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Signal Support to Theater Operations

July 2007

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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Change 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 7 May 2008

Signal Support to Theater Operations

1. Change FMI 6-02.45, 5 July 2007, as follows: Remove expiration date.

2. FMI to expire 5 July 2009. Change 1 is required to ensure the FMI can be used as a reference in other publications.

3. File this transmittal sheet in the front of the publication.

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Field Manual Interim
No. 6-02.45

Signal Support to Theater Operations

Contents

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*This publication supersedes FM 6-02.45, 12 April 2004.

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Preface

Field Manual Interim 6-02.45 is the Army's doctrine for signal support at the theater level. It is consistent with and expands on the doctrine in Joint Publication 6-0, Field Manual 6-0, Field Manual 3-0, and Field Manual 3-13. It contains joint, Army, and proponent guidelines to support the entire signal spectrum of operations in the contemporary operational environment.

This manual provides a doctrinal foundation for force design, combat development, professional education, and training of signal Soldiers. It establishes the importance of the LandWarNet, not only to the Soldiers' mission at the tactical levels, but also to the vital need at the theater commander's level. This manual provides information to leaders and planners on how signal assets and the LandWarNet support their operations.

This publication applies to the Active Army, the Army National Guard/Army National Guard of the United States, and the United States Army Reserve unless otherwise stated.

The proponent for this publication is the United States Army Training and Doctrine Command (TRADOC). The preparing agency is the United States Army Signal Center, approved by Combined Arms Doctrine Directorate. Send comments and recommendations on Department of the Army Form 2028 directly to: Commander, United States Army Signal Center and Fort Gordon, ATTN: ATZH-IDC-CB (Doctrine Branch), Fort Gordon, Georgia 30905-5075, or via electronic mail to doctrine@gordon.army.mil or signal.doctrine@us.army.mil. Key all comments and recommendations to pages and paragraph numbers to which they apply. Provide reasons and rationale for your comments to ensure complete understanding and proper evaluation.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

Introduction

This manual is applicable at strategic, operational, and tactical levels of war and pertains to major combat operations, small scale contingencies, Department of Homeland Security, and to a lesser degree, special operations. The content is based on lessons learned from operational experience, combatant commander operational requirements, current and emerging concepts, programmatic initiatives, and the incorporation of new technology. This doctrine examines how the Signal Corps—

- Keeps pace with the Army's transformation.
- Meets joint imperatives for command and control and communications systems.
- Develops and adapts new concepts and designs for employing and protecting the LandWarNet, the Army portion of the Global Information Grid.
- Integrates and employs joint networks.
- Reshapes our organizational structure to meet the imperatives of modularity.
- Meets user requirements in response to the changing role of providing information networks for the Army.

This manual introduces several new organizational constructs that will bridge the gap between the current and objective modular design and make signal organizations relevant across all components: the United States Active Army, Army National Guard, and Army Reserve.

The Army continues transforming to meet new threats by becoming more network enabled, incorporating information technology as a means to ensure joint interoperability, and enabling battle command, intelligence sharing, and effective logistics. It continues evolving to meet the challenges of a new theater of operations. As we become network enabled, as defined by the Joint Staff, we will continue to grow from a voice-reliant environment to one that is almost solely data-centric. The LandWarNet in theater will empower combatant commanders to think better, make faster decisions, and generate and focus decisive combat power more effectively than any adversary. Theater LandWarNet will use extensive data networks to link combatant commanders, organizations, capabilities, and business practices for the explicit purpose of developing and shaping the operational environment and executing meaningful, coherent action.

