Chapter II

MULTISERVICE OPERATIONAL PROCEDURES

1. Background

Achieving effective communications among all users of SINCGARS-compatible radios on the modern battlefield requires detailed planning and coordination at multiple echelons within a JTF. This chapter identifies joint force, service, and key personnel and describes their respective functions and responsibilities with respect to SINCGARS operation.

Section A: Responsibilities

2. Joint Chiefs of Staff (JCS)

The JCS provide overall guidance on joint US military frequency engineering and management. The JCS have delegated certain authority to carry out this responsibility to the chairman of the Military Communications-electronics Board (MCEB).

3. Joint Force Commander (JFC)

The JFC is responsible for all facets of communications in the area of operations. The JFC delegates the authority for communications coordination to the communications or signal special staff office. Multiservice coordination maintains interoperability, establishes total force requirements, and reconciles the unique needs of each service.

4. J-6

a. The JFC's J-6 is a functionally organized staff that controls and coordinates joint signal services for all elements in the joint operation or exercise. This staff may be organized at lower levels, as required. Normally the J-6 is responsible for the following when a joint force is using SINCGARS-compatible radios:

(1) Designating and distributing joint net FH data variables.

(2) Publishing standing operating procedures (SOPs) for communications.

(3) Providing frequency management.

(4) Coordinating with host government for frequencies.

(5) Controlling COMSEC assignment and use.

(6) Establishing and assigning net ID numbers for joint nets.

b. The J-6 should publish procedures for the actions listed below in either the operation plans (OPLANs) and operation orders (OPORDs) or in a SOP:

(1) Operating in SC and FH modes.

(2) Using hopsets.

(3) Assigning and using TSK.

(4) Determining applicable dates for net configurations.

(5) Assigning of ID numbers for joint nets.

(6) Establishing common network time.

(7) Developing key management plans.

(8) Developing emergency destruction plans.

c. In joint operations, all services will use SINCGARS-compatible radio equipment in the same tactical operating areas. Frequency management must occur at the highest multiservice command level. For effective operations, a communications coordination committee should be composed

of assigned J-6 personnel and necessary augmentation personnel. The communications coordination committee should include—

(1) The COMSEC custodian and/or CEOI manager from the appropriate staff section.

(2) The special plans officer from the plans section.

(3) The host-country frequency coordinator.

(4) Frequency managers from the joint and service frequency management office.

(5) The aviation officer from the Operations Directorate of a joint staff (J-3) office.

d. The communications coordination committee should be identified and available before execution of the operations plan. They must be knowledgeable on service-unique communications requirements and the operation and management of SINCGARS computer-based data management systems (RBECS, AFKDMS, etc.) and fill devices.

e. The communications coordination committee coordinates with the Intelligence Directorate of a joint staff (J-2) and the J-3 section for planning electronic warfare (EW). The J-3 establishes the joint commander's electronic warfare staff (JCEWS) for planning EW operations. JCEWS normally consists of the J-2, J-3, electronic warfare officer (EWO), J-6, and representatives from component services.

f. The JCEWS coordinates all EW emissions in the joint arena. After coordination, the J-6 publishes a joint restricted frequency list (JRFL). It specifies the frequency allocations for communication and jamming missions restricted from use by anyone except those performing the jamming mission. The JFC has final approval of the JRFL; the JRFL requires continual updates to maximize effectiveness of EW assets and communications systems.

g. Working with host-nation authorities, the communications coordination committee also builds the frequency list for the mission sets. To do so, the committee should use RBECS software to produce a SINCGARS data set complete with COMSEC key and FH data (hopset/lockout, TSK, and net IDs). RBECS software is recommended because it can generate CEOI and SINCGARS fill data and most of the radios will be Army versions. The KDMS will also read the RBECS diskette.

Section B. Planning

5. General

a. Frequency Management. Joint force operations require frequency management at theater levels for interoperability. Combined operations may apply if allies use SINCGARS-compatible radios. Inside the borders, airspace, or territorial waters of foreign countries, US forces have no independent authority to use radio frequencies during peacetime. They are subject to existing international agreements. The US State Department and theater CINCs coordinate these agreements with allied governments. (See Figure II-l.)

b. Frequency Allocations. Frequency allocations are area dependent and net planning must address and implement timely updates to minimize disruptions in the operation when units change their area of operation. This may be accomplished by distribution of new hopsets via ANCD and ERF procedures.

c. Reporting. Components must report their organizational and special communications needs so the J-6 can address all contingencies. The J-6 produces and transfers the CEOI electronically by paper or by data-fill devices to the users.

d. After the J-6 meets multiservice requirements, each service component representative develops a frequency listing for lower echelon distribution. The service components provide these nets and other information (frequencies, call signs, CEOI,

