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THE UNITED STATES NAVAL WAR COLLEGE

Joint Military Operations

Reference Guide



"FORCES/CAPABILITIES HANDBOOK"

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INTRODUCTION

Every student enrolled at the Naval War College is presumed to have a solid understanding and appreciation of their service's capabilities and limitations, particularly within their occupational specialty. However, knowledge of the other services' combat organizations, doctrine, concept of operations, or general information (and perhaps that of other occupational specialties within your own service) is likely to be less comprehensive. This document provides *basic information* about each of the services, SOF, strategic lift, and operational command and control. Each of these topics will be discussed in greater detail in future sessions.

The format of this document is designed to be succinct yet also present a complete and accurate description of the subject. Short paragraphs, bullet format, diagrams and appendices are used to convey general or generic, vice specific, information. Numbers, ranges, sizes and speeds are either rounded off, cover a broad range of options, or are not discussed at all. The goal is for you to become familiar with the capabilities that the joint force can provide so that you, the operational planner, can accomplish your mission objectives. This document can also serve as a quick reference in your future endeavors.

Finally, in this ever-changing defense environment of budget restraints, base closures, and force reductions, some of the information contained within may be or become outdated. Seminar discussions will address the most current information.

U.S. NAVY

I. Mission and Purpose

The mission of the Navy is to maintain, train and equip combat-ready Naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas. In order to successfully carry out this broad mission the Navy maintains capability to perform the following key functions as directed by DOD Directive 5100.01:

- Conduct offensive and defensive operations associated with the maritime domain including achieving and maintaining sea control, to include subsurface, surface, land, air, space, and cyberspace.

- Provide power projection through sea-based global strike, to include nuclear and conventional capabilities; interdiction and interception capabilities; maritime and/or littoral fires, to include naval surface fires; and close air support for ground forces.

- Conduct ballistic missile defense.

- Conduct ocean, hydro, and river survey and reconstruction.

- Conduct riverine operations.

- Establish, maintain, and defend sea bases in support of naval, amphibious, land, air, or other joint operations as directed.

- Provide naval expeditionary logistics to enhance the deployment, sustainment, and redeployment of naval forces and other forces operating within the maritime domain, to include joint sea bases, and provide sea transport for the Armed Forces other than that which is organic to the individual Military Services and USSOCOM.

- Provide support for joint space operations to enhance naval operations, in coordination with the other Military Services, Combatant Commands, and USG departments and agencies.

- Conduct nuclear operations in support of strategic deterrence, to include providing and maintaining nuclear surety and capabilities.

II. Organization and Command Structure

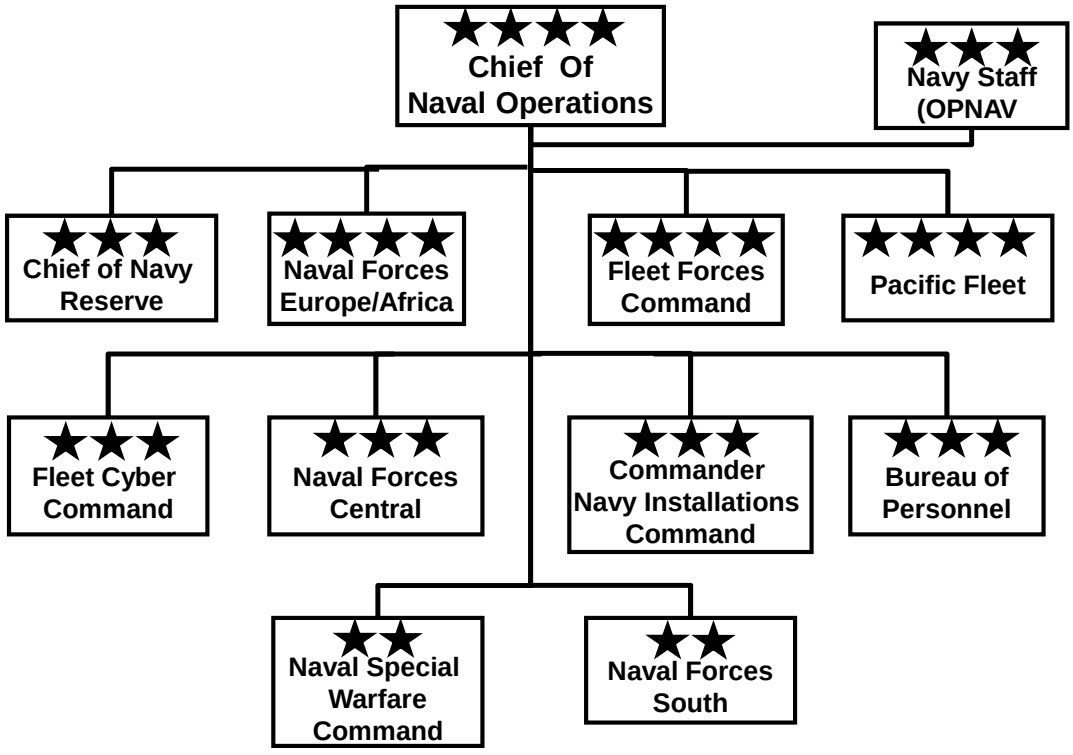
The U.S. Navy was founded on 13 October 1775 and the Department of the Navy was established on 30 April 1798. The Department of the Navy has three principal components: the Navy Department, consisting of executive offices mostly in Washington, D.C., the operating forces, including the Marine Corps, the reserve components, and in time of war, the U.S. Coast Guard (in peace it is a component of the Department of Homeland Security), and

the shore establishment. The focus of this chapter is on the Navy operating forces, not to include the Marine Corps who are addressed in a separate chapter.