The Army is spiraling towards being network enabled in an environment that requires investment and experimentation, which will result in changes in Army doctrine, organization, training, materiel, leadership and education, personnel and facilities. The risk for not ensuring a smooth transformation to a jointly focused, network capable force is mission failure. This is all part of the Army evolution to incorporate knowledge-based warfare. The LandWarNet provides infrastructure, knowledge, and Warfighters across the Army to afford combatant commanders' unparalleled ability to defeat threats to this nation and our allies. It includes computers, software, architecture, security, communications, programs, and facilities. It provides processing, storing, transporting, and staging information over a seamless network. It captures emerging capabilities and technologies encompassing all aspects of evolving battle command, communications, information management, and decision support. It includes all Army networks, from sustaining military bases to forward-deployed forces, and aligns Army network goals with those of the Navy and the Air Force. It supports the active component forces, the Army National Guard, and the Army Reserve, from the Soldier in the field to strategic services in the continental United States. The LandWarNet provides the network environment that is a key enabler for ten battle command tenets:

- Commander driven – Battle command that is purpose-oriented and knowledge-based.
- Flexible force tailoring – Command echelons may not be the same as unit echelons.
- Sustained battle command – Resourced for changing and continuous joint operations.
- Unrestricted battle command – Extend the combatant commanders reach anytime, anywhere.
- On-demand collaboration – Teaming commanders and leaders regardless of place and time.
- Singular and seamless – One battle command system.
- Fully integrated – From knowledge bases to forward-deployed.
- Dependability – Unprecedented network performance and quality of service.

- Tailorable battle command – Modular and scaleable to meet dynamic conditions and force sizes.
- Smaller footprint – Dramatically lessens deployed force size without cutting capability.

Army commanders operate in an environment significantly different from the joint commander. The joint commander is in a fixed, well-connected location, as opposed to the Army commander who operates far from any supporting network infrastructure. More importantly, Army combat operations are conducted on the move. Today's Army networks are moving closer to operational requirements being more inherently joint, supporting the geographic combatant commander's networks of choice. The LandWarNet will continue to evolve with a desired end state of meeting the requirements of a continuously evolving Army.

Chapter 1

The Joint Force and Army Networks

The ability to conduct land operations as a part of the joint force is the main focus of today's Army. Using a modular and capabilities-based design, the Army will have greater capacity for a rapid and tailored force that will be more capable of achieving the strategic responsiveness of a full spectrum operation. This will allow combatant commanders (CCDRs) to expand the joint team's ability to deploy rapidly, employ, and sustain forces throughout the global operational environment in any environment. An Army force empowered by joint capabilities and knowledge-networked forces will be the way of the future.

SECTION I – JOINT AND ARMY OPERATIONS

UNDERSTANDING "JOINTNESS"

1-1.   Global interests, diffused technology, and adaptive enemies are critical aspects that influence joint operations as outlined in Joint Vision 2020 .

1-2.   The overarching focus of Joint Vision 2020 is "full spectrum dominance achieved through the interdependent application of dominant maneuver, precision engagement, focused logistics, and full dimensional protection." Army operations focus on employing combined tactical formations conducting battles and engagements geared toward the destruction of enemy forces. Joint operations generate decisive combat power available from all services on a synchronized timeline with a determined scope and purpose of other military service forces, multinational forces, nonmilitary government agencies, nongovernmental organizations (NGOs), and the United Nations. Joint force commanders (JFCs) conduct unified actions, integrating and orchestrating operations directly with the activities and actions of other military forces and nonmilitary organizations in the operational area.

1-3.   Joint forces conduct campaigns and major operations, while the functional and service components of the joint force conduct supported, subordinate, and supporting operations, not isolated or independent campaigns. The joint force increases its total effectiveness without necessarily involving all forces or incorporating all forces equally.

1-4.   Joint missions and joint forces drive specific information requirements, procedures, techniques, systems, and capabilities. The goal is to provide rapid information sharing in order to integrate joint force components, allowing them to function effectively to facilitate a common understanding of the current situation – a common operational picture.

1-5.   Technological developments, which connect the information systems of partners, will provide the links that lead to improved command and control (C2). Critical to maintaining the tempo of operations which incorporate multi-service and multinational capabilities is the sharing of information needed to develop a common understanding of operational procedures and compatible organizations.

