reside in an aforementioned allowance support package.

Remote Expeditionary Support Package

On occasion, Marine aircraft deploy in support of contingencies without access to aviation logistics support from naval shipping or 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 will come together to form a remote expeditionary support package (RESP). 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.

A RESP consists of a mix of materiels pulled from various supply allowanced support packages, armament weapons support equipment, aircraft armament equipment minus Class V(A), IMRL, mobile facilities, hazmat, and personnel that detach from a supporting MALS to provide tailored aviation peculiar logistics support to a MAGTF ACE. As ACE missions, endurance requirements, and bed down scenarios dictate, the RESP can serve as a stand-alone capability to support operations requirements including required aviation logistics information management and support (ALIMS) resources and Personnel Support.

Design and allowances of contingency support packages (CSP) are based on support of an entire MEB's ACE complement of aircraft. The design of CSPs 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 (FSAs) augmented by selected CSP 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 an area of operations and designed to support a notional number of aircraft minus Class V(A) munitions until the arrival of logistic support from T-AVB (-CSP) -or MPF assets. 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 CSPs and require no additional economic resources. See figure 1-4.

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 currently reside within CCSPs/PCSPs and require no additional economic resources. See figure 1-4.

Training Squadron Allowance

Designated MALS provide support to training squadrons attached to the MAG they support. The training squadron allowance is 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 AVIATION LOGISTICS ENTERPRISE INFORMATION TECHNOLOGY

Maritime aviation logistics enterprise information technology is the IT solution set that enables MALSP modernization, which includes MALS allowancing, and provides the capability to support supply management, buffer management, decision support, and logistics planning. Maritime aviation logistics enterprise information technology is comprised of the Expeditionary Pack-Up Kit, Next-Generation Buffer Management System, and Logistics Planning Tool (LPT), which provides logistics professionals the ability to tailor and deploy smaller support footprints that readily sustain the force through increased efficiencies and stabilized effectiveness.

The Expeditionary Pack-Up Kit provides an expeditionary IT requisitioning capability and issue/stow/receipt, automated data entry into the Naval Aviation Logistics Command Management Information System (NALCOMIS), and near-real time data exchange with up-line tiered repositories via web accessed servers.

The Next-Generation Buffer Management System is an integrated web-based tool developed to manage and monitor physical supply buffers in a time domain across the MALSP modernized demand-pull nodal logistics chains.

The LPT is an integrated web-based tool that identifies initial outfitting of RESP resources for an ACE that is conducting missions across a range of military operations. Additionally, the LPT identifies risks associated with resource constraints and automates the transfer of deployment data for strategic lift requirements.

MARITIME PREPOSITIONING FORCE AND AVIATION LOGISTICS SUPPORT SHIP SUPPORT

Depending upon the scope of operations, an ACE may receive support from vessels of a Maritime prepositioning ships squadron (MPSRON) or a T-AVB.

Maritime Prepositioning Force Operations in Support of Expeditionary Aviation Logistics

An MPF operation includes the airlift of MAGTF and Navy elements, the Navy support element with selected equipment into an arrival and assembly area to join with equipment, and supplies that area carried aboard MPSs. Maritime prepositioning provides a combatant commander with deployment flexibility and an increased capability to respond rapidly to a crisis or contingency with a credible force. An MPF operation may consist of one ship interacting with a forward-deployed MEU or a MPSRON and a MEB FIE. An MPF operation may also consist of a MEF interacting with both MPSRONs.

Aviation Logistics Support Ship Operations

The mission of the T-AVB—a combination container, roll on/roll off and lift on/lift off vessel—is to provide a rapid and dedicated sealift for employment of a tailored aviation intermediate maintenance activity to support deployment of Marine Corps FW and RW aircraft. Equipment and supplies required to sustain forward deployed FW and RW aircraft are delivered by the T-AVB in either operational, transport, or combination mode. Although the concept of operations for the T-AVB is primarily to support MAGTF operations, the T-AVB may be tasked to support other amphibious operations. The T-AVB requires a port of debarkation for offloading AVLOG support assets once the threat condition is permissive. If the embarked MALS intermediate maintenance support is phased ashore, the T-AVB may be reassigned as a common use transport vessel in the strategic sealift fleet.

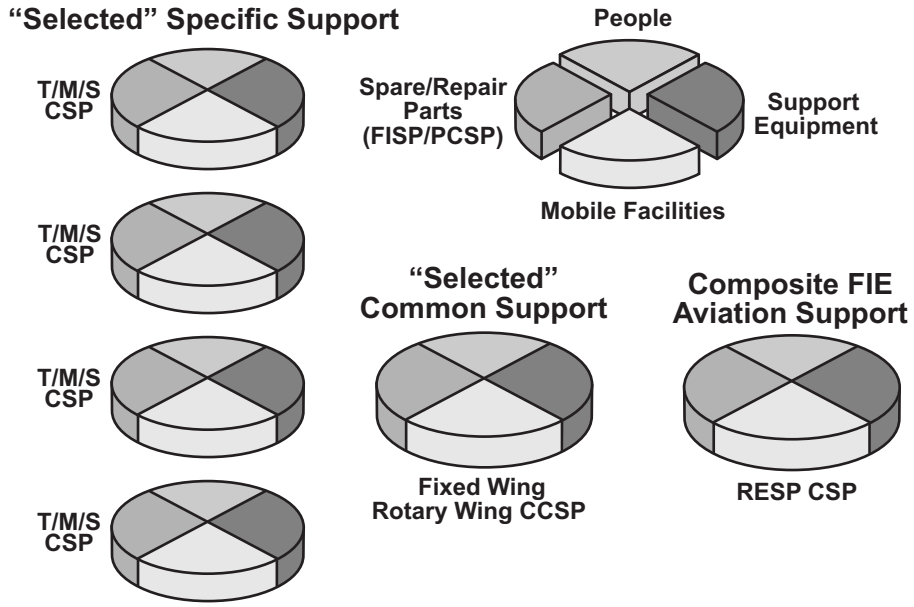

Figure 1-4. Remote Expeditionary Support Packaging

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 Military Sealift Command's (MSC's) Ready Reserve Force and are crewed by maritime administration personnel in reduced operating status 5; meaning they can be fully activated in 5 days. When activated, the Ready Reserve Force ships come under the operational control of the applicable fleet command and they exercise the authority to delegate operational or tactical

control to the appropriate task/group command. Both the *SS Wright* and *SS Curtiss* may be configured to allow for I-level repair capability while underway, in stream, or pier-side and have a flight deck capable of accommodating RW aircraft up to the size of CH-53E heavy lift helicopter. Information technology systems that support aviation logistic operations aboard the T-AVB are provided by the embarked MALS. Ships may be configured to accommodate a fully or partially operational MALS while underway, dependent upon mission requirements. Upon activation, the T-AVB is loaded and moves to an assigned sea operational area or seaport of debarkation within approximately 30-35 days. Intermediate maintenance activity spare parts and equipment may be transferred ashore on arrival if conditions permit. If rapid movement ashore is not possible, MALS operations can be sustained aboard ship in the operational area. Under these conditions, the T-AVB prioritizes its workload in support of flight line maintenance requirements.

RESERVE AVIATION LOGISTICS

The Commander, United States Marine Corps Forces Reserve organizes the Marine Corps Reserves. The mission of the Marine Corps Reserve is to provide trained units and qualified individuals available for active duty in a time of war or national emergency, and when national security requires. Marine Corps Reserve aviation support is organized and employed in the same manner as 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 ease as active assets. The structure of the Marine Corps Reserve predominantly reflects active operating forces. The Marine Corps Reserve is organized into individual augmented 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.

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.

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.

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 military operations. 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 commands/agencies support naval aviation, as shown in figure 2-1. In logistics, the most visible function is naval aviation materiel support is 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, 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.

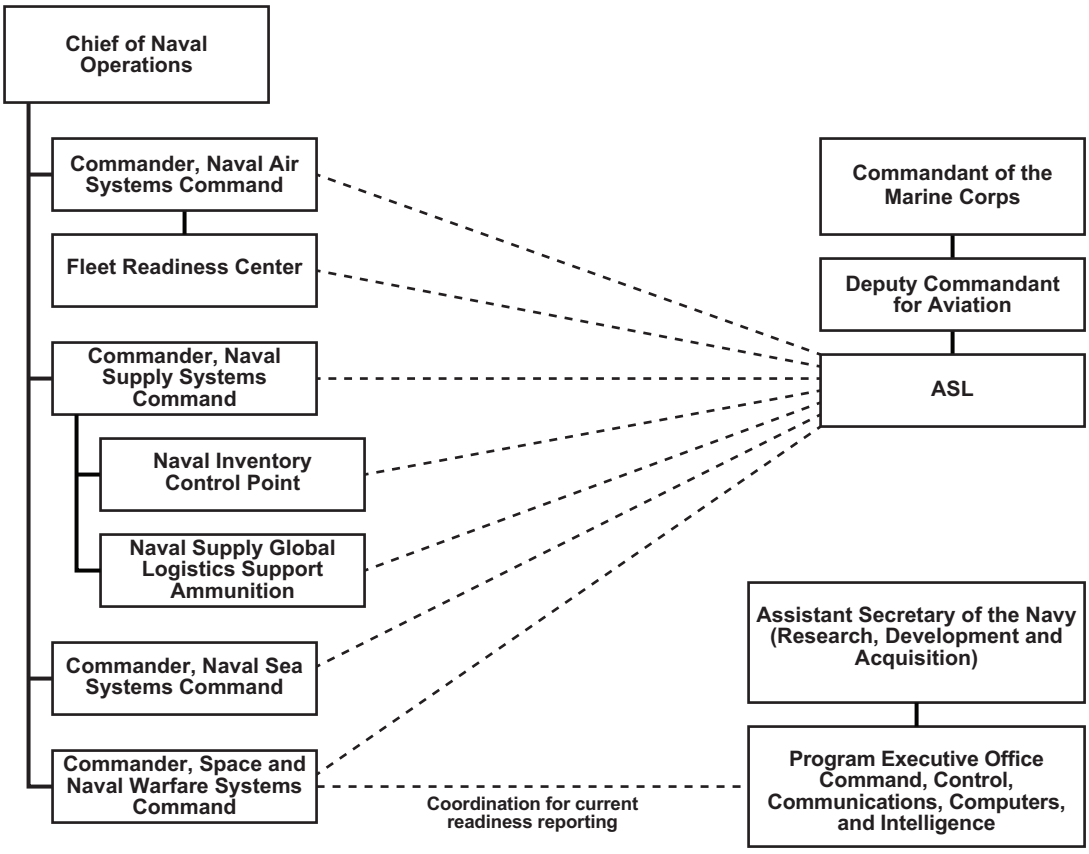

Figure 2-1. Notional Aviation Logistics Supporting Establishment

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 the Naval Air Systems Command (NAVAIRSYSCOM). As the technical manager for aviation maintenance, the COMNAVAIRSYSCOM will—

