Chapter 3

Command and Control Information Systems for Aviation Logistics

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

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

3003. Naval Tactical Command Support System (NTCSS)

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

- Aviation maintenance management
- Materiel and financial management

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

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

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

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

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

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

3. Flight Subsystem. This subsystem collects and processes flight related data and provides this data to other subsystems on the database.
(4) Logs and Records Subsystem. This subsystem provides the ability to establish and maintain configuration profiles on aircraft, engines, modules, and components assigned to the O-level.

(5) Personnel Subsystem. Reserved for future use.

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

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


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

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

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

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

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

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

3. **Configuration Status Accounting Subsystem (CSAS)**. CSAS contains three sections; Aircraft Engines, SE, and Technical Directives (TD).
   - **Aircraft Engines**. Users establish and maintain a database in NALCOMIS IMA to contain all the information pertaining to on-hand engines and their installed modules and components, as well as on-hand unassembled modules and components.
   - **Support Equipment**. Maintains a database containing all of the information pertaining to assigned SE.
   - **Technical Directives**. Tracks both incorporated and non-incorporated TDs for aircraft engines, engine modules, engine components, SE, and SE components.

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

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

6. **Materiel Requirement Processing Subsystem (MRPS)**. MRPS covers materiel requirements generated by maintenance customers at the O-level and I-level. These requirements include repairable components, consumable repair parts, and indirect materiel support items.
(7) **Local/Up-line Reporting Subsystem (LURS)**. LURS supports Engine Transaction Records (ETR). This subsystem is reserved for future use.

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

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

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

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

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

- Logistics Management
- Inventory Management
- Financial Management

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

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

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

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

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

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

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

2. **Navy Stock Fund (NSF) Special Accounting Class (SAC)-207 Accounting.** The NSF, SAC-207 Accounting Aviation Supply Officer has both inventory and fiscal accountability for materiel in stock. Material in stores is held in the NSF and upon issue is expended to an annual appropriation with reimbursement to the Stock Fund. Material transferred to other supply officers is retained in the NSF and reported to the Fleet Accounting Center as expended through transfer. Fleet Accounting Center reconciles transfer expenditures to units involved monthly. Formal inventory control records are maintained and simplified Stock Fund returns are submitted to Fleet Accounting Center monthly.
d. **Integrated Barcode System (IBS)**. This form of Automated Information Technology (AIT) applies bar code technology and automated data entry techniques to material receipt and expenditure processing, physical inventory management, configuration accounting, equipage accounting, carcass tracking and material shipment processing. This technology improves management and accuracy of inventory control for mission essential items and items that require special controls or chain of custody accountability by regulation or directive. IBS provides automated functionality to conduct inventories, location audits and receipts processing via barcode technology, without the use of printed materiel. Inventories or location audits are conducted based on user determined parameters (location range, stock number or other criteria). Functionality is provided to conduct both scheduled and unscheduled inventories. IBS also provides automated support for the performance of inventory count accuracy and quality control auditing prior to acceptance of the inventory results. Additionally, IBS provides a capability to automate inventory reconciliation research. IBS will determine stock numbers, which are out of balance between stock records and inventory results, query all applicable automated files, and present information found in on-line or printed reports.

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

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

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

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

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

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

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

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

b. Retail Ordnance Logistics Management System (ROLMS). ROLMS is a PC-based inventory management tool designed to provide automated ammunition requisitioning, status accounting and inventory management capability at the
MALS/ammunition supply point (ASP) level. In addition, ROLMS provides the capability to interface with CAIMS via Naval message from expeditionary sites. It is the principle system used to provide visibility of Class V(A) and Class V(W) at the user level, and is a feeder system to CAIMS. ROLMS is currently replacing the Fleet Optical Scanning Ammunition Management System (FOSAMS) for Class V(A).

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

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

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

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

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

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

d. MAGTF Data Library (MDL). MDL is a master data reference source, maintained by CG Albany, which provides standardized reference data to include; tables of organization (T/O), tables of equipment (T/E), dimensional information, etc. Through the use of MAGTF II the data hosted within MDL is utilized to operate the programs. MAGTF Data Library provides a source of quality technical reference data for the LOG AIS family of systems. MDL sources data for over 134 tables from various military information systems. Current resources include the Joint Chiefs of Staff, U.S. Transportation Command, the Defense Mapping Agency, and other service agencies.
3012. **T-AVB Automated Load Planning System (TALPS).** TALPS takes the place of Computer Aided Embarkation Management System (CAEMS) as the primary AIS for the embarkation of MFs aboard the T-AVBs. TALPS uses state of the art artificial intelligence to accomplish the load planning process, from initial planning to final printing of the load plan. The system considers a myriad of T-AVB peculiarities to ensure operational capability of selected MFs while underway.

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

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

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

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