ARMY SUPPORT TO THE JOINT FORCE

1-6.   Theater operations are inherently joint and multinational, resulting in the need for greater levels of cooperation between United States (US) forces, other Department of Defense (DOD) components, and governmental, coalition, and host-nation organizations. The Army provides a complete range of force that meets the needs of JFCs, whether by deterring adversaries and potential enemies or by forming the nucleus

of the joint force land component that will prosecute wartime operations. Army Forces provide the Joint Force Commander (JFC) the capability to—

- Deploy quickly into an area of operations (AO).
- Establish and secure lodgments for projecting follow-on forces.
- Sustain the joint force indefinitely.
- Employ airborne and air assault capabilities, which allow JFCs to seize airfields or other important facilities.
- Conduct amphibious operations in conjunction with the Marine and Naval forces.
- Employ Army special operations forces (SOF) which add highly specialized and unique area-focused capabilities to joint forces.

1-7. The development of manageable and coordinated intelligence and communications functions continues to provide significant contributions to joint capabilities. Recent operations in the European, Pacific, and Central Command areas of responsibility (AORs) have contributed to the modernization of the communications and automation management that support these intelligence requirements. This resulted in removing traditional barriers that hampered information and intelligence sharing.

1-8. Central to a theater campaign are those forces employed by the JFC. At the Army's operational level, the senior commander responsible for executing the operational fight, C2 of tactical forces, integration of multiple services, and managing the theater support structure is the Army Service component command (ASCC).

1-9. The ASCC challenge is to shape the military environment and set the conditions for qualified success in the joint operations area (JOA) and the theater in general. Success depends on the ability to communicate across a wide range of agencies and forces using networks that provide links which ultimately allow the ASCC commander to conduct his operational mission and enable subordinate commanders to accomplish their missions.

CHANGES IN THE CONTEMPORARY OPERATIONAL ENVIRONMENT

1-10. The United States can no longer view adversaries through the lens of the Cold War and Warsaw Pact, nor can we judge military operations merely by analyzing an adversary's stage of economic development. Small scale, regional, or local powers may employ extremely advanced military technologies. An adversary's actions require intelligent analysis of fields extending far beyond the traditional battlefield focus. Boundaries between traditional echelons of operations are even more blurred. Current political and technical trends suggest that successful conflict prosecution and termination will depend on multinational commitment, joint operations, and a high professional tolerance for the new forms of conflict.

1-11. The operational environment will continue to be characterized by constant instability. Threats continue to evolve from the familiar conventional formations to those that are more likely to be characterized by—

- No longer clearly presenting themselves in terms of intent, capability, or modes of operation. They will minimize predictability.
- Using irregular military or paramilitary forces and forces forming coalitions of their own to combat US influence.
- An ability to leverage information technology (IT) while engaging in computer and network attacks, electronic warfare (EW), and hostile information operations (IO).
- A range of capability between highly modern conventional armies and simple terrorist actions designed against US interests around the world that either directly or indirectly affects deployment and support of US forces.
- Employing high-tech levels of firepower, protection, and mobility to compete against our state-of-the-art weaponry and precision firepower.
- The ability to change or adapt to the nature of conflicts (especially the political nature) to include multiple, concurrent fights and the combination of different types of threats.

- An increased unpredictability of conflict locations and the sources of opposition. They will use complex terrain and urban environments and disperse forces to offset US capabilities in targeting and precision engagement.
- Offsetting our Warfighting and industrial dominance by exploiting available technologies which are essential to our information and technical superiority.
- Willingness to engage in or exploit weapons of mass destruction (WMD) proliferation.

Note. WMD have made the threat qualitatively different. WMD offer the potential to do extreme damage, both physical and psychological, with a single strike. Many nations are attempting to produce nuclear weapons. The proliferation and acceptance of chemical and biological weapons are growing, because they are relatively inexpensive and easy to produce.

1-12. Generally, antagonists will seek victory against US forces by conducting force-oriented operations that concentrate on prolonging conflict and inflicting unacceptable casualties. They will create conditions designed to defeat US forcible entry operations and use a transition to a defensive framework that avoids decisive battle. They will attempt to preserve their capability and use irregular tactics to erode US public support and cohesion within US coalitions while forming their own coalitions that seek international support.