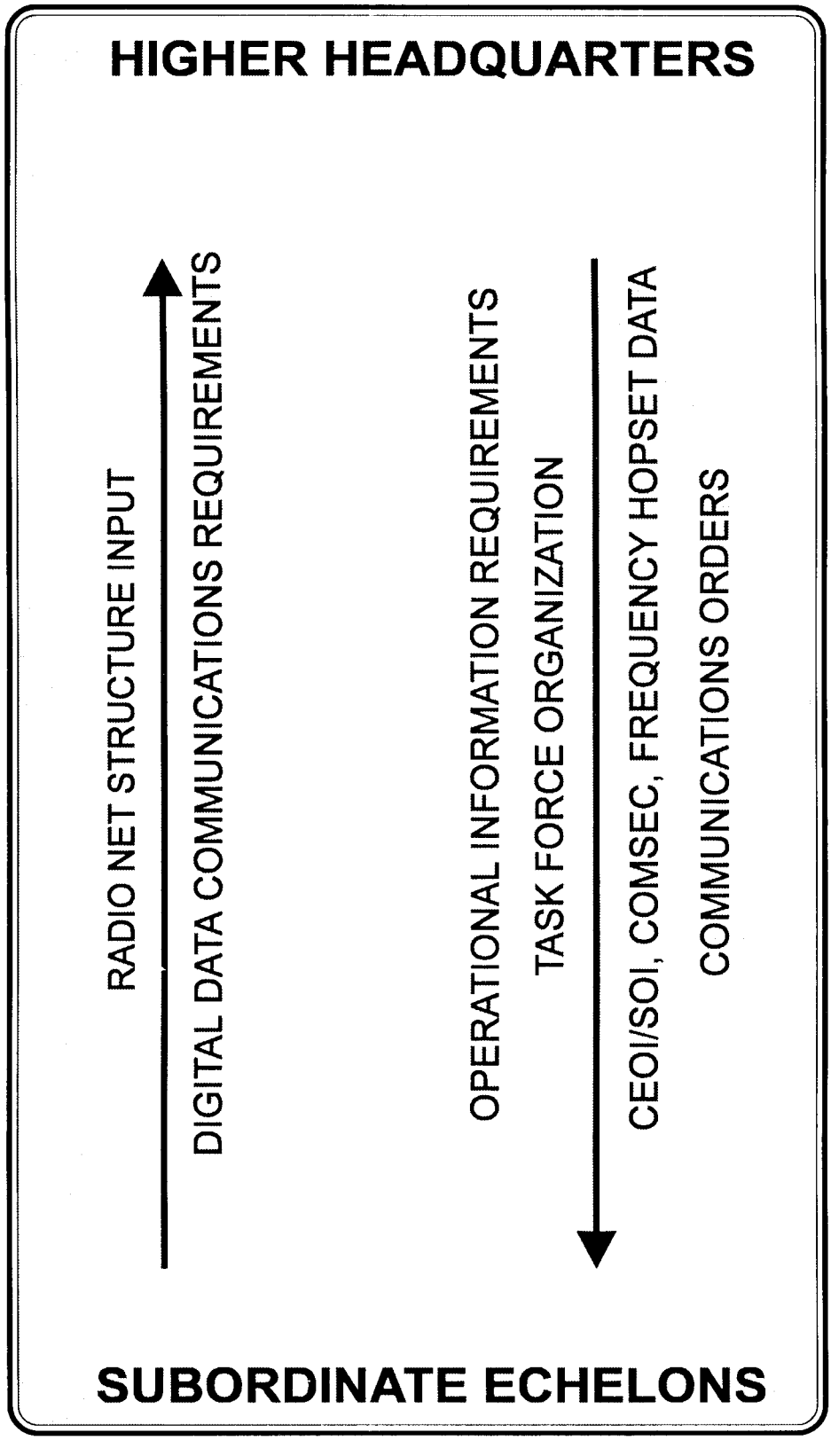

Figure II-1. Two-Way Planning Process

FH data, and COMSEC information) to the J-6 for management and distribution to the joint or service users.

e. The JFC J-6 coordinates with air and ground operations planners at the air operations center (AOC), battlefield coordination element (BCE), or service equivalent to allocate sufficient SINCGARS nets for essential air and ground communications. In addition, dedicated air-ground SINCGARS communication nets are identified for CAS, CSAR, airlift, and other missions that are critically dependent on effective interservice communications. Once identified, the appropriate staff publishes these essential nets in the air tasking order (ATO) and makes them available to aircrews and controlling agencies. For FH operations, assignment of an undistributed TSK makes a net *dedicated.*

f. To support SINCGARS compatibility and interoperability between all tasked mission aircraft and ground elements, air and ground planners must, prior to operations, coordinate with J-6 and component subordinate levels to ensure all combat and combat support elements have the following as an appropriate tasking order listing:

(1) Cue and manual frequencies, net IDs for all SINCGARS-compatible radio nets needed for command and control.

(2) Authentication procedures for accessing all essential SINCGARS-compatible radio nets.

g. In addition to normal staff communications planning, it is important to generate and store in a secure manner sufficient COMSEC keys, FH data, and CEOI information to ensure that these items are readily available to meet contingency requirements. To the extent feasible, such generation should be performed prior to the start of an operation.

6. Equipment

a. Deconfliction. Planning must include provisions to prevent interference between collocated radios operating in the same frequency band. The potential for interference exists in both SC and FH modes. The J-6 planners must consider and assess the cosite interference by other FH systems such as MSE. When planning the CEOI, the J-6 staff must consider the types of radios available in subordinate or allied units, cryptographic equipment, key lists, and frequency allocations available from the host nation for the particular area of operations. Additionally, plans and decisions must comply with applicable International Standardization Agreements (ISAs).

b. Interoperability. Equipment interoperability is a major issue in network planning for VHF systems. The planning must cover FH, if applicable, and SC modes of operations. While many US forces use SINCGARS-compatible radios, the radios of allied nations may not be interoperable with SINCGARS. Therefore, plans should address interfaces between SC and FH radios or lateral placement of interoperable radios in allied command posts. In retransmission mode, SINCGARS radios will automatically provide communications linkage between FH and SC radios or nets.

c. Cryptographic Management. The J-6 should manage the use of cryptographic materials (key lists and devices) to ensure security and interoperability at all levels. US forces may need to augment allied forces with US equipment and personnel for interoperability as appropriate. Prior coordination is essential for mission accomplishment.

7. SINCGARS Loadset Data

a. FH Data. The J-6 is responsible for managing and generating multiservice FH data. Normally, that authority is delegated to service components and subordinate commands. Responsive and flexible FH communications require decentralized control with FH and COMSEC data generated at the lowest possible levels (Figure II-2). However, for CAS, the Army generates and passes data to the Air Force.

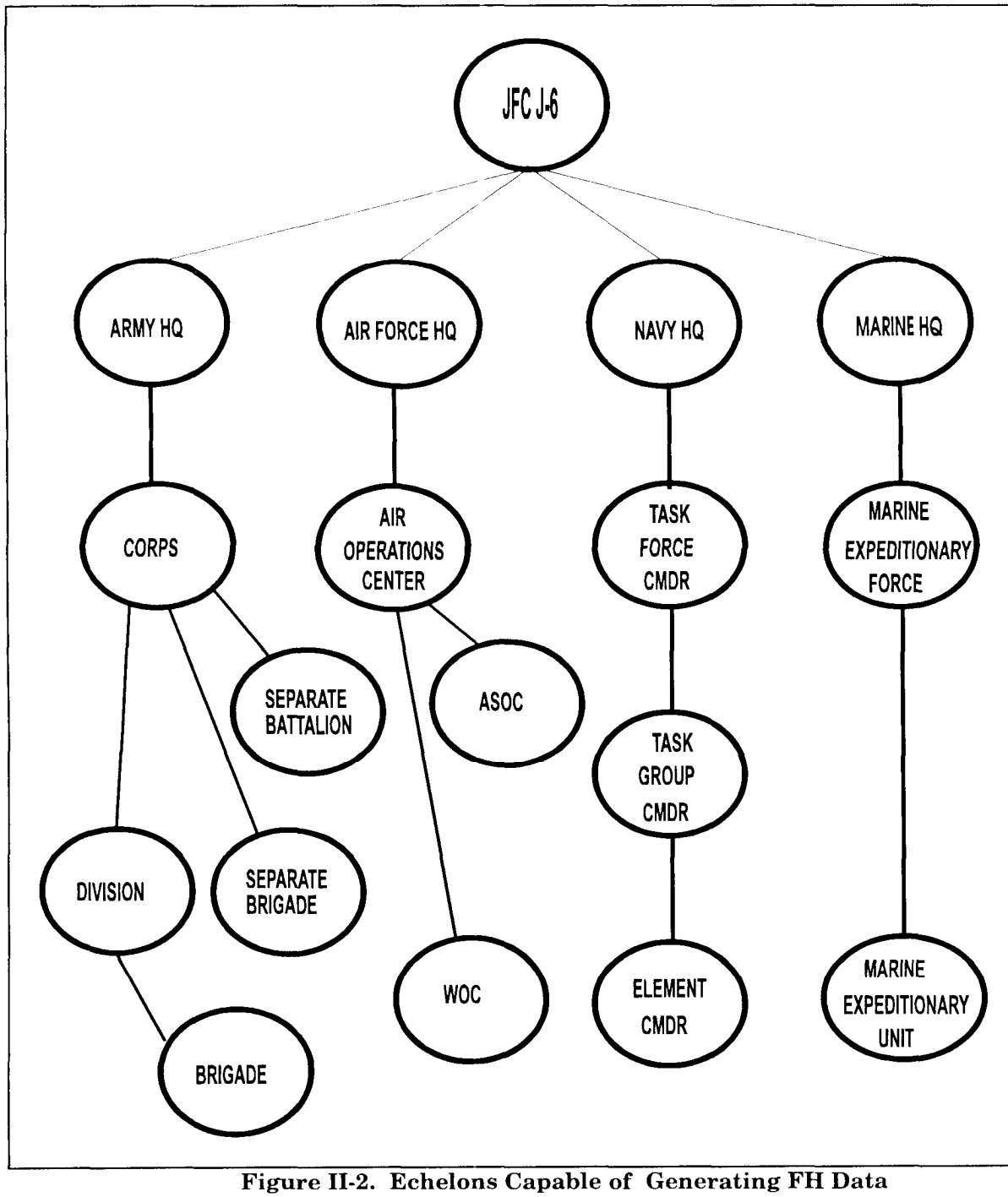

Figure II-2. Echelons Capable of Generating FH Data

(1) Hopsets and Lockouts. Service components will generally assign unique hopsets at the corps or service equivalent level but seldom below the division level. To maximize the effectiveness of CNR FH, hopsets should utilize the largest possible number of frequencies in the SINCGARS frequency range. This FH range and the user frequency requirements determine the generation and assignment of hopsets. Once the frequency manager generates a hopset, the frequency manager then manages SINCGARS radio nets by assigning TSKs and net IDs. If a force changes task

organization or moves across an area in which a hopset is being used, the required hopset should be passed to the moving unit via the most expedient means available (e.g., ANCD).