- Assist the CNO and others in developing training programs for officer and enlisted personnel assigned to aviation maintenance.
- Provide aviation maintenance materiel allowance lists and lists of facilities that are authorized, available, and required for fleet and shore activities.
- Make 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.
- Serve as functional manager for NALCOMIS per Naval Air Systems Command Instruction 5230.11, *Fleet Aviation Logistics Information Systems Functional Management Manual*.
- Provide NAMP instruction support for CNO N781C (OPNAV Principle Official Program Sponsor).
- Provide fleet aviation performance improvement support.
- Provide on-site NAVAIRSYSCO field service representative support to activities requesting assistance.

- Develop and maintains management information systems that directly support the fleet.
- Plan, design, develop, and implement all information decision support systems that affect the total life cycle of aeronautical equipment.
- Provide technical support related to naval aviation resource analysis, maintenance engineering, logistic engineering, and logistic support program implementation.
- Provide support to all aviation maintenance trainers and weapon system training programs and manages D-level aircraft training courses.

Naval Supply Systems Command

Naval Supply Systems Command (NAVSUP) provides materiel in support of the operation and maintenance of aeronautical equipment/ordnance. Every effort is made to have materiel on site 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 NAVSUP locations and the NAVSUP Ammunition Logistics Canter (NALC) ammunition provide for the functions discussed below.

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

- Budget for and funds all assigned aviation materiel requirements.
- Procure materiel directly from industry or other government agencies.
- Allocate NAVAIRSYSCOM procured materiel to stock points, distributes materiel to fill replenishment stock requirements, and refers requisitions to stock points to meet requirements.
- Dispose of materiel in excess of system requirements (which includes support equipment) when authorized by the COMNAVAIRSYSCOM.
- Maintain aeronautical spares and spare parts catalog. The catalog function includes obtaining national stock numbers from the Defense Logistics Information Service Center.
- Determine system asset rework requirements of repairable components to be processed by naval, inter-Service, or commercial rework facilities.
- Provide primary materiel support for air-launched weapons.

The NAVSUP Ammunition Logistics Center (NALC) ammunition 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 NAVSUP NALC ammunition will—

- Provide support to fleet ordnance positioning, conducts storage analysis, and ensures worldwide visibility of the fleet plan.

- Provide 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).
- Serve as the naval aviation ordnance community's point of contact for moving conventional ordnance to locations outside CONUS.
- Provide life cycle program support for all naval ammunition, weapons, combat systems, and support equipment.
- Act as the naval ordnance automated information system (AIS) program manager and provides functional management of OIS-W and Ordnance Information System-Retail (OIS-R).

Marine Corps Systems Command

A Marine Corps Systems Command component, the Program Manager, Ammunition implements and manages the Explosives Safety Management Program for the Marine Corps. The Program Manager, Ammunition also provides policy guidance on the following:

- Explosives safety.
- Marine Corps explosive safety inspection.
- Explosives Safety Management Program evaluations.
- Explosives handlers' qualification and certification.
- Environmental compliance for munitions.

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

The 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.

The PEO C4I, Command and Control Program Office, 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 in support of the AVLOG community. 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 figure 2-2). Each TYCOM coordinates aeronautical equipment assignment logistic support and maintenance performed on aeronautical equipment under their custody. Naval operating forces are assigned to TYCOMs for oversight of training, employment, and logistic support. The Commander, Marine Corps Forces, Pacific (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 non-combat expenditure allocation (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 Commander, Naval Air Forces (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 aviation logistics department (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. Modification functions include complete rebuild, reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, replacement of system consumables, 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. In order to effectively perform industrial rework and manufacturing functions, aviation systems, subsystems, components, and equipment must be allocated and distributed to the production shops according to the individual shops' industrial function capabilities.

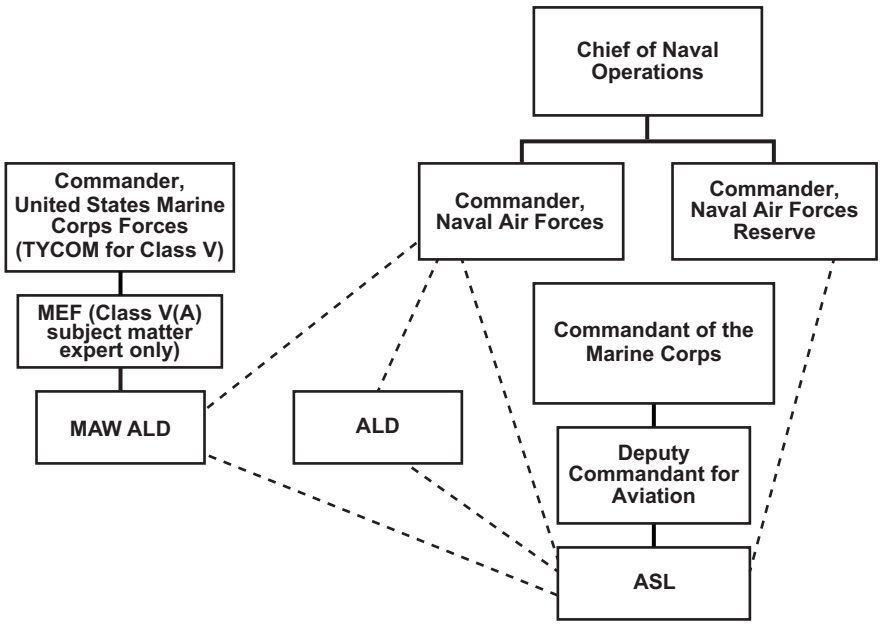

Figure 2-2. Notional Aviation Logistics Organization (Situation Dependent).

Support Services

Depot-level maintenance supports the O- and I-levels by providing technical help and carrying out those functions that are beyond the responsibility or capability of O- and I-level activities. Depot level facilities called fleet readiness centers (FRC) utilize more extensive skills, and materiels. Personnel from D-level carry out 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 based on a 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 Branch head, ASL is 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 the following:

- 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 CNO to ensure that the characteristics of newly procured or developed equipment and materiel for the Marine Corps meets operational requirements and that proposed training prepares Marine Corps personnel for combat.
- 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 with the distribution of aeronautical and related materiel for adequate outfitting of Marine Corps aviation units.
- Develop logistic plans and programs for aviation units.
- Represent Marine Corps aviation in developing:
  - Naval aviation maintenance and supply policies and procedures.
  - 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 for conventional ammunition.
- Function as the occupational field specialists in aviation maintenance, avionics, ordnance, supply, and 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 Department of the Navy activities on MALSP policy and requirements within a command and between supported and supporting commands.

MARINE CORPS FORCES COMPONENT COMMAND AVIATION LOGISTICS DEPARTMENT

All Marine Corps forces in support of a Joint Force Commander will be either ADCON, TACON, and/or OPCON to a Marine Corp component command, 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 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 functional matters within its 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 the management, distribution, and accountability of mobile facilities and ancillary equipment. The ALD provides AVLOG assistance to bases and stations as required. 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 that are described in subsequent paragraphs.

Aircraft Maintenance

Aircraft maintenance will—

- Provide counsel to the AC/S ALD and other staff sections on all aviation maintenance-related matters.
- Coordinate with the NAMP policy steering committee member in HQMC ASL on maintenance/materiel policy and procedures.
- Participate with external aviation support activities in all decision-making 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 the 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, analyzing, and evaluating managerial and performance data in relation to the aviation maintenance effectiveness and readiness posture of the force.

Aviation Supply

The aviation supply department will—

- 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 with improving aviation supply support policies and processes to ensure maximum aircraft/aeronautical system readiness.
- Act as the point of contact for aviation supply-related affordability issues and participate in all activities that identify and resolve significant aviation supply issues negatively impacting force readiness.
- Review, analyzing, and evaluating 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 will—

- 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 coordinating 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 will—

- 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 (logistics directorate of a joint staff) for Marine Corps Class V(A) ammunition logistic issues.
- Administer 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 Corps activities.
- Monitor Marine aviation support package Class V(A) portion and authorizing 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 the fleet combatant commander concerning 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. For example, 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, accuracy, accountability, and reporting of Class V(A) assets.
- 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, reviewing, and providing guidance to subordinate commands for arms, ammunition, and explosives security.
- Validate and approving 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 Naval Munitions Requirements Process (NMRP) executive working group for MARFORCOM.