1-13. Tactically, conflicts will involve an increased use of terrain and urban areas to disperse mechanized and armored units. Enemy forces will concentrate and disperse them as opportunities allow and employ upgraded camouflage and deception techniques in order to reduce exposure to US surveillance, targeting, and precision strike technology.

1-14. Army missions dictate continued preparation for and participation in efforts that span the entire spectrum of conflict. It is essential to understand that Army Forces participate in almost all operations as part of a joint team. CCDRs rely upon Army Forces to conduct sustained land operations as a part of an overall strategy involving land, air, sea, and space forces. The following is the operation construct of full spectrum operations:

- Offensive operations—intend to destroy or defeat an enemy with the purpose of imposing the commander's will on the enemy and achieving decisive victory by focusing on seizing, retaining, and exploiting the initiative.
- Defensive operations—defeat an enemy attack, buy time, economize forces, or develop conditions favorable for offensive operations. Defensive operations preserve control over land, resources, and populations. They retain terrain, guard populations, and protect key resources.
- Stability operations—sustain and exploit security and control over areas, populations, and resources. They employ military capabilities to reconstruct or establish services and support civilian agencies. Stability operations involve both coercive and cooperative actions. They may occur before or after offensive and defensive operations but are accomplished separately, usually at the low end of the range of military operations. Stability operations lead to an environment in which, in cooperation with a legitimate government, the other instruments of national power can predominate.
- Civil support operations— address the consequences of man-made or natural accidents and incidents beyond the capabilities of civilian authorities. Army forces do not conduct stability operations within the United States; under U.S. law, the federal and state governments are responsible for those tasks. Instead, Army forces conduct civil support operations when requested, providing Army expertise and capabilities to lead agency authorities.

1-15. Commanders combine and sequence the types of operations to form their overall operational design for campaigns and major operations. Army Forces conduct full spectrum operations abroad by executing offensive, defensive, and stability operations as part of integrated joint, interagency, and multinational teams. Army Forces within the United States and its territories conduct full spectrum operations by combining offensive, defensive, and civil support operations to support homeland security. Operations at home and abroad occur concurrently at the strategic-level. See Figure 1-1.
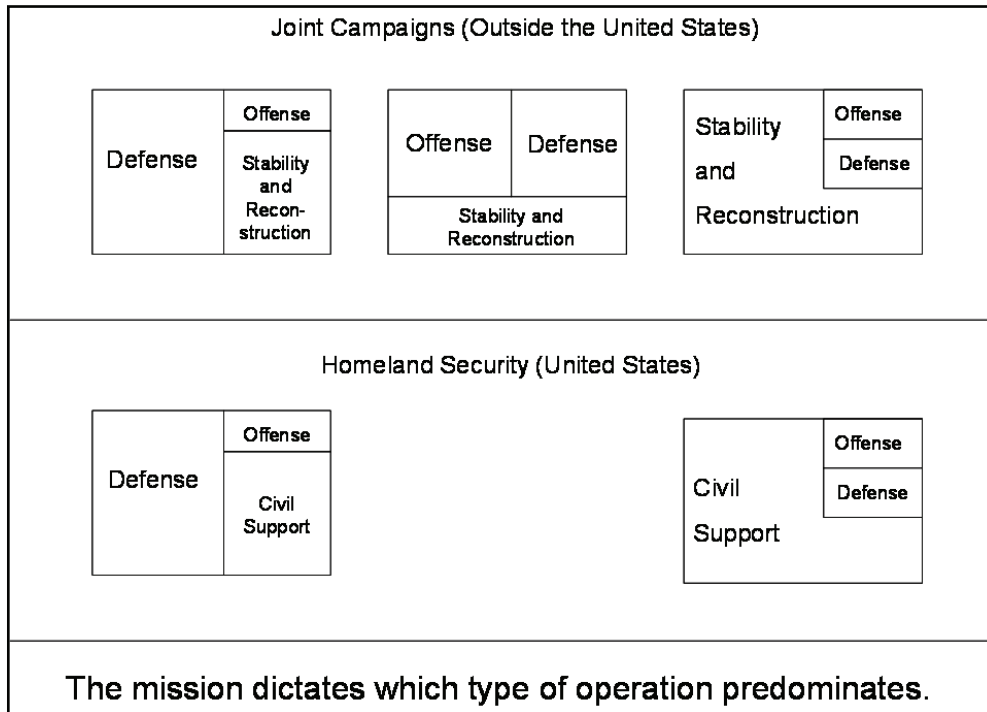
Figure 1-1. Full spectrum operations