(a) The larger the number of frequencies and wider the distribution across the SINCGARS frequency range, the better SINCGARS will perform when FH. The minimum size for an effective hopset is situation-dependent. Hopset performance is a function of many factors to include interference from friendly emitters, other electromagnetic interference, and the enemy's EA capability. Typically hopsets of 1200 or more frequencies, spread across the frequency range, will adequately support both voice and data FH CNR operations in a heavy division. As hopset size decreases, FH performance rapidly degrades. FH data performance is particularly sensitive to hopset size. In addition, as hopset size decreases, frequency spread becomes critical for providing effective FH data. Aggressively scrutinizing frequency restrictions and using the largest possible number of frequencies per hopset ensures the best possible CNR FH performance.

(b) To obtain sufficient numbers of frequencies, J-6 frequency managers will scrutinize and limit the number of restricted frequencies in the SINCGARS frequency range. With an optimum hopset, the limited range of CNR communications, and the SINCGARS FH SPEED, most single-channel users can effectively share frequencies with SINCGARS with no discernible effect. The widest possible application of common hopsets provides ease of operation and frequency management.

(c) Search and rescue (SAR), CSAR, CAS, joint air attack team (JAAT), joint suppression of enemy air defenses (J-SEAD) missions, and mobile FH nets require special consideration in planning by J-6s. Detailed prior planning is essential to ensure the units have correct FH and COMSEC data needed to communicate with local forces. In addition, mobile forces conducting operations over large geographic areas require one or more hopsets that incorporate all of the frequency restrictions imposed across the entire area of operations.

(d) The SINCGARS radio is capable of storing an unique hopset, as well as all other FH and COMSEC data, in each channel preset. In developing hopsets for SINCGARS equipped units operating near urban areas or in foreign countries, particularly in peacetime, frequency managers may encounter numerous frequency restrictions in the SINCGARS frequency range. To obtain an acceptably large enough hopset may require the use of discrete frequencies, or groups of frequencies, found between various restricted frequencies across the frequency range. To define such a hopset requires lengthy electronic instructions for the radio. The RBECS operator minimizes the number of the instructions required for radio operation.

(2) TSK and Net ID. When more than one unit shares a common hopset (e.g., corps, theater, or task force), the J-6 will assign TSKs and allocate net IDs. When the number of FH nets exceeds the number of available net IDs (normally all 1000 per TSK), the J-6 will assign additional TSKs. Any echelon generating unique TSKs will usually assign net ID. Net IDs have no effective period and need not change unless otherwise required. Operational TSKs have an effective period of 30 days. (See Table II-1.)

(3) Sync Time. SINCGARS radios operate on precise ZULU time (2-digit Julian date and hours: minutes: seconds [+/- 4 seconds]). Sync time is a variable only in the sense that time passes and Julian dates change. Using ZULU time provides the commander ease of FH net opening, late net entry, and commander's monitoring. Use of ZULU time in conjunction with a common hopset, TSK, and TEK enables operators to readily enter different nets by simply changing the net ID using the radio's front panel keypad.

(a) Use of GPS. Maintaining accurate time is best accomplished using GPS. All NCSs will update time in

Table II-1. COMSEC/FH Data Distribution within a Corps/Theater

(CORPS) HOPSET I TEK 1 TSK A		
(1st Division)	**(2d Division)**	**(3d Division)**
Hopset I TEK 2 TSK B	Hopset I TEK 3 TSK C	Hopset I TEK 4 TSK D

SINCGARS-compatible radios using GPS time from PLGR or other time sources.

(b) Time Hacks. As required, J-6 will establish a daily theater time hack for SINCGARS NCS system net station time (NST). The hour that J-6 chooses to pass this time hack each day will depend on the needs of all users of SINCGARS-compatible radios. The J-6 must coordinate this time hack with all theater services and echelons of command. An NCS can distribute this time hack using dual SINCGARS-compatible radios if the J-6 approves. The J-6 will establish the procedures for passing time hacks via this SINCGARS *"net NST"* method.

(c) Active Nets. Most tactical procedures require radio checks from the NCS to net members at a minimum of every 24 hours, which is sufficient to maintain accurate radio and net time.

(d) Manual Setting. Radio operators may manually enter time into most SINCGARS-compatible radios using the key pad and the *TIME* key. Operators update sync time by contact with their NCS (FH-M function), receipt of an ERF, reloading time using an ANCD or PLGR, or manually changing the sync time in the radio by use of the keypad.

(4) Julian Date. SINCGARS radios require a 2-digit Julian date. For example, 1 July in a nonleap year, day 182, is Julian date 82 for SINCGARS. Operators must base all times and dates on ZULU time. When a normal form of date (e.g., day, month, year) is entered into an ANCD or PLGR, the data is automatically converted to a 2-digit Julian date suitable for SINCGARS use. The only time the Julian date must be changed is 1 January each year.

b. COMSEC Data. All combat net radios, whether SC or FH capable, will operate in the CT mode whenever possible. SINCGARS radios have either integrated COMSEC or can use an external COMSEC device (non-ICOM). The JFC normally designates the CONAUTH for all cryptonet operations, and the J-6 will provide overall staff supervision. COMSEC data include TEK and KEK.

(1) TEK. The normal effective period for the TEK is 30 days; however, the CONAUTH may extend the period under emergency conditions.

(2) KEK. KEKs have an effective period of 90 days. Unit SOPs will describe routine loading of KEKs in all radios or the storing of the KEK in a fill device until needed. An advantage of storing the KEK, rather than keeping it loaded in the radio, is six rather than five channels are available for operational use.

c. Keying Material Compromise. When substantial evidence exists of a compromise of COMSEC keying material for SINCGARS radios, the CONAUTH will take immediate action. There is a range of options including immediate implementation of new keys and, if necessary, continued use of compromised key(s) until an uncompromised key can be implemented. In addition to the supersession of COMSEC key(s), the CONAUTH will normally supersede compromised TSK(s). CONAUTH will consider the tactical situation, the time needed to distribute

reserve data, and the time required to re-establish communications after supersession.

Section C. SINCGARS Data Distribution

8. General

The J-6 will manage the overall distribution of FH and COMSEC data throughout the area of operations. FH data will be distributed using RBECS loadset format files. COMSEC data will be distributed via service component COMSEC SOPs. FH and COMSEC data are merged in the ANCD and distributed to operators as a loadset. A loadset is a total package of all FH and COMSEC data. The operator needs to place all six channels of an FH radio into operation. Staffs at each echelon must distribute data appropriately packaged for their users, whether routine or under emergency conditions, to ensure critical combat communications are not disrupted. Staffs can distribute the data electronically, physically, or use a combination of both.