Aviation Logistics Information Management and Support

The aviation logistics information management and support department will—

- Provide counsel to the AC/S ALD and other staff sections on all aviation information technology-related matters.
- Develop and coordinating information technology policy.
- Participate with external aviation support activities in all decision-making processes that relate to information technology deployability and sustainability.
- Collect and analyzing 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 that directly impact 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, collecting, and analyzing all present and future information management 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, analyzing, and evaluating 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 the 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 will—

- 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 by the Adaptive Planning and Execution System and Marine Corps warfighting publication 5-10, Marine Corps Planning Process as required.
- Identify and develop naval mission-essential task list requirements for component AVLOG requirements.
- Coordinate component AVLOG participation in joint and Service exercises.
- Identify and developing 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 relating to AVLOG.
- Coordinate component policy development for land prepositioning programs.
- Coordinate Reserve Component force integration requirements for exercises and contingencies.
- Coordinate and monitoring 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 providing AVLOG input for component input to the combatant commander's Joint Monthly Readiness Review.
- Participate in and coordinating 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, such as Marine security guard detachments. Commanders of Marine Corps forces may be assigned or designated as the Marine Corps component to the Joint force commander, which their forces are assigned. The commander of Marine Corps forces coordinates and manages strategic and operational logistic support issues.

The MARFOR's ALD, with the respective G-3 and G-4, determines the AVLOG requirements in support of the CCDR. The ALD is responsible for ensuring the host MALS is tasked organized, and appropriately supported so it can provide continuous AVLOG support to the ACE. The ALD advises the commander on the readiness status of AVLOG support packages, identify requirements, and recommend priorities and allocations for AVLOG support in all functional areas. The ALD works closely with assigned forces, specifically the assigned wing (ALD) sections to perform AVLOG responsibilities. The ALD will—

- Provide advice on the readiness status of AVLOG support packages.
- Develop policies and identify requirements, priorities, and allocations for AVLOG support.

- Integrate AVLOG operations with logistic support from external commands or agencies.
- Supervising the execution of the commander's orders regarding AVLOG.
- Ensure 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.
- Conduct deliberate and Crisis Action Planning (CAP), integrating AVLOG into overall CSS concept of support.
- Conduct RSOI planning for the AVLOG concept of support.
- Develop AVLOG concept of support for OPLANs/CONPLANs.
- Identify and resolve support deficiencies.
- Collate the support requirements of subordinate organizations.
- Identify the support requirements that can be satisfied with organic resources and passing non-supportable requirements to the appropriate higher/external command.
- Coordinate 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 MAGTF ACEs that are deployed or preparing to deploy, on 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. The MEF coordinates with MARFORCOM/MARFORPAC or MAW and will—

- Provide counsel to AC/S G-4 and other staff sections as required on all aviation ordnance related matters.
- Monitor 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 related to Class V(A).
- Act as liaison, monitoring, and providing guidance to MEU ACE Aviation Ordnance Officers.
- 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. Goals are 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 (ALD-B)

Primary responsibilities of the aircraft maintenance branch 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 aircraft maintenance 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 HQMC ASL and CNAF on NAMP policy implementation and improvement.
- Performs audits and training of subordinate command maintenance departments through the Aviation Logistics Management Assist Teams.
- Coordinates with the ALIMS branch on changes/updates to MALSP and the use of the T-AVB.

Aviation Supply Branch (ALD-C)

Primary responsibilities of the aviation supply branch includes coordinating aviation materiel (e.g., inventory management, distribution, storage), 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, MAW commander, and the assigned MAGs. Additional responsibilities of the aviation supply branch include—

- Implementing and coordinating aviation supply policy within the MAW.
- Performing audits and training of subordinate command supply departments through the Aviation Logistics Management Assist Teams.
- Conducting liaison with external agencies in support of aircraft readiness within supported MALS
- Coordinating aviation materiel support for ship and unit deployments.
- Coordinating the assignment of personnel in the 6602, 6604, and 6672 MOSs.
- Analyzing aviation supply and financial management performance.
- Monitoring weapon system materiel support transitioning from commercial supply to Navy supply.
- Coordinating and monitoring the AVCAL and COSAL MALSP Allowance Review Milestone Process.
- Receiving, forwarding, and verifying all AVCAL and COSAL inventory/validation packages from NAVSUP Weapon Systems Support Philadelphia (P)/Mechanicsburg (M).
- Monitoring all allowance change requests for compliance with MALSP and ensures allowances are properly loaded.
- Ensuring FSA Building Block Allowances are properly identified.
- Reviewing and approving offload processing for the MALS.
- Coordinating with the ALIMS branch on policy development input to HHQ for changes/ updates to NTCSS and other aviation logistic information systems.
- Representing the MAW as a member of the executive working group committees charged with review of publications concerning aviation supply SOPs.

Aviation Ordnance Branch (ALD-D)

Primary responsibilities 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. Additional responsibilities of the aviation ordnance branch include—

- Monitoring the NCEA provided to sustain the supported MAGs.
- Managing aircraft armament systems (AAS) prime pool under the cognizance of the functional TYCOM.
- Monitoring the Personnel Qualification and Certification Program for Class V Ammunitions; along with the Explosives the Marine Corps Ammunitions and Explosives Safety Program, as administered by subordinate commands.

- Registering 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.
- Assisting the G-3 in compiling testing and training requirements from subordinate commands for submission to HHQ.
- Monitoring, reviewing, and providing guidance to subordinate commands for arms, ammunition, and explosives security.
- Conducting Class V(A) ammunition deliberate planning in support of OPLANs.
- Representing MARFORCOM and MARFORPAC as a member of executive working group committees charged with review of publications concerning aviation ordnance SOPs and explosive safety manuals.

Avionics Branch (ALD-E)

Primary responsibilities of the avionics branch encompasses management of all avionics policy matters and readiness issues within the wing while advising the AC/S ALD and Commanding General. Additional responsibilities of the avionics branch include—

- Managing all mobile facility and related ancillary equipment, and coordinating the procurement and distribution of mobile facility assets between higher and lower echelons.
- Maintaining a serialized inventory of selected Aircraft Survivability Equipment (ASE), Electronic Countermeasures Systems, and Electronic Warfare Systems, and coordinates assignment and distribution of the same to units throughout the wing.
- Acting as the occupational field sponsor for the wing and coordinating the assignment of personnel in the 63XX/64XX MOSs.
- Coordinating Engineering Technical Services (ETS) for supported MAG squadrons through liaison with local Naval Air Technical Data and Engineering Service Command and TYCOMs in support of operational units.
- Coordinating with senior and subordinate headquarters to ensure squadrons are provided the required number of combat avionics systems and specialized mission kits to support all mission requirements.
- Coordinating between senior and subordinate headquarters to ensure prompt verification of Rapid Action Minor Engineering Changes (RAMECs).
- Coordinating and providing oversight to calibration services performed by subordinate units while managing depot level calibration man-hours allocations for IMRL, GSE, and other test equipment.
- Monitoring the wing Integrated Weapon System Review (IWSR) Program, ensuring that all program objectives are met, to include achievement of annual training and pre-deployment milestones.
- Conducting Mobile Facility Program and Metrology and Calibration Program inspections for units throughout the wing.
- Assisting wing units with the coordination of specialized NAVAIR assessment team visits to assist squadrons with assessment of ASE systems and Electrical Wiring Interconnect Systems (EWIS).

Aviation Logistics Plans Branch (ALD-G)

Primary responsibilities of the AVLOG plans branch include developing, coordinating, and assessing the AVLOG elements TPFDD required for deliberate and crisis action planning. 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 AVLOG responsibilities include—

- Coordinating MAW policy development input to HHQ for geoprepositioning programs, updating to the MAGTF logistics automated information system family of systems, and updating MALSP doctrine to include the use of the T-AVB.
- Reviewing 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.
- Developing force deployment planning and execution (FDP&E) options during deliberate planning.
- Providing input for the MEF/Marine Corps component commanders AVLOG annex.
- Managing configuration of the T-AVB AVLOG ships and assists ALD Plans and G-3 with establishment of training objectives and scheduling training exercises to maintain organic capability in the loading and conduct of shipboard AVLOG functions to support expeditionary MAGTF operations.

Aviation Logistics Information Management And Support Branch (ALD-IT)

Primary responsibilities of the ALIMS branch include managing all AIS policy matters and coordinating information systems matters between assigned MAGs, MAWs, and TYCOMs. Additional key ALIMS responsibilities include—

- Implementing and coordinating AIS policy within the MAW.
- Coordinating with MAW G-6 (assistant chief of staff, communications system) on all matters concerning information technology employment and policy.
- Coordinating AIS support for ships and unit deployments.
- Coordinating assignments of aviation information systems specialists (MOS 6694).
- Conducting liaison with external agencies in support of AIS.
- Coordinating with all MAW logistic branches on policy development input to HHQ for changes/updates to NTCSS and other AIS.
- Providing counsel to the AC/S ALD and other staff sections on all aviation information technology-related matters.
- Participating with external aviation support activities in all decision-making processes that relate to MAW information technology deployability and sustainability.
- Collecting and analyzing AIS readiness data to determine information technology support shortfalls and provide recommendations for corrective actions.
- Providing guidance to subordinate units and any internal staff section on the status of information technology systems or the degradation of services.
- Maintaining involvement on present and future budget requirements directly impacting AIS capabilities.

- Participating with outside support activities to develop and facilitate information technology support requirements for unit deployments.
- Coordinating with appropriate activities regarding enhancements and standardization of AVLOG information technology.
- Monitoring the execution of AIS functions relating to MALSP.
- Identifying, coordinating, and synchronizing AVLOG information technology requirements and implementation for new information technology platforms.
- Advising HHQ on aviation information systems specialists.
- Advising HHQ on all AIS-related matters, such as the equipment status report.
- Reviewing, analyzing, and evaluating managerial and performance data related to aviation information systems effectiveness and readiness posture of the force.
- Providing 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.
- Validating information technology requirements and coordinates support of information technology systems.
- Representing the MAW as a member of executive working group committees charged with review of publications concerning aviation information technology systems SOPs.