1-16. Commanders allocate different proportions of their force to each type of operation during different phases. Large units usually conduct simultaneous offensive and defensive operations abroad, as well as stability operations. Units at progressively lower echelons receive missions that require fewer combinations of them. At lower echelons, units usually perform only one type of operation at a time.

1-17. Today's Army responds rapidly with forces that move quickly and commence operations immediately upon arrival in distant theaters of operation. This expeditionary mindset demands joint-capable forces that can—

- Deploy rapidly into austere theaters with little or no advance materiel buildup.
- Rely on more efficient use of precision strike capabilities requiring even closer coordination and use of strategic and tactical intelligence.
- Integrate and employ land forces immediately with little time to reorganize after deployment.

1-18. With the changes in the operational environment, there is a significant increase in the need for information sharing, collaboration, and information services. Deployed forces depend upon joint and national assets to facilitate a commander's information superiority (IS) and the ability to prosecute offensive IO while actively engaged in defending friendly information. When required, Army Forces develop the situation through maneuvers to identify enemy intentions, mask larger friendly operations, or preclude enemies from improving their information posture. The challenge to leaders and planners at all levels is to maintain information and technological dominance over our adversaries throughout this environment.

1-19. The joint environment, coupled with the demands of network enabled expeditionary operations, significantly increases reliance on accessing the Global Information Grid (GIG). Army tactical and maneuver elements rely on networks to leverage strategic and national capabilities which allow them to deploy into theaters from multiple force projection platforms and fight upon arrival. This complex environment demands that commanders have full network connectivity, complete network synchronization, and consistent standards to access the network immediately and to fight.

> *Note.* A scenario contained in Appendix A depicts the mobilization and projection of US and coalition forces.

SECTION II – THE MODULAR ARMY AND JOINT NETWORKS

MODULARITY

1-20. Joint requirements developed a new mindset of expeditionary warfare, which calls for different combat and support structures that will rapidly deploy into austere theaters with little or no advance materiel buildup. The concept of a modular design will enable these support structures to conduct operations on arrival with other services, multinational forces, or SOF in a joint theater. They are designed to employ communications and automation interoperability.

1-21. This presents a significant change to the Army's post-Cold War organizations. Army Forces began to change in order to be more flexible and responsive. These modular organizations meet the JFC's requirements while reducing organizational turbulence, inefficiency, and slow response times. The Army became more brigade-centric, often disassembling existing unit structures to design purpose-built, permanent combat teams. The focus was on developing modular organizations that could provide a mix of land combat power more easily organized for any combination of Army missions as part of a joint campaign. The redesign produced units that—

- Operate as part of a joint or mulitnational force as the rule, not the exception.
- Are expeditionary in nature, being lighter and more strategically deployable forces.
- Reduce their physical and logistical footprint by increasing reliance on reachback logistics and intelligence support.
- Are more mobile and lethal with an increased area of control and influence, using smaller tactical formations.
- Enable commanders to see first, understand first, and act first, placing IS as an element of combat power.
- Are information and network enabled by leveraging IT at all possible levels.