9. Physical Distribution

Physical distribution is the most secure means for disseminating FH and COMSEC data. It is the primary distribution method for ground units at lower echelons. Units equipped with the ANCD can readily distribute loadsets in a single transaction from ANCD to ANCD and subsequently load their radios in one transaction. Units not equipped with the ANCD require a combination of devices in several transactions to distribute the loadset (Table II-2). Besides the ANCD, other distribution and fill devices include—

a. MX-18290, FH fill devices (FH data only).

b. KYK-13, common fill device (COMSEC data only).

c. MX-10579 (non-ICOM only).

d. Any GPS receiver (including AN/PSN-11 PLGR [precise ZULU time only)].

10. Electronic Distribution

There are a number of techniques available to electronically disseminate COMSEC and FH data to widely-dispersed forces. Distribute COMSEC data only by using NSA-approved methods, including the KG-84A/C, OTAR, and STU-III telephone. Electronic distribution methods for FH data include ERF and electronic file transfer. Communications paths for electronic file transfer include telephone modem, local network area (LAN) or wide area network (WAN), satellite communications (SATCOM), etc. When using OTAR, there is an inherent risk of losing communications with stations that are not active on the net at the time, or for whatever reason they fail to receive the OTAR.

11. Distribution within the JTF

a. Responsibilities. In joint force operations, the J-6 has responsibility for generating or importing the joint CEOI/SOI, COMSEC keys, and FH data. The J-6 distributes this data directly to the component communications staffs (Figure II-3). If appropriate, the J-6 can delegate the

Table II-2. Summary of Transfer Methods

FH DATA						COMSEC		SOI
TYPE OF FILL DATA	NET ID	SYNC TIME	LOCK OUT	HOP SET	TSK	TEK	KEK	SOI
Physical	Yes	Yes*	Yes	Yes	Yes	Yes	Yes	Yes
Broadcast**	Yes	Yes	Yes	Yes	Yes			
ERF	Yes	Yes	Yes	Yes	Yes			Yes
OTAR**						Yes		

* RT-1523A and RT-1523B only.
**AN/ARC-222 does not have these capabilities.

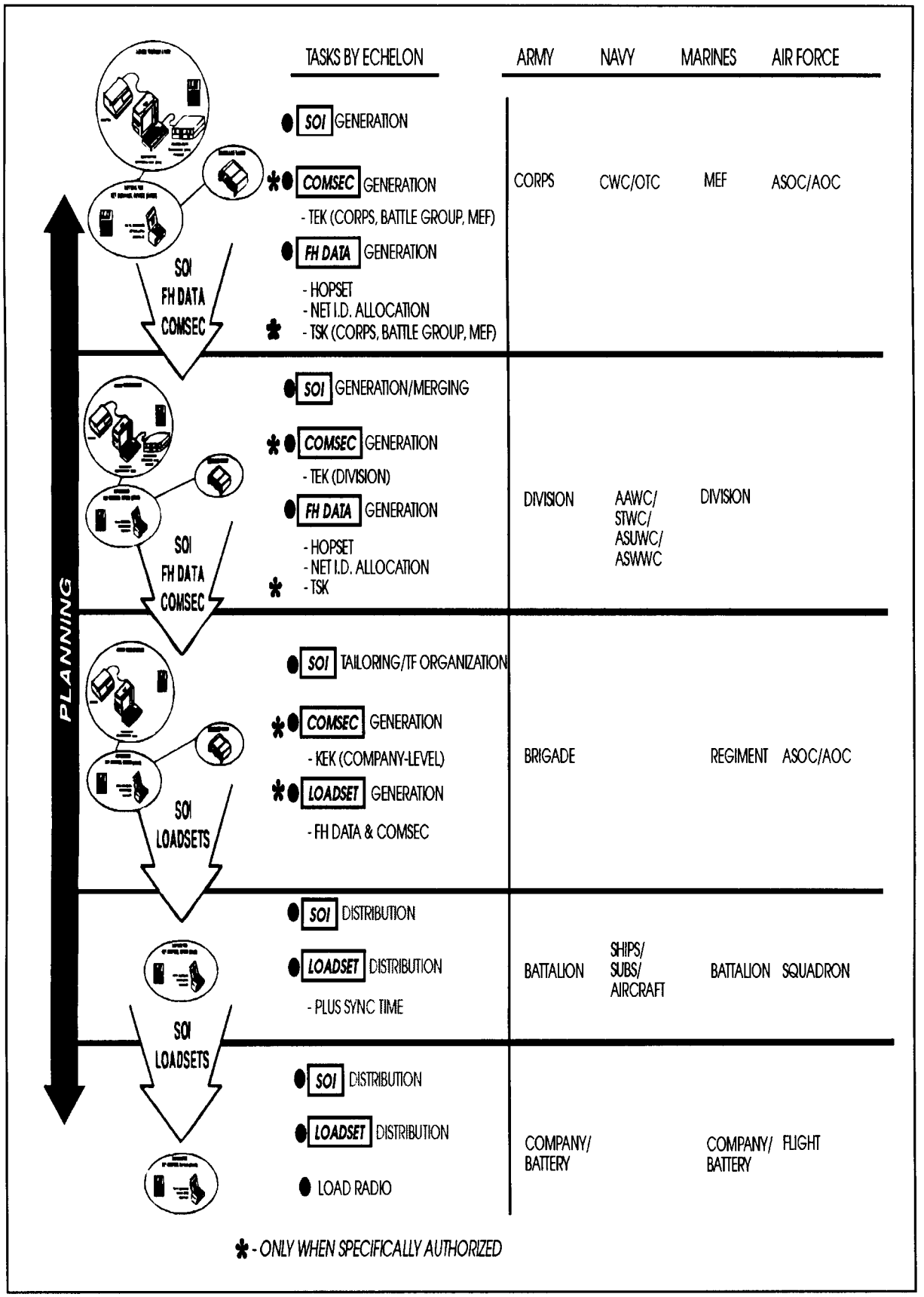

Figure II-3. Tasks By Echelons In Joint Operations

generation and distribution of FH and COMSEC data to the service components.

b. Liaison. The J-6 staff is responsible for providing the joint frequencies, SINCGARS FH data, and other CEOI to the service liaison personnel. Liaison personnel include ground liaison officers at air units, air liaison officers to ground units, BCE, air/naval gunfire liaison company (ANGLICO) teams, etc. These individuals and agencies are important links to the service or headquarters they support. Upon receiving the FH and COMSEC data from their service or functional component, liaison personnel can then distribute the data to the unit they support.

c. Intratheater COMSEC Package (ICP). ICPs are prepackaged COMSEC material, normally held by the warfighting CINCs, that are used to support JTF operations. They are theater-specific for a wide range of standing OPLANs and contingency plans. Preplanned SINCGARS FH data should be generated and included with the COMSEC material in the ICPs to result in complete, prepackaged, FH nets.

12. Distribution within Services/ Components

a. Army Forces (ARFOR). The Army component CONAUTH receives and disseminates the FH and COMSEC data to subordinate echelons. Depending on the situation, the CONAUTH maybe at the field Army, corps, or division level. Most often, the CONAUTH will be at the corps level. (See Figure II-4 and Figure II-5.)

(1) Corps. The corps communications staff may generate and disseminate the data or may delegate those responsibilities to subordinate divisions. Specifically, the corps communications staff can generate-

(a) SOI data.