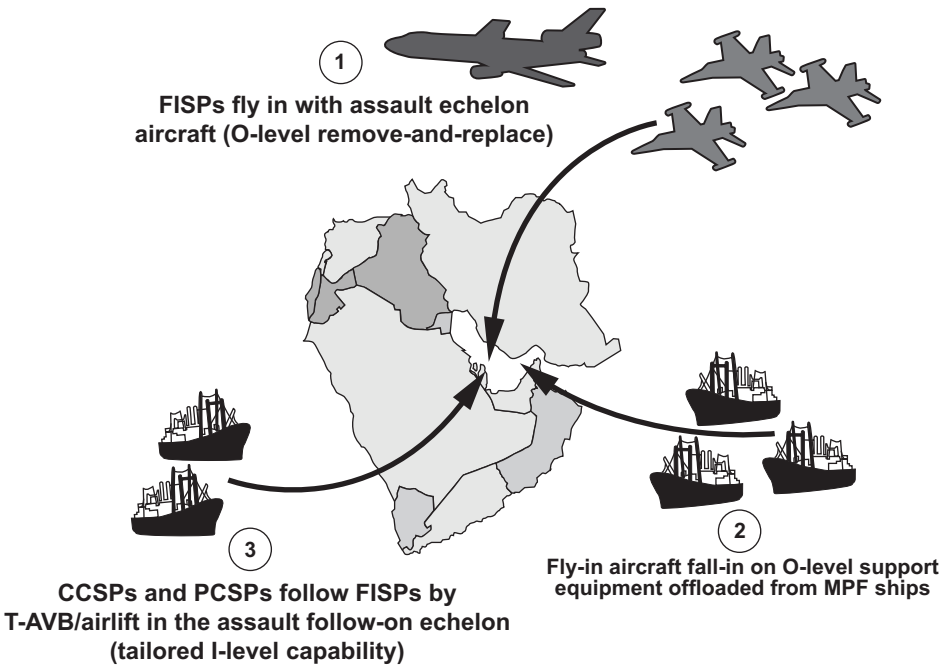

Figure 1-5. Marine Aviation Logistics Support Program Employment.

CHAPTER 3
MARINE AVIATION LOGISTICS SQUADRON

The MALS serves as the AVLOG staff to the MAG Commander and provides AVLOG support, such as aviation-specific maintenance, ordnance, avionics, and supply, for subordinate elements of a MAG.

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

- Provide I-level maintenance for aircraft and aeronautical equipment to all supported units and perform first-degree repair on specific engines.
- Provide Class V(A) ammunition logistic support to ACE squadrons. Logistic 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 to 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, MACG, and other supporting Navy and Marine Corps activities in planning for the support required to execute AVLOG.
- Provides Navy-specific supply support to the MWSS EAF and Marine Air Control Group (MACG) weather sections.
- Screen and inspect non-serviceable 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, ground support equipment maintenance, flight equipment, cryogenics, logs and records management, aircraft accounting, 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 combat readiness of the tactical squadrons. Specific responsibilities of the MALS maintenance department include—

- Providing Quality Assurance Oversight of all NAMP programs within the MALS.
- Managing and providing instruction to adjacent departments on programs managed by the Maintenance Department such as Production Control, Foreign Object Debris, and Tool Control.
- Coordinating 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.
- Conducting liaison among squadrons, stations, MAWs, and other activities in connection with maintenance or materiel matters.
- Ensuring squadrons within the MAG provide temporary augmentation personnel as required for training in the maintenance of organic systems and subsystems by the I-level.
- Coordinating predeployment planning for the provisioning of personnel, facilities, support equipment, and services for supported squadrons.
- Screening 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.
- Screening appropriate MALSP IMRL allowances to ensure they are tailored to support the quantity and type aircraft assigned to the MAG squadrons.
- Assisting the MAG Commander in managing aircraft assignments within the MAG.
- Maintaining liaison with supported squadron maintenance materiel control centers and the aviation supply department (ASD) and ensure adequate validation and reconciliation of outstanding requirements takes place, directing particular attention to the detection and removal of all administrative impediments to aircraft readiness
- Performing joint aircraft inspections periodically with squadron maintenance officers.
- Assisting squadrons in obtaining engineering technical assistance.
- Monitoring MAG squadrons to ensure—
  - An effective maintenance program is being conducted.
  - An active and effective quality assurance monitoring program exists.
  - Correct maintenance, administration, and materiel handling procedures are used.
- Coordinating with other staff organizations to ensure maintenance facility requirements for MALS and the O-level are updated and submitted as required.
- Assisting flying squadrons in coordinating the assignment of aircraft parking spaces within the MAG with the MAG S-4.

- Ensuring an aggressive and effective management program is in place to control cannibalization of aeronautical equipment; ensuring selective cannibalization actions are planned to prevent aircraft from being in a non-flyable status for more than 30 consecutive days.
- Ensuring inter-MALS liaison is maintained for repair of components in the secondary repair site program.
- Coordinating D-level drive-in or field modifications of assigned aircraft.
- Ensuring an effective program is in place to perform a quarterly review of the MALS individual component repair list.
- Conducting regular meetings, chaired by the maintenance officer and co-chaired by the aviation supply officer, with supported units to ensure optimum communication and coordination.
- Managing all incoming and outgoing logs and records for accuracy and timeliness to ensure squadron RFI components are readily available.
- Ensuring the proper accounting of aircraft and engines inventory, status and location.
- Ensuring timeliness and accuracy of XRAY submission by squadrons and initiate corrective actions on discrepancies within their cognizant MAGs.
- Analyzing the mission accomplishment and capabilities of the department using reports provided by the MDS on a continuing basis.

AVIONICS DEPARTMENT

The Avionics Department supports the primary logistics mission of the MALS through focused application of personnel and technical resources to repair electrical and electronic aeronautical components, which include weapons replaceable assemblies and SRAs. In addition, the MALS Avionics Department performs maintenance and management of combat systems and mission kits, manages the Mobile Facilities Program, and provides calibration and repair services for IMRL and other precision measuring equipment to units throughout the MAG. The Avionics Department is responsible to the Commanding Officer for the functional and administrative leadership of the department, alignment of workload priorities, and to achieve production goals as established by the MALS Aircraft Maintenance Officer and Production Control.

The Avionics Department consists of the following primary work centers:

- Front Office/Administration.
- Mobile Facilities Work Center.
- Communication/Navigation Systems Work Center.
- Electrical/Instrument Repair Work Center.
- Reconfigurable Transportable Consolidated Automated Support System Work Center.
- Aircraft Survivability Equipment/Electronic Warfare Work Center.
- Radar Work Center.

- Precision Measuring Equipment Work Center.
- Micro/Miniature Repair Work Center.

The basic structure of Avionics work centers may vary slightly in different Type/Model/Series supporting MALS. Additional sub-work centers are established as required.

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, aircraft armament equipment, and AWSE by interpreting and implementing the ordnance policies and procedures for the MAG. The MALS ordnance staff will—

- Ensure the management and distribution of authorized NCEA.
- Assist the MAG (S-3) in developing, testing, and training requirements for aviation ordnance.
- Ensure 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.
- Manage the MAG's ordnance safety program and ensures explosive safety policies and procedures are issued and adhered to.
- Ensure compliance with the policies and procedures set forth in OPNAV M-8000.16 when preparing quality deficiency reports, explosive mishap reports, technical publication deficiency reports, and engineering investigation requests.
- Ensure Class V(A) ammunition is managed according to the current revision of NAVSUP P-724, *Conventional Ordnance Stockpile Management Policies and Procedures*, and other related directives.
- Establish and monitors the handling, qualification, and certification program for nonnuclear aviation ordnance and nonnuclear explosive devices for the MALS.
- Establish and maintains a satellite production control work center.
- Analyze department production and readiness using reports provided by the MDS.
- Ensure satellite production efforts support the maintenance department's goals, objectives, and standards.
- Publish a monthly maintenance and training plan for airborne weapons, training assets, AWSE, AAS, and formal in-service training of aviation ordnance personnel.
- Ensure all maintenance performed on the AAS pool and AWSE aligns with the NAMP and NOMP.
- Provide information on manpower, equipment, Class V(A) ammunition, and facilities to appropriate authorities.
- Establish a verification program for technical manuals and directives maintained by the division.
- Establish and maintains an aircraft armament equipment pool in accordance with the NOMP and TYCOM requirement.

- Ensure the OIS is used to manage Class V(A) ammunition.
- Ensure the department maintains the capability to operate from advanced bases and forward arming and refueling points.
- Coordinate 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 3, *Ammunition and Explosives Safety Ashore for Contingencies, Combat Operations, Military Operations other Than War, and Associated Training*.
- Screen squadron ordnance requests and the availability of Class V(A) ammunition to ensure only essential assets are embarked.
- Identify appropriate levels of support 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. Hours may be modified from time to time at the direction of the aviation supply officer/chief.

The ASD consist of the following divisions:

- HQ Supply Officer/Assistant Supply Officer/Supply Chief (SPAD) Division
- Supply Management Division.
- Operations Management Division.
- Warehouse Management Division.

HQ Supply Officer/Assistant Supply Officer/Supply Chief Division

The SPAD 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 provides clerical assistance for the ASD as directed by the AvnSupO or the aviation supply chief.

Supply Management Division

The Supply Management Division is composed of the knowledgeable and experienced aviation supply personnel, and are responsible for monitoring the overall supply department operation, end of the month /end of the year processes, database administration, technical training, and MALSP allowances and pack-ups (as they pertain to deployed and contingency operations). The supply management division consists of the following three branches:

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

- The MALSP Support Branch validates and monitors support packages.
- The Supply Application Administrator Branch is responsible for aviation supply portion of NTCSS applications that consists of R-Supply and NALCOMIS. The supply application administrator is the direct liaison between the ASD, ALIMS and other external activities for standalone applications that maybe utilizing for supply operations.