THE MODULAR ARMY CORPS AND DIVISION

1-22. The most significant advantage of modularization is greater strategic, operational, and tactical flexibility. The numbered ASCC, corps, and division will serve as the following:

- A theater's operational, strategic, and tactical C2.
- A land force and joint support element.
- C2 for a brigade combat team (BCT) or sustainment brigade, which serves as the primary tactical and support elements in a theater

1-23. While conventional thinking is to view these echelons as linear improvements to the original division and corps, they are not. Both higher echelons will be complementary, modular entities designed to employ task-organized forces within integrated joint campaigns.

1-24. The modular numbered Army is organized and equipped primarily as an ASCC for a geographic combatant commander (GCC) or combatant command and serves as the senior Army headquarters (HQ) for a theater. It is a regionally focused, but globally networked, headquarters that consolidated most functions that were performed by the traditional Army and corps levels into a single operational echelon. The ASCC is responsible for—

- Administrative control (ADCON) of all Army serviced assigned forces and installations in the GCC's area of responsibility (AOR).
- Integrating Army Forces into the execution of theater security cooperation plans.

- Providing Army support to joint forces, interagency elements, and multinational forces as directed by the GCC.
- Support to Army, joint, and multinational forces deployed to diverse JOAs.

1-25. The ASCC modular design provides enough capability to execute theater entry and initial phases of a campaign, while providing a flexible platform for Army and joint augmentation as the theater develops. It provides ADCON of all Army personnel, units, and facilities in the AOR. The ASCC is also responsible for providing continuous Army support to joint, interagency, and multinational elements as directed by the GCC, regardless of whether it is also controlling land forces in a major operation.

1-26. The ASCC will command and control a diverse construct of Army subordinate commands and separate functional elements which provide the theater an assigned mix of regionally focused, supporting resources and capabilities to include the following:

- Theater sustainment command.
- Signal Command (Theater) (SC[T]) or Theater Signal Brigade.
- Theater medical command.
- Theater Intelligence Brigade (TIB).
- Civil affairs brigade.
- Battlefield surveillance brigade.
- Theater Fires Brigade.
- Theater MP Command

1-27. An ARFOR commander in a JOA exercises operational control (OPCON) to supporting subordinate units and attachments in the form of brigades, battalions, and elements that were drawn from a "force pool." These units and attachments would provide additional reinforcement through a combination of modular command, control, and support to that JOA and joint task force (JTF). The actual size, composition, and designation are adjusted to the demands of the GCC or ASCC. Refer to Figure 1-2.
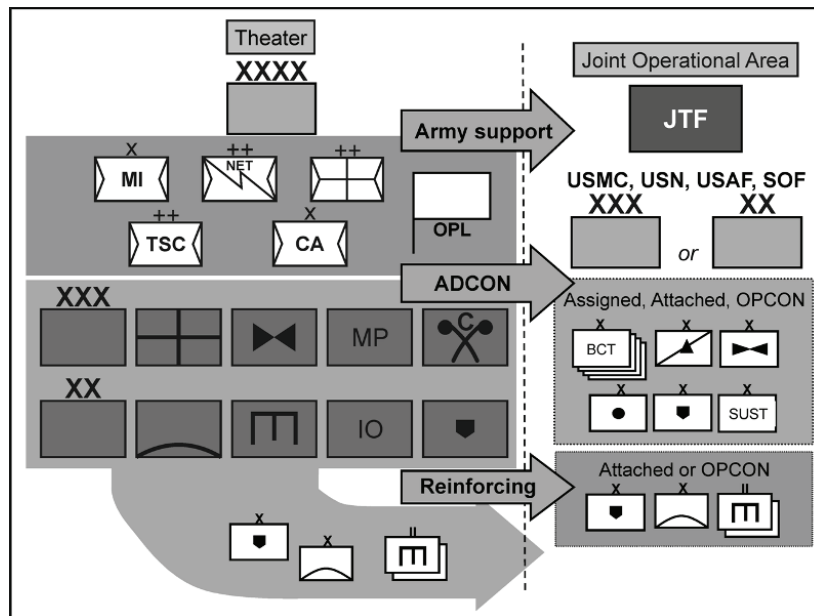