(b) COMSEC data; the corps' TEK.

(c) FH data; corps-wide hopset, net ID, corps' TSK.

(2) Division. The division will either use the data the corps generates or if authorized generate its own FH and COMSEC data. The division has the equipment and capability to—

(a) Generate and merge SOI data.

(b) Generate COMSEC data (division TEKs).

(c) Generate FH data (net IDs and division TSKs).

Generation of SOI, TEKs, TSKs, and net ID assignments normally does not occur below division/separate brigade level. Exceptionally, when authorized to do so, brigade and separate battalion LCU operators may generate TEKs to meet emergency requirements. When TEKs are generated at a lower echelon, they are forwarded through higher headquarters to the joint force land component commander (JFLCC) CONAUTH for consolidation.

(3) Brigade. The brigade receives SOI, FH, and COMSEC data from the division. The brigade is primarily responsible for SOI data and preparation of loadsets. Specifically, the brigade tailors the SOI for TACFIRE organization, generates company-level KEKs, and develops loadsets.

(4) Battalion. The battalion and its subordinate units are recipients and users of generated data. Their responsibilities are limited to distributing SOI data, distributing loadsets, to include ZULU time, and loading radios with data.

(5) Most echelons can distribute FH and COMSEC data using physical or electronic means. Time, distance, security, and urgency dictate the most appropriate means of distributing data.

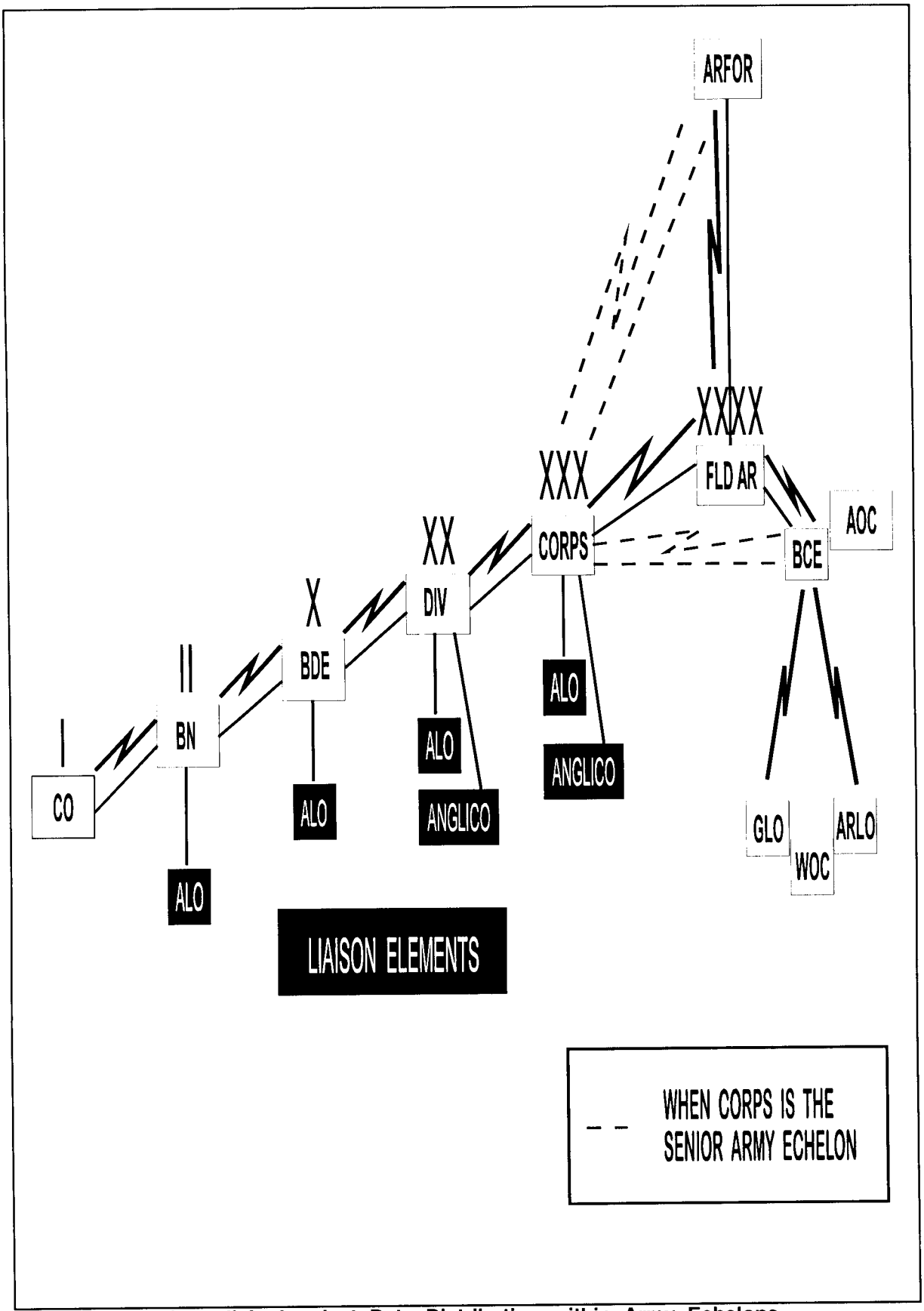

Figure II-4. Loadset Data Distribution within Army Echelons

(6) Army Contingency Planning. When Army component staffs are energized to a possible contingency, planning and operations preparation will start simultaneously. Once the task organization is identified, commanders will fine tune and determine the specific elements needed. Concurrently, J-6 frequency managers coordinate with higher level frequency managers to obtain usable frequencies. Mission specific TSKs will be generated and disseminated through RBECS managers to the supporting forces. A separate message will indicate specific TSK usage. During this time, COMSEC custodians coordinate COMSEC key needs and produce a *"COMSEC callout message"* identifying specific keys for joint, ARFOR, corps, or division use. As specific net requirements are identified by the ARFOR subordinate units, a master net list is compiled. Upon receipt of approved frequencies from J-6, the ARFOR component signal staff officer (G-6) will generate SOIs for use by Army forces. In support of joint operations, Army RBECS managers pass a list of specific units and nets to the J-6. Once the J-6 provides FH data to the G-6, the G-6 will disseminate to subordinate commands and each level will prepare loadsets. Files can be transferred back to the next higher level at this point for archives. Finalization will be effected upon receipt of the COMSEC callout message and receipt of specific TSK use message. Prepared SOIs maybe passed to subordinate units by secure electronic or physical means.

b. Air Force Forces (AFFOR) (see Figure II-6).