Operation Management Division

The Operations Management Division is responsible for the initial screening and technical research of all requisitions assigned by NALCOMIS. They also refer consumable requisitions that cannot be filled from Supply Officer Stores. Additionally, they are responsible for the reconciliation and monitoring of all outstanding direct turnover requisitions that includes the Customer Support Branch, IMRL, TOOL, open purchase, flight equipment, custodial material, and SEVMART. The operation management division consists of the customer support branch (CSB) and the financial accounting branch.

The CSB is responsible for receiving, processing and monitoring all requirements for non-aeronautical related controlled equipage and for maintaining custody records for all organizational allowances (excluding IMRL items). The CSB will also monitor all financial accounts granted to the ASD.

The Financial Accounting Branch is responsible for all tasks related to maintaining and reporting the OPTAR Fund Category -01 and in-flight refueling funds allocated to the ASD financial accounts. They also verify the financial processing of all transactions not covered under the material financial control system processing requirements as well as maintaining all related financial files, reports and listings used to support posted financial transactions.

Warehouse Management Division

The Warehouse Management Division is responsible for the receipt, storage, issue, delivery, and inventory of all repairables and Navy Working Capital Fund (NWCF) consumables. The warehouse management division is also responsible for the induction, monitoring, and recovery of repairables into and from the IMA and for the shipment and tracking of beyond capable maintenance components to the appropriate activity. The establishment and maintenance of a viable Shelf Life Program to include the management and control of all classified and fleet controlled material (repairable and consumable) is also the responsibility of WMD. The Warehouse Management Division consists of the following six branches:

- The Warehouse Receiving Branch is responsible for receiving and distributing all material shipped to the MAG/ MALS from external sources.
- The Warehouse Delivery Branch is responsible for the issue and delivery of all material in the AvnSupO's stores. The Warehouse Delivery Branch will also pick-up all repairable components, not ready for issue, from the customer ensuring accuracy of all documents (e.g., log book, scheduled removal component card, Visual Information Display System maintenance action form).
- The Warehouse Storage Branch is responsible for the receipt, storage and inventory of all material in the supply officer's stores.

- The Warehouse Control Branch is responsible for all functions related to inventory management and accountability, which include storage of all classified material as well as the expediting of repairable bit piece parts for components awaiting repair parts. The Warehouse Control Branch is also responsible for processing receipts with exceptions, processing all repairables returned from the IMA and for the screening/tracking with beyond capable maintenance components.
- The Pre-Expended Bin (PEB) Branch is responsible for establishing, maintaining and replenishing PEB sites authorized by the AvnSupO/maintenance officer and for the assembly and issue of phase kits. The PEB material consists of low cost, frequently used maintenance related items that are pre-expended from ASD stock. They are stored in departmental work centers readily accessible to maintenance personnel.
- The Supply Shipping Branch is responsible for packaging and shipping all aeronautical related components and equipment.

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.

The MALS 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 /aircraft carrier (nuclear), and T-AVB/MPF employment plans and milestone reporting. The MALS Operations Department is also responsible for AVLOG FDP&E as it relates to deliberate planning and CAP.

Deliberate Planning

Deliberate planning is conducted during peacetime and when there is ample time to develop and refine war plans. Planning allows for detailed, comprehensive, coordinated, orderly and methodical command and staff participation in the preparation of a plan. The deliberate planning process culminates with the insertion of refined TPFDD into the Joint Operation Planning and Execution System and submission of revised planning documents (e.g., annexes, appendices). The following actions will guide 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.
- Aircraft carrier (nuclear)/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.
- If each MALS unit line number is identified on the time-phased force and deployment list.
- Site survey for the MALS beddown sites.
- Geoprepostioned support equipment offload distribution and assignment plan.

Crisis Action Planning

Crisis action planning (CAP) performed by AVLOG planners at all levels must recognize that CAP is not governed by rigid steps. 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.
- 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 and serves as a liaison to external agencies regarding information technology issues. The ALIMS Department consists of the following three sections:

- The administration section performs personnel administration and quality assurance, 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 section 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 section provides direct support to all AVLOG MAG units. The section is responsible for network and system administration, including the administrative and operational control of the NTCSS and Naval Air Fleet System array (NFSA)

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 and 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, AIS and their communications systems are becoming seamlessly linked and are necessary for the effective management of all aeronautical assets.

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.

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.

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 an 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:

- 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 the following:

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

Major functions required by the O-level are combined into one system that shares a common database, which 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 eight NALCOMIS OOMA subsystems are:

- The 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, engine 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 close out processing; and generate MAF audit reports.
- Technical Publications—This subsystem is reserved for future use.
- Reports—This subsystem provides the ability to select and produce reports.

The NALCOMIS OOMA utilities are:

- Ad Hoc Query—This utility enables users to create reports to meet 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 work load 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, sub-custody 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 the following 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 non-incorporated 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, logistics, 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 the following:

- Automation to:
  - Assist supply department materiel control and customer support activities.
  - Manage offload or stock transfer.
  - Preparation, control, recording and reporting of receipts.
  - Maintain the status of all requisitions and purchases, including money value only, pushed materiel, and NAVSEASYSCOM funded initial outfitting type requisitions.
  - Verifies acceptability of various data elements prior to admittance of new data into the system.
- 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.

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 the second function.

Financial Management

The financial management subsystem provides support for 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:

- Operating Target (referred to as OPTAR)—This method accounts 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.

- Naval Working Capital Fund (NWCF)—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 first function of the OOMA (organizational at intermediate) system collects data from O-level maintenance and uploads it to the 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. The IBS applies barcode technology and automated data entry techniques to the materiel receipt and expenditure processing, physical inventory management, configuration accounting, equipage accounting, carcass tracking, and materiel shipment processing. This technology improves the 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: AIRSpeed, 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.

AIRSpeed

AIRSpeed 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.

Advanced Skills Management

Advanced Skills Management is a web-based training management tool that supports the identification and completion of job-related tasks, provides real-time assessment, identifies training deficiencies and provides immediate and focused access to training tools to track technical training throughout an individual's military career, and the validation of knowledge and skills. It provides a structure for standardization of training requirements across an organization or platform while simultaneously allowing a component command the flexibility to address unique requirements.

Interactive Electronic Technical Manual

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.

Joint Discrepancy Reporting System

The Joint Discrepancy Reporting System facilitates the electronic submission and complete processing of discrepancy reports, including engineering investigations, hazardous materiel reports, product quality deficiency reports, technical publication discrepancy 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 (LAMS).

Support Equipment Resources Management Information System

The support equipment resources management information system is the primary automated management information system supporting the AMMRL program. The system operates at a single site computer center located at the Naval Information Warfare Systems Command Atlantic, New Orleans, Louisiana. Users access the SERMIS system using a PC with Internet access in their respective workspaces. The SERMIS provides interactive capability to AMMRL Program managers for purposes of obtaining immediate query output, accomplishing select update transactions and requesting hardcopy reports. The SERMIS was designed to assist AMMRL program management in determining and establishing aviation allowance requirements for support equipment (SE) at activities performing O-, I- or D-level maintenance. The AMMRL program encompasses all the processes involved with SE requirements determination, allocation, inventory control, D-level rework and disposal to support aviation weapon systems. The AMMRL program processes provide the means to determine immediate and forecasted requirements for each activity, plus asset visibility of what items are actually in use and where they are being used.

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 NAVSUP Philadelphia, 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 (LAMS) is a software program that provides a standardized method of managing aviation support equipment (SE) asset control at an activity. The LAMS enhances the control of SE items through up-line reporting to SERMIS for the AMMRL program. The LAMS performs the following functions:

- Standardizes inventory control procedures for naval aviation IMRL equipment.
- Allows real time tracking of an activity's IMRL assets (issue, return, etc.).
- Provides interface with SERMIS.

ADDITIONAL AVIATION LOGISTICS INFORMATION MANAGEMENT SYSTEMS

The systems discussed in the following sub-paragraphs 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 uses 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) 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 OPNAV M-8000.16 governs the use of the system's modules, which allows the user to perform the following:

- Develop/track configuration management.
- Track inventory.
- Collect performance data.

- Develop program requirements.
- Develop data products.
- Track engineering analysis.
- Collect maintenance data.
- Report aircraft armament system readiness.
- Report deficiencies.
- Track captive carry flight hours.

Integrated Computerized Deployment System

The integrated computerized deployment system (ICODES) is a fully integrated information system that provides multi-modal load planning capabilities to DOD Agencies and Services. The combined functionality of ship, air, truck, rail, and yard planning services provides commanders, planners, and operators with a single platform capable of producing and evaluating load plans and alternative actions for various sized units, employing various modes of transportation, in support of peacetime or wartime operations. ICODES consumes cargo and passenger information from a variety of DOD manifesting systems and, in return, provides load planning, report generation, and forecasting services to the United States Transportation Command and its component commands, DOD customers, and other authorized users.

CHAPTER 5
PLANNING

This chapter provides a holistic view of the AVLOG planning and supporting establishments, and the basic process and fundamentals under which they operate. It further describes key AVLOG planning considerations that link operational and tactical levels AVLOG, thus ensuring the AVLOG concept of support nests within the MAGTF ACE concept of operations.

PRINCIPLES

Planning for AVLOG is guided by a set of overarching principles, as shown in figure 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—The minimum amount of resources required to bring about or create a specific outcome. It is achieved when support is provided using the fewest resources within acceptable levels of risk.
- Simplicity—Avoiding unnecessary complexity in preparing, planning, and conducting logistic operations.