Figure 1-2. ASCC support to JTF and theater forces

1-28. The ASCC may also provide the resources needed for corps or division to stand up as an ARFOR, joint force land component commander (JFLCC), or a JTF HQ. The divisions have self-contained headquarters with deployable command posts supported by division signal companies (DSC), security, and sustainment units. As a completely modular entity, it may command a tailored mix of forces determined by the ASCC and in coordination with the GCC. Refer to Figure 1-3.
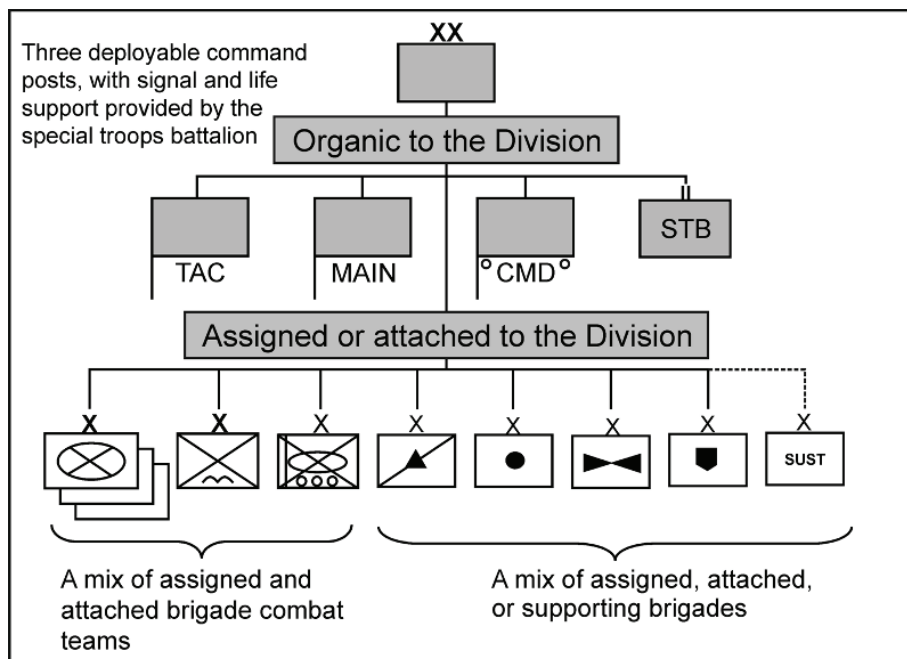
Figure 1-3. Division force structure

JOINT NETWORKS

1-29. The networking of all Joint Force elements creates capabilities for unparalleled information sharing and collaboration, adaptive organizations, and a greater unity of effort via synchronization and integration of force elements at the lowest levels.

1-30. Modular Army signal organizations are designed to be interoperable with all other services to include the network capabilities within the joint information and communication systems (formally known as C4 systems in the joint community) in support of joint operations. The joint communications system must—

- Provide the right information in a useful format to the right place and to the right user at the right time.
- Provide a secure, robust, reliable, and trustable means for the JFC to exercise authority and direct forces.
- Span large geographic areas and a range of conditions, in austere or complex environments, and in all weather conditions.
- Be tactically agile and globally deployable, support tactical operations under highly mobile situations, and support en route, intra-theater, and inter-theater C2.
- Connect superior and subordinate commanders during all phases of an operation and rapidly adapt to changing demands.
- Facilitate interface with governmental and NGOs, local officials, and multinational forces.

1-31. The GIG is the DOD information environment that supports joint communications systems and networks supporting joint operations. Joint Publication (JP) 6.0 defines the GIG as "the globally interconnected, end-to-end set of information capabilities, associated processes and personnel for collecting, processing, storing, disseminating, and managing information on demand to Warfighters, policy makers, and support personnel." The GIG—

- Spans all services and components and includes all owned and leased computing systems, communications, software and applications, data, security services, and other information services necessary to achieve IS.

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