(1) AOC. The AOC is the operations control agency for the AFFOR. As such, the AOC will provide overall management of SINCGARS net data for the Air Force components using AFKDMS. In this capacity, the AOC—

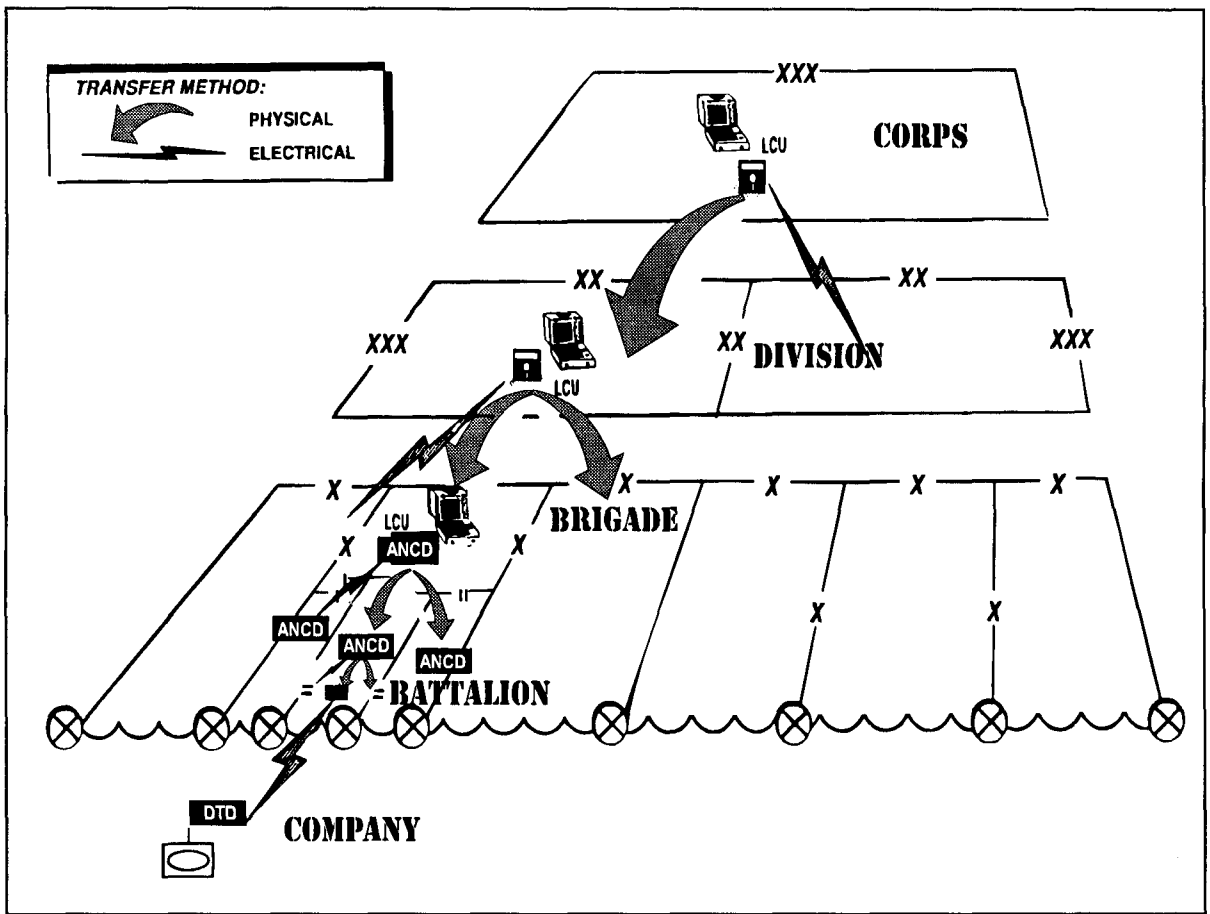

Figure II-5. Army CONOPS

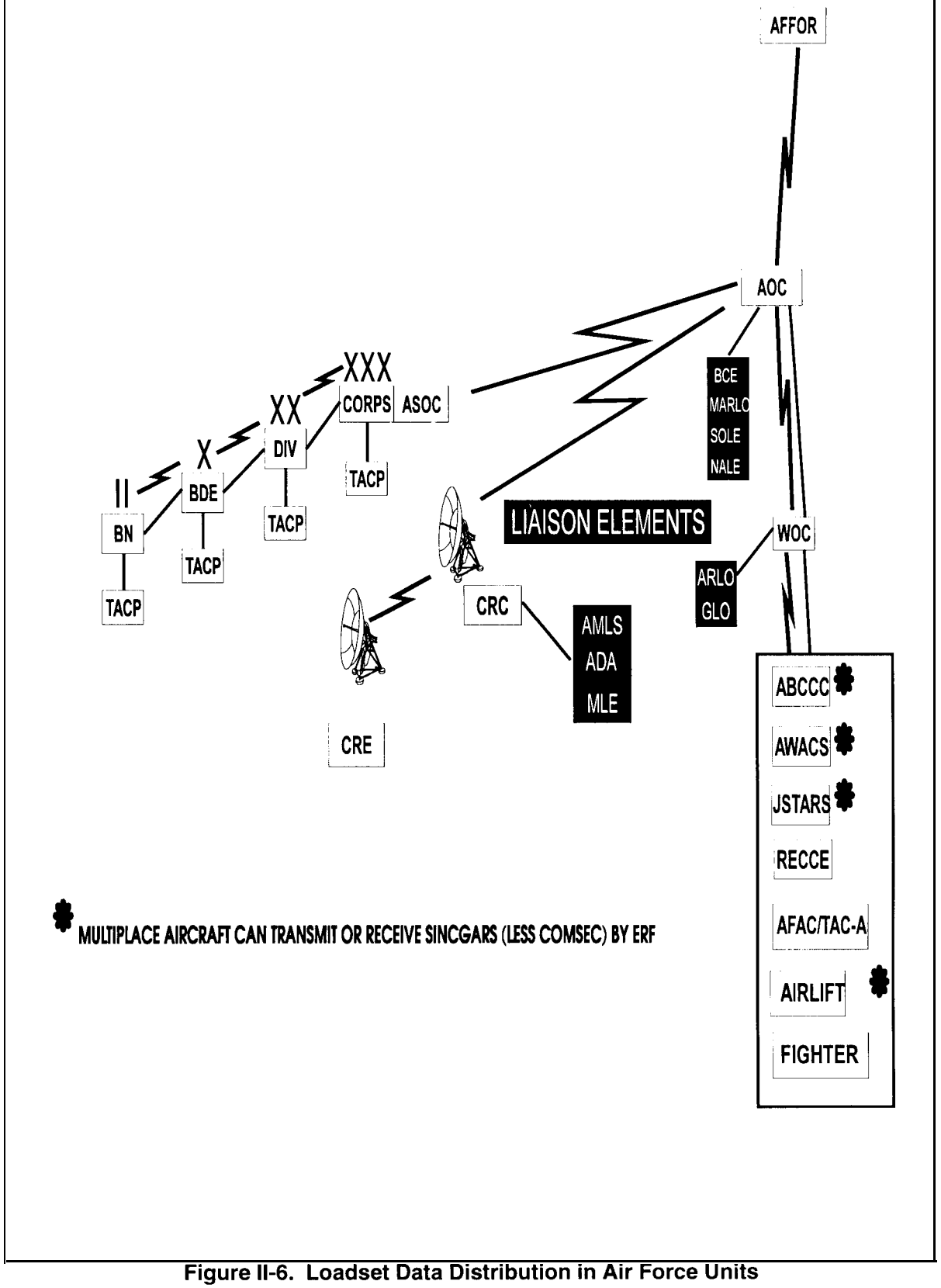

Figure II-6. Loadset Data Distribution in Air Force Units

(a) Provides the JFLCC communications staff with the total USAF SINCGARS net requirements (CAS, CSAR, J-SEAD, etc.).

(b) Receives initial CEOI/SOI, including the SINCGARS FH and associated COMSEC data, from the JFLCC and distributes to USAF users.

(c) Receives from the corps follow-on CEOI/SOI. On a scheduled periodic basis, the air support operations center (ASOC) will receive the follow-on CEOI/SOI editions directly from the corps via 3.5 inch diskettes. The ASOC will electronically transmit the SINCGARS data to the AOC via the AFKDMS, theater deployable communications, and tactical secure data communications systems.