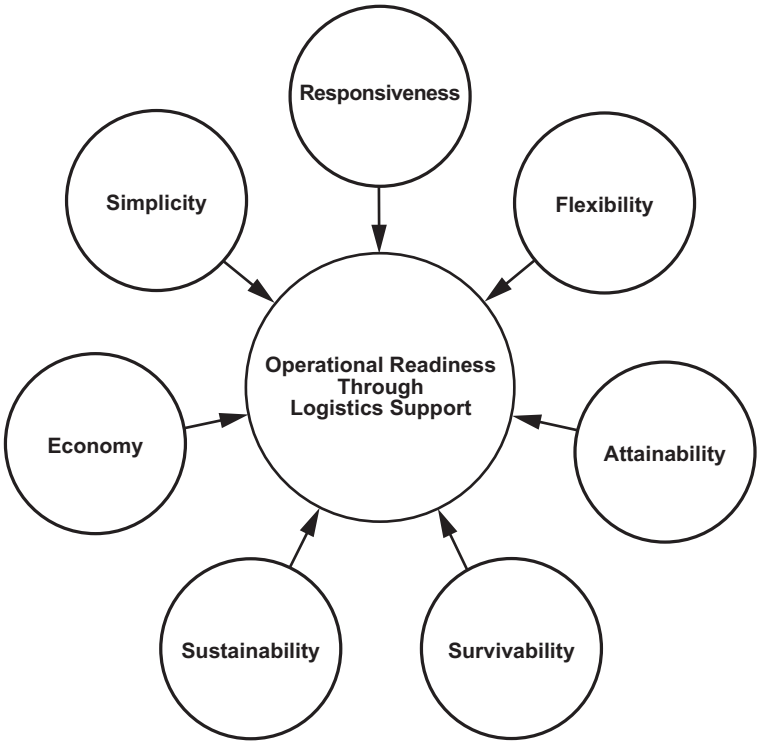

Figure 5-1. Principles of Logistics

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 and must comply with the Federal Acquisition Regulations.

Mission Need Determination

When the DOD Chairman of the Joint Chiefs 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 is 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

There are several key documents, derived by naval aviation planners at the Service and COMNAVAIRSYSCOM that documents the logistic requirements of a particular aircraft platform. They also identify the key logistic programs in support of MALSP MOD, and prepositioning programs. Some of these documents are Life-Cycle Sustainment Plan, the Product Support Package, and an Analysis of Alternatives for support options, to name a few.

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, PEOs, 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 asrecommended monthly combat/peacetime flight hours.
- Authorized weapons configuration.
- 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. 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. The PPDs are used by NAVAIRSYSCOM, NAVSUPWSS, 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, which 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.

Program planning documents reflect significant changes that occur in a program and updated as needed. 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 AVLOGs, 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 NMRP process for the determination of Class V(A) Total Munitions Requirement.
- Providing updated data elements for Marine Corps aircraft and aviation activities to use in the NMRP 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 inter-theater 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; however, may not coincide with the first 30 days of an 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 FW and Tilt Rotor (V-22) 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 includes:

- Squadron personnel, such as maintenance and support crews.
- Representative FSAs contained in an ISU-90.
- O-level support equipment, such as non-custody 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 FW and RW facility equipment contained in mobile facilities. Facility equipment or I-level support equipment supports I-level support functions common to FW/RW 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 ICA-I-level contingency allowance required by each type of 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 FW and RW aircraft. Spread loaded 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 missions 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. A conceptual airfield includes:

- A 4,000-foot runway.
- Parallel taxiway.
- Hot refueling pits.
- Parking for 75 tactical FW/RW aircraft and three intertheater 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/ 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.

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 FW/RW facility equipment, which supports I-level functions common to FW and RW 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 designates support. Upon the establishment of the host MALS in a theater of operations, the MEB ACE will be capable of sustained combat operations.

Support equipment mix resides within MCPP-N and 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, the logistics support of forward deployed MAGTF aircraft may be augmented by activation of one or both T-AVB ships. Typically, T-AVB ships would be activated to support MEB sized and larger MAGTFs. Operational planning for T-AVB deployment must take the embarkation, deployment, execution, and redeployment phases under consideration, as well as the location and type of support required.

The T-AVB ships provide a modular and highly configurable capability set, ranging from the ability to operate a fully functional MALS of select capabilities afloat for extended periods, to a strictly transport mode, which enables the point to point transfer of a much larger footprint of mobile facilities and other AVLOG support assets to an AOR for debarkation. The MAGTF and supported commander's mission requirements will dictate the configuration and intended mode of operation for each ship, which may entail full afloat operational mode, transport mode, or a combination mode, which is a tailorable mix between operational and transport configurations.

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 Philadelphia, PA (see figure 5-2) while T-AVB-4 (SS Curtiss) is home-ported in San Diego, CA (see figure 5-3).

Figure 5-2. SS Wright.

Figure 5-3. SS Curtiss.

The Maritime Administration maintains both T-AVBs in a five-day reduced operating status (ROS 5). This status allows for the transition to full operating status within 120 hours. A civilian commercial merchant marine retention crew is stationed aboard each ship to monitor equipment conditions; and conduct vessel maintenance and repair. When activated, the ships will operate by the Maritime Administration under the operational command of the MSC.

Numerous modifications made to the Seabridge class ships support an embarked operational MALS, which consists 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 is installed throughout the Seabridge that includes all berthing, open cabin spaces, and the main and second decks. Enclosed ship spaces (berthing and cabins) have 100 megabytes per second CAT-5 switched network outlets. Open decks have bulkhead connection points for 100 megabytes per second 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 (troop berthing), and 25 senior Marine Corps personnel (state rooms).

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 Seabridge, 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 Seabridge has a 1500-kilowatt generator that provides stable power.

Diesel Fuel Marine System. The T-AVB possesses a marine diesel fuel system that contains approximately 120 tons of fuel. This system is used to support operation of Seabridge's Emergency Marine Diesel generator and generators embarked by the MALS.

Administrative Work Space. The administrative workspace is for the host MALS administration, operations, and embarkation sections.

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

1MC Intercom System. An intercom system runs throughout the ship, including the holds that normally contain maintenance facilities.

Hazardous Materials Storage. The T-AVB is not configured for hazardous material; however, 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 to dispense compressed air. Sufficient hoses must be embarked by each work center that requires compressed and/or pneumatic air.

Water. Water hookups are available aboard ship for mobile facilities that require water, such as battery lockers.

Ammunition and Arms

Each T-AVB has seven ammunition lockers arranged to support crew served weapons stations. On the main deck, lockers are positioned at fore, aft, and mid-ship locations on both the port and starboard side. An additional locker is located on the roll on/roll off deck. The roll on/roll off deck contains an armory that is used to store crew served weapons. Individual weapons for MALS personnel are secured in weapon mounts located in troop berthing areas.

Mobile Facilities

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. The T-AVB will accommodate doublewide mobile facility configurations in select locations aboard the ship as well. In addition, access modules are used to gain access to mobile facilities stowed in the lower holds, which typically serve as the MALS supply warehouse spaces. Mobile facilities required for occupancy are identified by serial number and special requirements (e.g., air, electricity, water) needed within the facility to sustain operations. 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. Aviation logistic 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 a 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 embarked aboard the T-AVB provide 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 may be loaded on the T-AVB. Of this number, 186 mobile facilities may be fully powered and operational.

In the transport mode, mobile facilities and personnel of the MALS embarked aboard the T-AVB provide maximum land-based expeditionary AVLOG support to the ACE when offloaded ashore. In this mode, approximately 684 containers may 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 embarked aboard the T-AVB 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

Detailed deliberate planning in support of the T-AVB essential in accomplishing the mission. Planning for each OPLAN in which the T-AVB activates, requires separate load plans informed by current RESPs. 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 ICODES, will require that the weights and dimensions of equipment by category, such as mobile facility or bulk, and will 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 embarked aboard the T-AVB can be sequenced to the pier for loading. Civilian cargo handlers provided by the Military Surface Deployment and Distribution Command and MALS personnel to load the ship. 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, FW/RW

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 (FSA and PCSP) for the specific type of aircraft being provided. The ACE transfers the support packages to the appropriate host MALS. The parent MALS operations department controls and coordinates supply and ordnance departments in conjunction with the MALS maintenance. The FISPs are transported to the operational area with deploying aircraft by FIE; although, the host MALS will not normally take custody of FSAs until arrival in the operational area.

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

The FW/RW host MALS will be logistically task-organized to support the composite ACE. The host MALS prepares 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. Reporting ensures logistic support assets are accurately reflected in the master deployment and execution data of HHQ. This information is provided through MAGTF logistics automated information system

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 concepts—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). Requirements enable and sustain aircraft readiness and 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 aspects 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, activities, which concurrently frame with risk and uncertainty. See figure 5-4.

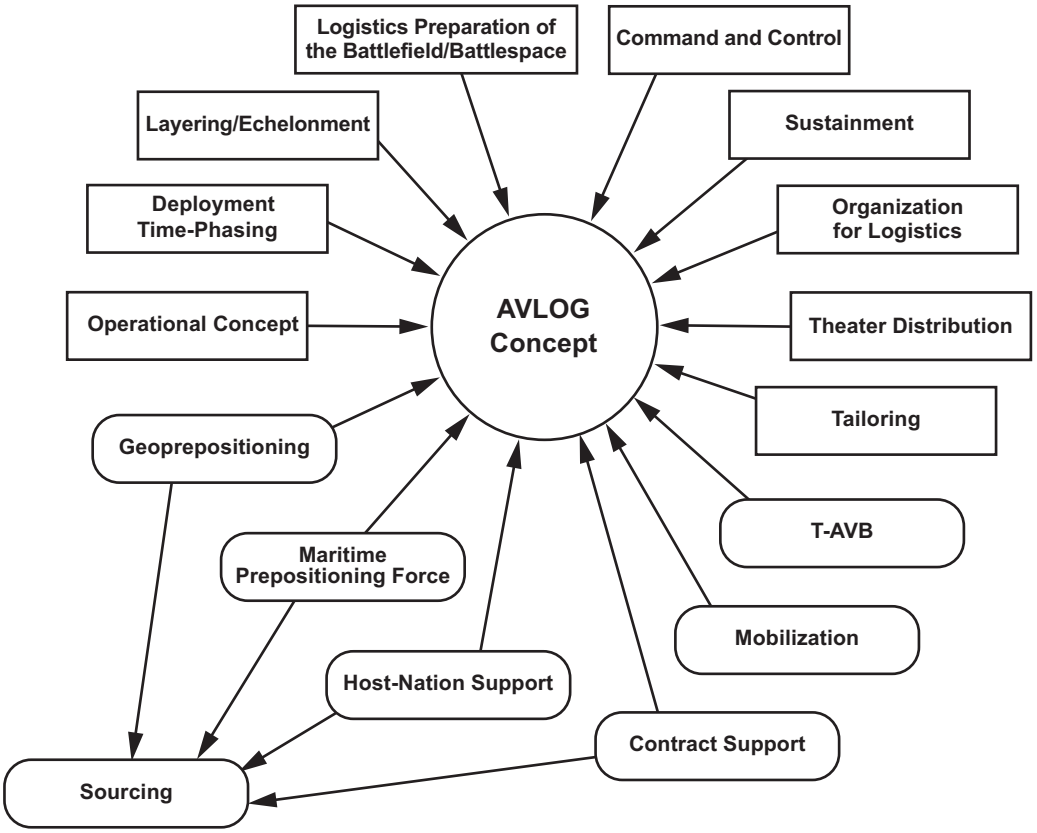

Figure 5-4. Aviation Logistics Considerations.