(d) Provides guidance to USAF SINCGARS users regarding loading and employment of SINCGARS nets.

The AOC, in conjunction with generating the ATO, will identify the particular SINCGARS net data, TSKs, and COMSEC key identifiers, call signs, and call words for the specific CAS mission taskings. In addition, the SINCGARS data required by the CRC and CRE will be identified. The Contingency Theater Automated Planning System (CTAPS) running the AFKDMS will be used to manage the SINCGARS fill data identification requirements. The actual SINCGARS FH data and communications identifiers will be transferred to the wing operations center (WOC) via the wing command and control system (WCCS).

(2) CRC. The CRC will develop and distribute load sets for CRC and CRE SINCGARS assets.

(3) ASOC. The ASOC is the corps' focal point for execution of air support missions in support of US Army ground forces. In this capacity, the ASOC—

(a) Coordinates Air Force agreements with the Army for AN/CYZ-10s and SINCGARS data for all TACP SINCGARS radio assets. Currently, the Army has agreed to provide the RDS for installation on the TACP DTDs. Also there is agreement that the Army TACP support unit will provide the SINCGARS CEOI/SOI.

(b) Ensures SINCGARS net requirements for immediate CAS are correctly specified. Immediate CAS will be conducted on a uniquely-specified standing net.

(4) WOC. The WOC executes the ATO as published by the AOC. Operations personnel of tasked units configure mission sets from the SINCGARS data and the linking SINCGARS identifiers contained in the ATO (to be determined) to support the specified mission. The WOC specifically—

(a) Develops procedures for integrating the construction of mission sets into the wing mission planning process using the WCCS and the AFKDMS.

(b) Develops and implements a SINCGARS standard loading scheme.

(c) Develops and implements procedures for transfer of loadsets to the KDS (DTD) at the squadron/unit level and for subsequent loading of SINCGARS radios in specific aircraft assigned to the mission.

(5) Special Tasking Operations. Premission planning requirements for small scale contingency unilateral and interservice operations demand the operational commander provide all SINCGARS and COMSEC fill data or identifiers for Air Force assets before deployment. Physical and electronic distribution of the SINCGARS and COMSEC communications packages will be accomplished as early as possible using the best means available for the particular situation (i.e., STU-III, SATCOM, or ICP).

The employment of ERF for airborne units will only be used as a last alternative.

c. Navy Forces (NAVFOR). Distribution of FH and COMSEC data within NAVFOR is dependent on the task organization. The initial implementation of SINCGARS in the Navy is primarily intended to support amphibious warfare operations. In an amphibious battle group scenario, the communications staff of the commander, amphibious task force (CATF) will act as the deconfliction point for FH and COMSEC data received from the Marine air-ground task force (MAGTF), elements of the amphibious task force, and the composite warfare commander and carrier battle group (CVBG) commander. Figure II-7 illustrates the bottom-up flow of data to the deconfliction point and the top-down dissemination of deconflicted data to every SINCGARS equipped element involved in the operation. In a conventional CVBG scenario, the composite warfare commander (CWC)/officer in tactical command (OTC) communications' staff will act as the deconfliction point for FH and COMSEC data.

(1) The Navy component CONAUTH receives and disseminates the FH and COMSEC data to subordinate echelons. Depending on the situation, the CONAUTH may be at the CWC/OTC, or the warfare commander level. Most often, the CONAUTH will be at the CWC level.

(2) CWC/OTC. The CWC/OTC communications staff may generate and disseminate the data or may delegate those responsibilities to subordinate warfare commanders. Specifically, the CWC/OTC communications staff can generate—

(a) SOI data.

(b) COMSEC data; battle group TEK.

(c) FH data; battle group hop-set, net ID, battle group TSK.

(3) Warfare Commanders. Warfare commanders will either use the data the CWC/OTC generates or, if authorized, generate its own FH and COMSEC data. The warfare commander has the equipment and capability to-

(a) Generate and merge SOI data.

(b) Generate COMSEC data; battle group TEKs.

(c) Generate FH data; net ID, battle group TSKs.

(4) Generation of SOI, TEKs, TSKs, and net ID assignments does not occur below the warfare commander level. When the warfare commander generates the data, it is forwarded to the CWC/OTC and/or CATF/NAVFOR for consolidation and deconfliction.

d. Marine Corps Forces (MARFOR). The Marine Corps will also use RBECS software and the AN/CSZ-9 RDG to generate, distribute, and store FH data and CEOI information. This capability will be maintained down to the regimental/group level and at the Marine expeditionary unit (MEU) command element. RBECS is loaded on all SPEED terminals, and when authorized, can be installed on any MS-DOS-based PC, 80386 or higher, with a minimum of 512K RAM. After Phase II of the NKMS is implemented, RBECS will be installed on the UNIX-based LMD. NSA will continued to generate and distribute all hard copy TEK materials until NKMS is fully operational. The AN/CSZ-9 RDG will perform all FH and CEOI data generation until the NKMS key processor is fully fielded. The Marine Corps will use the AN/CYZ-10 DTD to transfer, store, and fill both SINCGARS TEK and FH data at all levels. The AN/CYZ-10 will utilize one of two software programs, RDS to fill the RT-1523 or the CSEP to fill AN/ARC-210. Marine aircraft groups using the AN/ARC-210 radio will be required to convert RBECS loadset files into CSEP/ARC-210 data

utilizing the AFP software (AFP also allows the entry of Have Quick and single-channel data for the ARC-210). AFP software has the same hardware requirements as RBECS. (See Figure II-8.)

(1) Ashore

(a) MARFOR will receive joint FH and COMSEC data from the JTF J-6 and provide the MAGTF command element (CE) with required frequency resources.

(b) The MAGTF CE will generate MAGTF FH data, publish COMSEC data, and allocate net IDs for all MSCs and supporting units.

(c) The ground control element (GCE) will receive all joint and MAGTF FH data from the MAGTF CE. The GCE is capable of loadset generation down to the regimental level, only when directed.

(d) The aviation combat element (ACE) will receive all joint and MAGTF FH data from the MAGTF CE. It will provide loadset files for conversion for ARC-210. The ACE is capable of loadset generation down to the group level, only when directed.

(e) The MAGTF combat service support element (CSSE) will receive all joint and MAGTF FH data from the MAGTF CE, The CSSE is capable of loadset generation at the CSSE headquarters, only when directed.

(2) Afloat

(a) NAVFOR will provide the MAGTF CE with required frequency resources and joint FH data.

(b) The MAGTF CE will generate MAGTF FH data, publish COMSEC data, and allocate net IDs for all MSCs and supporting units.

(c) The GCE will receive all joint and MAGTF FH data from the MAGTF CE. The GCE is capable of loadset generation down to the regimental level, only when directed.

(d) The ACE will receive all joint and MAGTF FH data from the MAGTF CE. It will provide loadset files for ARC-210 users. The ACE is capable of loadset generation down to the group level, only when directed.

(e) The CSSE will receive all joint and MAGTF FH data from the MAGTF CE. The CSSE is capable of loadset generation at the CSSE headquarters if directed.