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 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 will seek to assess the impact to tactical logistics that the operational support scheme will trigger, while the MALS planner needs to 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 logistics 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 begins as early in the planning process as feasible. For example, development may begin when an AVLOG planner participates in the MAGTF- or MEF-level operational planning team as a SME. The AVLOG planner should aim to match all AVLO G 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 situational awareness, and is able to compile realistic data to support deliberate or time-sensitive planning requirements.

Problem Framing

The AVLOG planner must seek to understand the problem, and the environment in which they are operating before any viable COA is presented to the commander. To accomplish this, the planner must first have through understanding of higher headquarters' situation (mission, intent, concept of operations, and supporting concepts). They must then determine tasks and purpose, assumptions, and conduct a centers of gravity analysis of both friendly and enemy forces. At the end of problem framing, the AVLOG planner develops a draft mission statement, and produces an operational approach that feeds COA development.

Course of Action Development

The AVLOG support concept(s) must first focus on the COAs formulated by the operational planning team and operational planners. Logistic planning should parallel operational planning and 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 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; 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. Planning considerations should be viewed as a system. Excessive focus on any one element can cause sub-optimization 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 geographically pre-positioning 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 prepositioned equipment, as shown in figure 5-5.

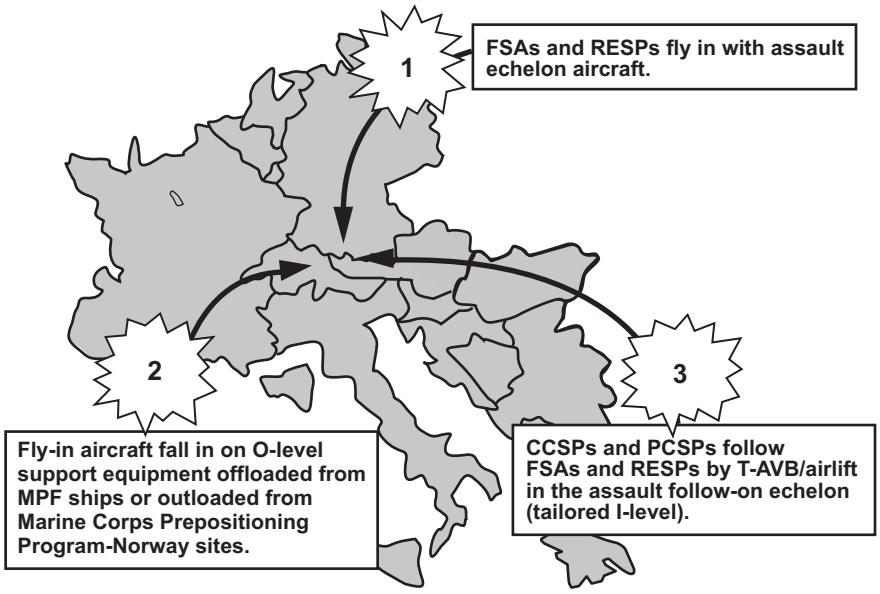

Figure 5-5. Aviation Logistics Deployment Time Phasing.

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 backwards, the AVLOG planner will discover a point at which the deploying MALS will have to completely shut down 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 is 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 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, as shown in figure 5-6.

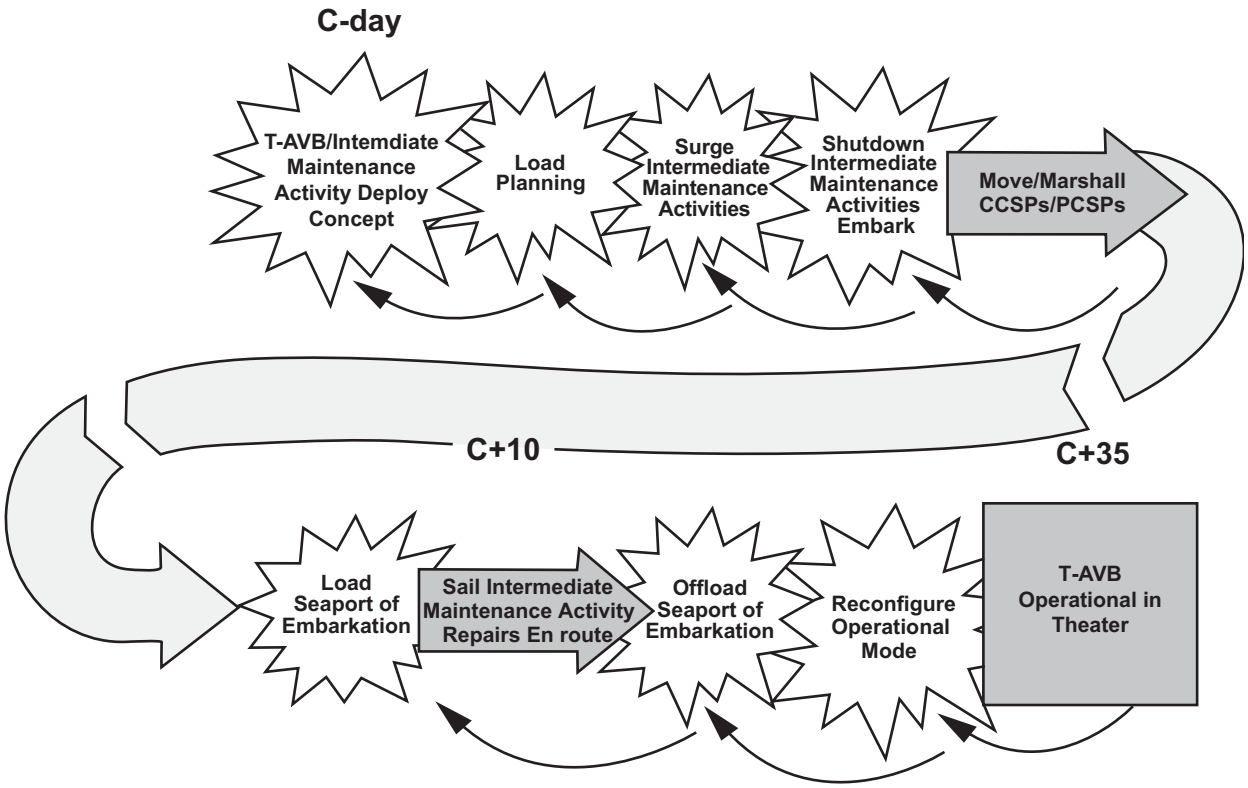

Figure 5-6. Reverse Planning Concept.

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 shut down support activities. Stand-down of the MALS in preparation for embarkation must 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.

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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 (ASP), and movement to the seaport/

aerial port of embarkation. Dismantling of the MALS must be sequenced to ensure continued AVLOG support availability for aircraft squadrons, which is especially critical due to a likely 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. Layering and reachback 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 flight line services aircraft, maintains aircraft operations, and handles and loads munitions. While it is preferred to have the MSAs and ICAs at the same operating base, it may not always be feasible. For example, there may be more than one FW base requiring support from only a single site MSA/ICA deployed host MALS. The next layer of support, the MSAs and ICAs, may operate at a rear and centralized position removed from the outlying operating sites. It may provide a more in-depth degree of MSA/ICA MALS repair capability and enable sustainment to the RESP/FSA.

After the CSPs, the support concept identifies follow-on requirements, such as follow-on SSAs/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, as shown in figure 5-7.

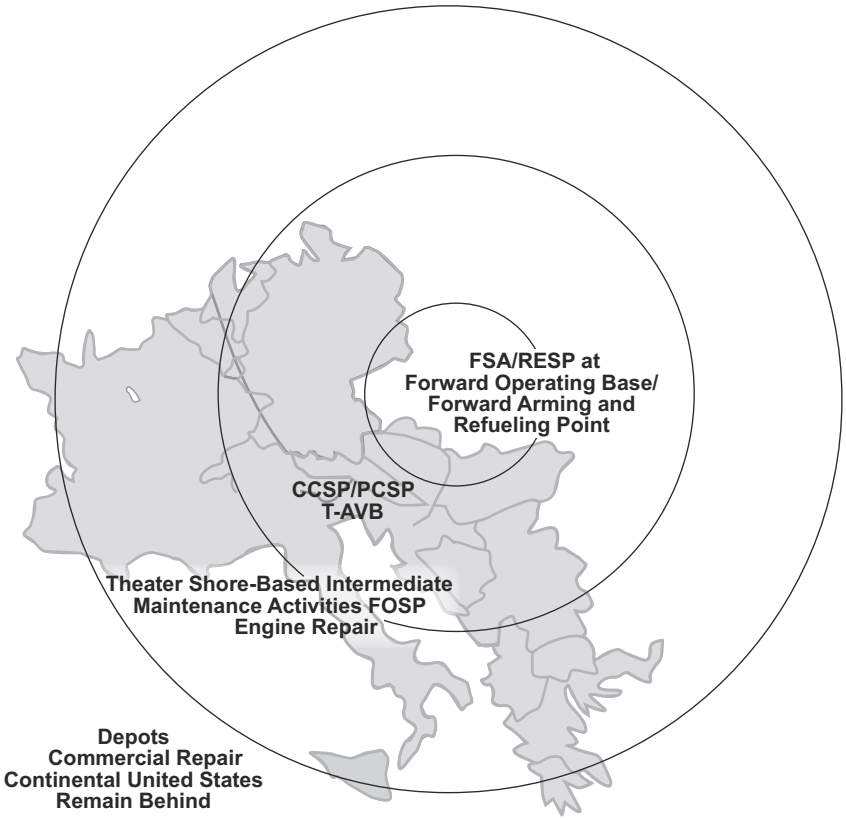

Figure 5-7. Aviation Logistics Layering.

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 is 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. Strategic logistic pipeline considerations channels 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, as shown in figure 5-8.

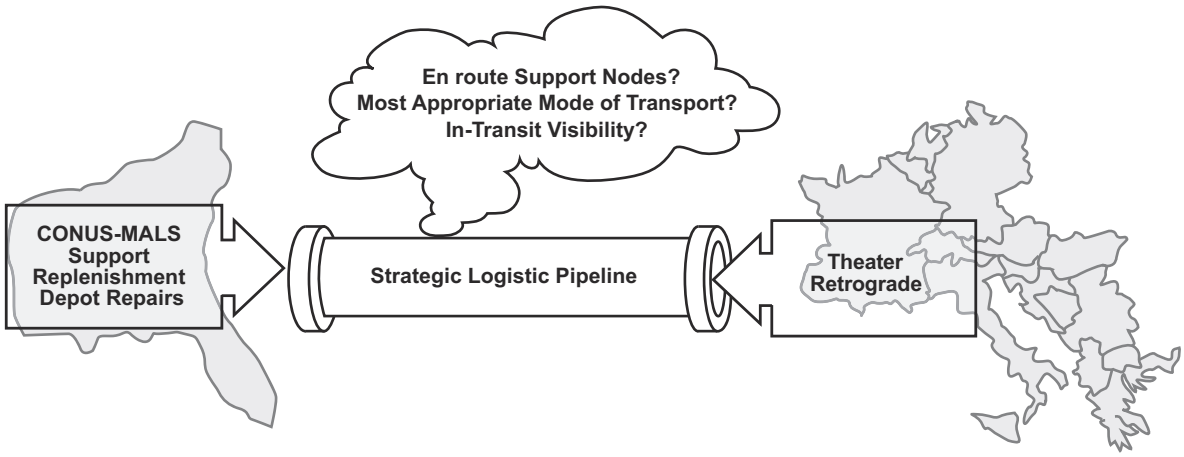

Figure 5-8. Aviation Logistics Strategic Pipeline.

Transportation modes for pipelines are selected based on mission-need capability, transportation priority, regulatory restrictions, and available capacity. Regulatory restrictions include transportation and storage issues (e.g., hazardous materials regulations), security and custody issues (e.g., 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 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 FSA, PCSP/CCSP and SECP/SEPP are rarely tailored, the RESP and SSA 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 SSA when planning MALS requirements beyond the 90-day sustainment mark.

Tailoring decisions are 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 provide the basis 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 the 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 through put 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. 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 includes time-space-distance assessments unique to the theater and to supporting the operational concept. A well-developed physical network analysis makes 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 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 MAGTF's logistics combat 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 quantity, capacity, and capability of fixed structures and established facilities available to support distribution operations. All facilities are considered for use in the logistic system. Facilities identified become designated as installations. Facilities not selected provide future options and flexibility, if required.

Resource elements of the logistic system consist of the following personnel: 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. Modes of transportation consists of 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 SMEs 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 include:

- 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.

It is imperative that the AVLOG planner emphasizes to the supported squadrons that prepositioning is the primary source for support equipment and that these resources are equivalent to assets utilized daily in CONUS. Planning places greater emphasis on the use of host-nation, allied, coalition partner, and other foreign support. Civilian contractors (domestic and foreign) provide direct support previously accomplished by the Military Services. The difficult task of sourcing preferred munitions needed to support the ACE is solved largely from in theater Navy prepositioned WRM stock and afloat ammunition resupply vessels.

Organization for Logistics in Theater. As 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.
- Host 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 takes 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 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 a 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, due to 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 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 may be employed alone or together to facilitate AVLOG support and command and control, which include: NIPRNET (Non-secure Internet Protocol Router Network), streamlined automated logistics transmission system, INMARSAT (International Marine/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). The primary concern must be tempered by the fact that T-AVB is the most effective and economical means for transporting a major portion of deploying MALS peculiar packages for an entire MAW. The T-AVB may be the best/only opportunity to move peculiar packages 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 SSA 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 Component units may become a key component of the AVLOG concept. Reserve Component units 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 a Reserve Component unit is a complex planning process.

Understanding mobilization begins with knowledge of command relations of Reserve Component, 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 holistically. 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 Adaptive Planning and Execution System 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. When a plan is written, it is translated into an OPORD. A formal deployment order is 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 transportation sourcing.

At the tactical level, successful transition depends on the level of detail contained within the OPORD and its accuracy and currency. Deployment checklists, as detailed as individual preparedness checklists and work-center embarkation manifests, 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.

GLOSSARY

Section I. Acronyms

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 material readiness list
AMTCS ..... aviation maintenance training continuum system
ASD ..... aviation supply department
ASL ..... Aviation Logistics Support Branch
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

D-level ..... depot level
DOD ..... Department of Defense

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
FSA ..... fly-in support allowance
FW ..... fixed-wing

G-2 ..... assistant chief of staff, intelligence/intelligence staff section
G-3 ..... assistant chief of staff, operations/operations staff section
G-4 ..... assistant chief of staff, logistics/logistics staff section
G-6 ..... assistant chief of staff, communications system/communications system staff section
GLS ..... global logistics support

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

IBS ..... integrated barcode system
ICA ..... intermediate level contingency allowance
ICODES ..... integrated computerized deployment 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

LAMS ..... Local Asset Management System
LHA ..... amphibious assault ship (general purpose)
LHD ..... amphibious assault ship (multipurpose)
LPT ..... logistics planning tool

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
MCPP-N ..... Marine Corps Prepositioning Program-Norway
MDS ..... maintenance data system
MEB ..... Marine expeditionary brigade
MEF ..... Marine expeditionary force
MEU ..... Marine expeditionary unit
MOS ..... military occupational specialty
MPF ..... Maritime prepositioning force
MPS ..... Maritime prepositioning ship

MPSRON ..... Maritime prepositioning ships squadron
MSA ..... MAG support allowance
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
NCEA ..... Non-Combat Expenditure Allocation
NCO ..... Chief of Naval Operations
NFSA ..... naval air fleet system array
NMRP ..... Naval Munitions Requirements Process
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
OPORD ..... operation order

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

RESP ..... remote expeditionary support package
RSOI ..... reception, staging, onward movement, and integration
RSUPPLY ..... relational supply
RW ..... rotary-wing

S-2 ..... intelligence officer/intelligence office
S-3 ..... operations officer/operations office
S-4 ..... logistics officer/logistics office
SAC ..... special accounting code
SASS ..... supplemental aviation spares support
SECP ..... Support Equipment Common Package
SEPP ..... Support Equipment Peculiar Package
SERMIS ..... support equipment resources management information system
SOP ..... standing operating procedure
SS ..... steam ship

T-AVB .....aviation logistics support ship
T/M/S ..... type/model/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. Definition

depot level—Also referred to a third echelon repair is 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 onsite maintenance services, including technical assistance, when required. Also called **D-level**. (DOD Dictionary of Military and Associated Terms)

intermediate level—Also referred to the second level of repair is 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 repairables 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**. (DOD Dictionary of Military and Associated Terms)

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. (DOD Dictionary of Military and Associated Terms)

organizational level—Also referred to as first echelon repair is the preventive and corrective level of maintenance at which equipment is sustained 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**. (DOD Dictionary of Military and Associated Terms)

REFERENCES AND RELATED PUBLICATIONS

Federal Issuances

United States Code, Title 10, Armed Forces

Navy Publications

Secretary of the Navy Instruction (SECNAVINST)
5510.36_ Department of the Navy (DON) Information Security Program (ISP) Instruction

Chief of Naval Operations Instructions (OPNAVINSTs)
5218.7_ Navy Official Mail Management Instruction
M-8000.16 Naval Ordnance Management Policy (NOMP) Manual

Commander Naval Air Forces Instructions (COMNAVAIRFORINSTs)
4790.2_ The Naval Aviation Maintenance Program (NAMP)

Naval Air Systems Command (NAVAIR) Manual
00-35QH-2NAVAIR Allowance List for Aviation Life Support System and Airborne Operational Equipment for Aircraft Squadrons Navy and Marine Corps

Naval Air Systems Command Instruction (NAVAIRINST)
5230.11 Fleet Aviation Logistics Information Systems Functional Management Manual

Navy Supply Systems Command (NAVSUP) Publications
P-724 Conventional Ordnance Stockpile Management Policies and Procedures
P-485 Operational Forces Supply Procedures

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P-3013-1 Financial Management of Resources Fund Administration (Operating Forces)

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5-10 Marine Corps Planning Process

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3-20B Aviation Ground Support
13-10D Maritime prepositioning Force Operations

Marine Corps Order (MCO)
P4400.177_ Marine Corps Aviation Supply Desk-Top Procedures with Continuous Process Improvement

NATO Standardization Agreement (STANAG)

STANAG 7166 ALP 4.3 Air Forces Logistic Doc