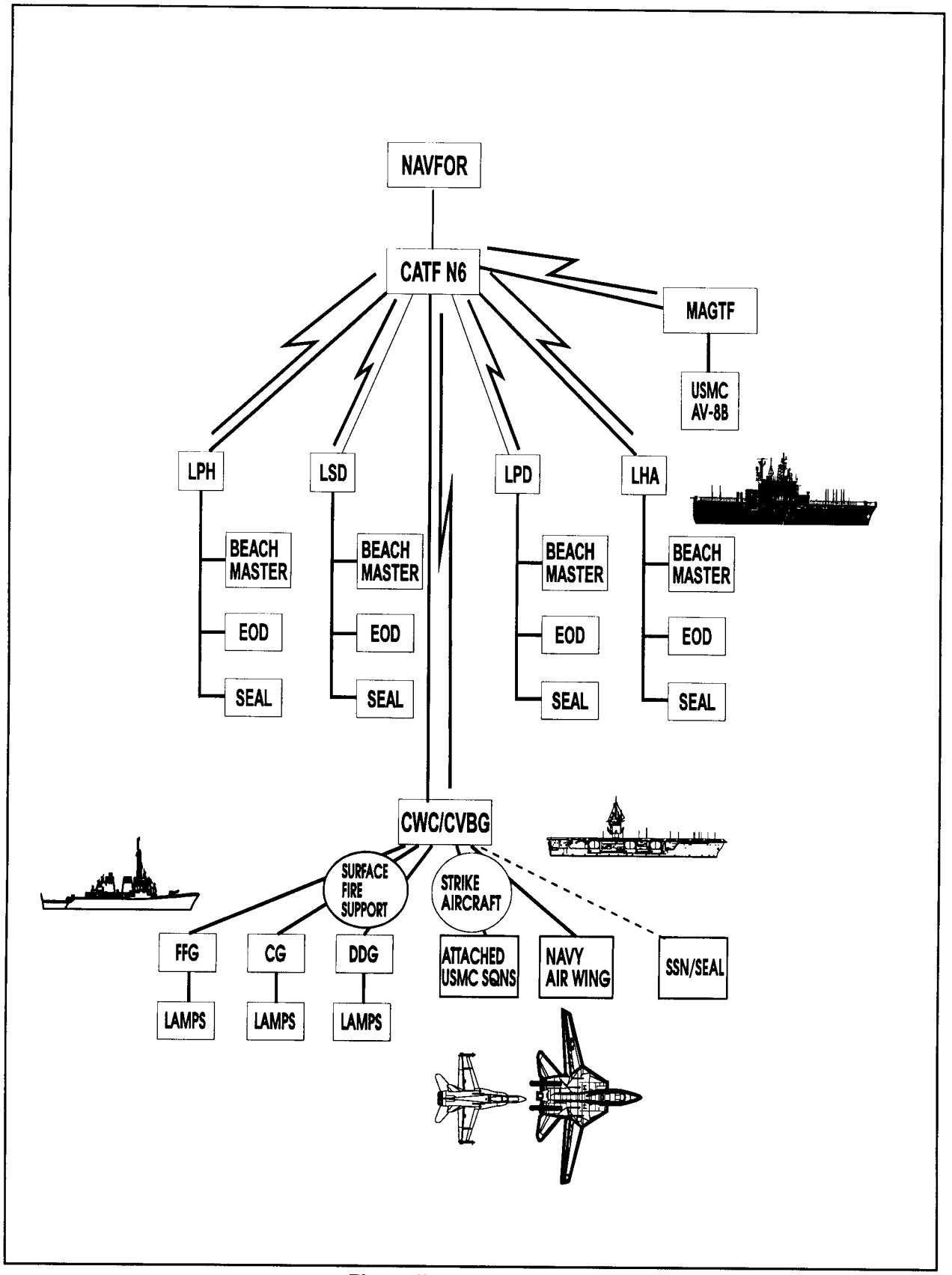

Figure II-7. Navy Conops

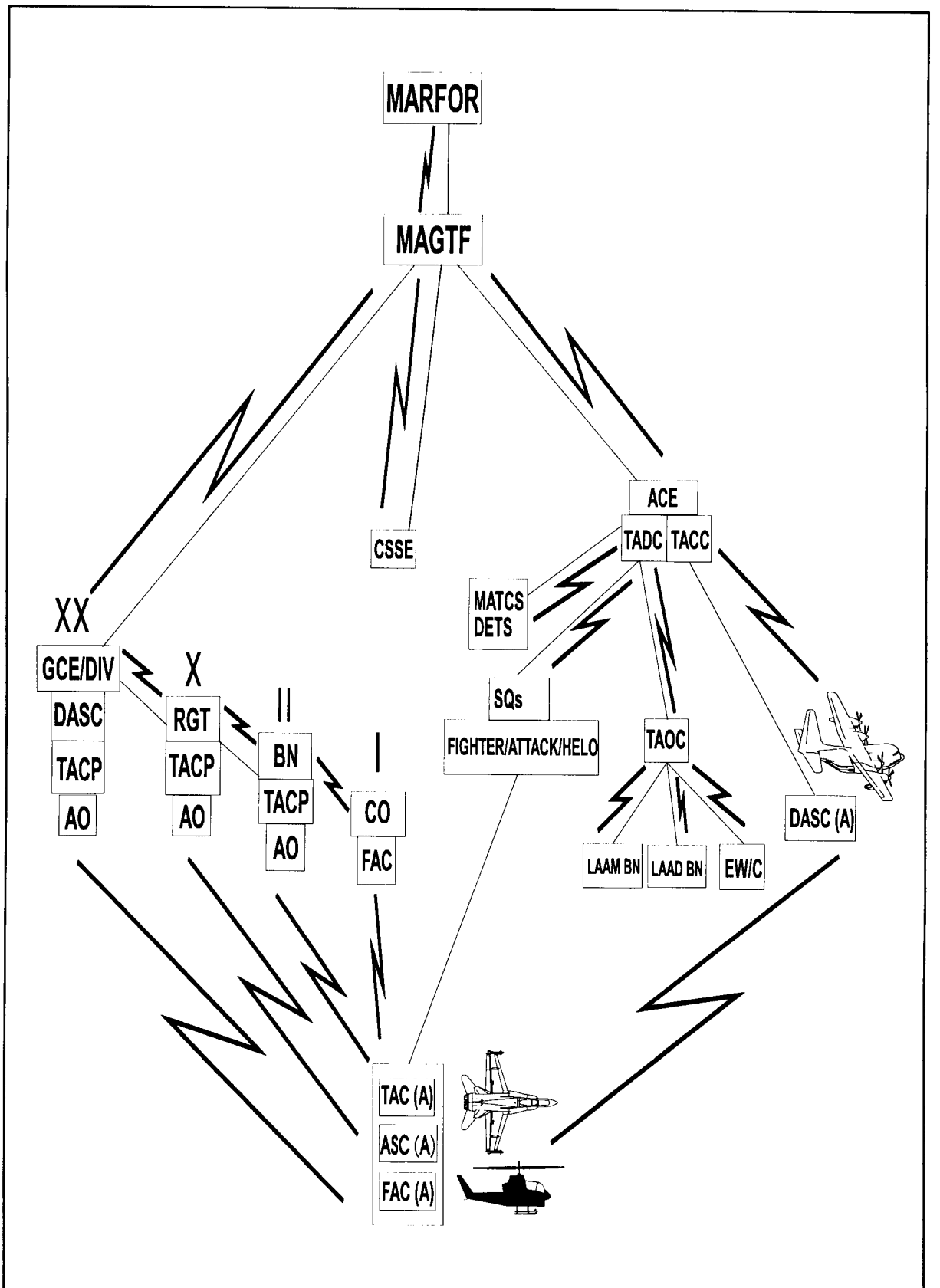

Figure II-8. Loadset Data Distribution Within Marine Units