Naval Operating Forces (Fleet Forces)

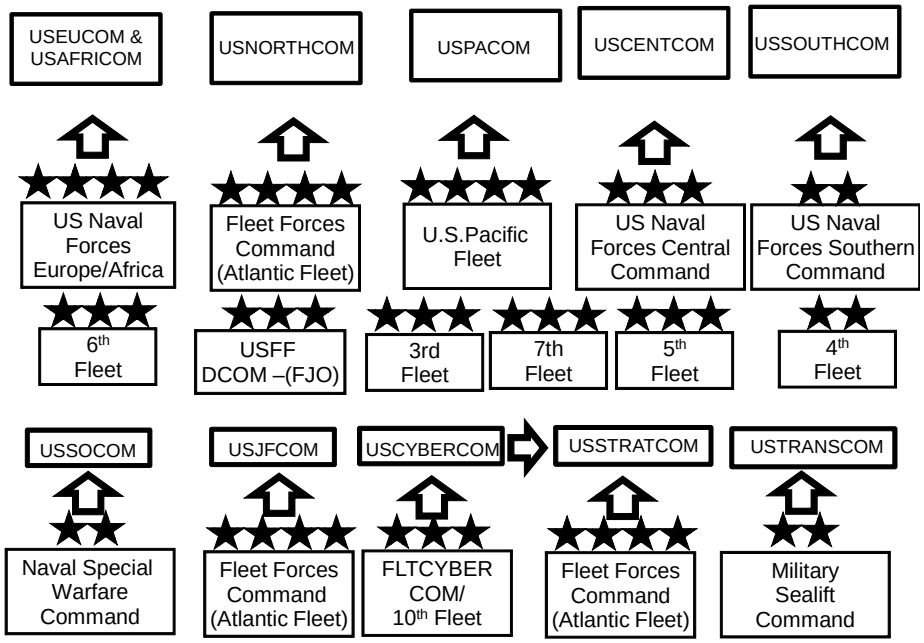
Navy operating forces have a dual chain of command. Administratively, they report to the Chief of Naval Operations for the execution of their Title 10 responsibilities (man, train, equip, maintain). All Navy operating units have an administrative chain of command which runs through the appropriate Type Commander (TYCOM): (Surface Forces (SURFOR), Air Forces (AIRFOR), Submarine Forces (SUBFOR), Special Warfare (NAVSPECWARCOM), Expeditionary Forces (Navy Expeditionary Combat Command (NECC)), Auxiliary and sealift forces (Military Sealift Command)). Type Commanders have responsibility for the training and readiness of their "type" forces to include maintenance, manning, and equipping as well as the training and assignment of personnel. The following chart presents an overview of the Title 10 / administrative organization of the Navy operating forces:

US NAVY ADMIN ORGANIZATION



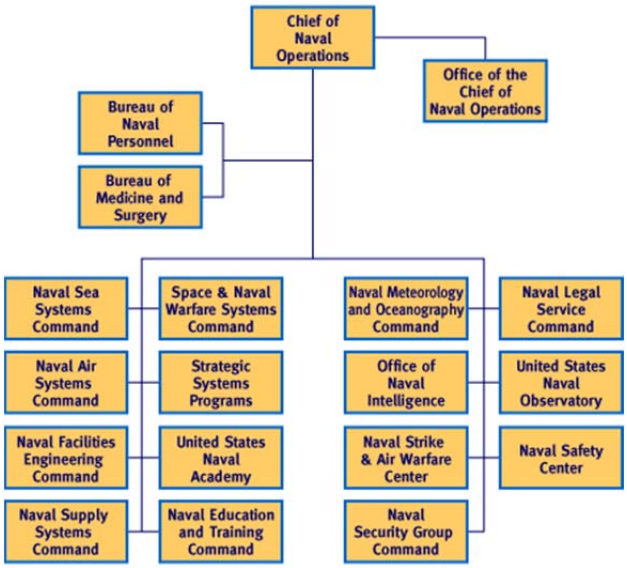
Operationally, Navy forces report to the appropriate Unified Combatant Commanders through the assigned Navy component commander. As Navy units enter the area of responsibility (AOR) for a Geographic Combatant Commander, they fall under operational control (OPCON) of the appropriate numbered fleet commander (via the Navy component

commander). The following chart presents an overview of the operational organization of the Navy operating forces:



Naval Shore Forces

The shore establishment provides support to the operating forces (known as "the fleet") in the form of: facilities for the repair of machinery and electronics; communications centers; training areas and simulators; ship and aircraft repair; intelligence and meteorological support; storage areas for repair parts, fuel, and munitions, and medical / dental facilities. The following chart illustrates the Navy shore establishment:



Operational Organization

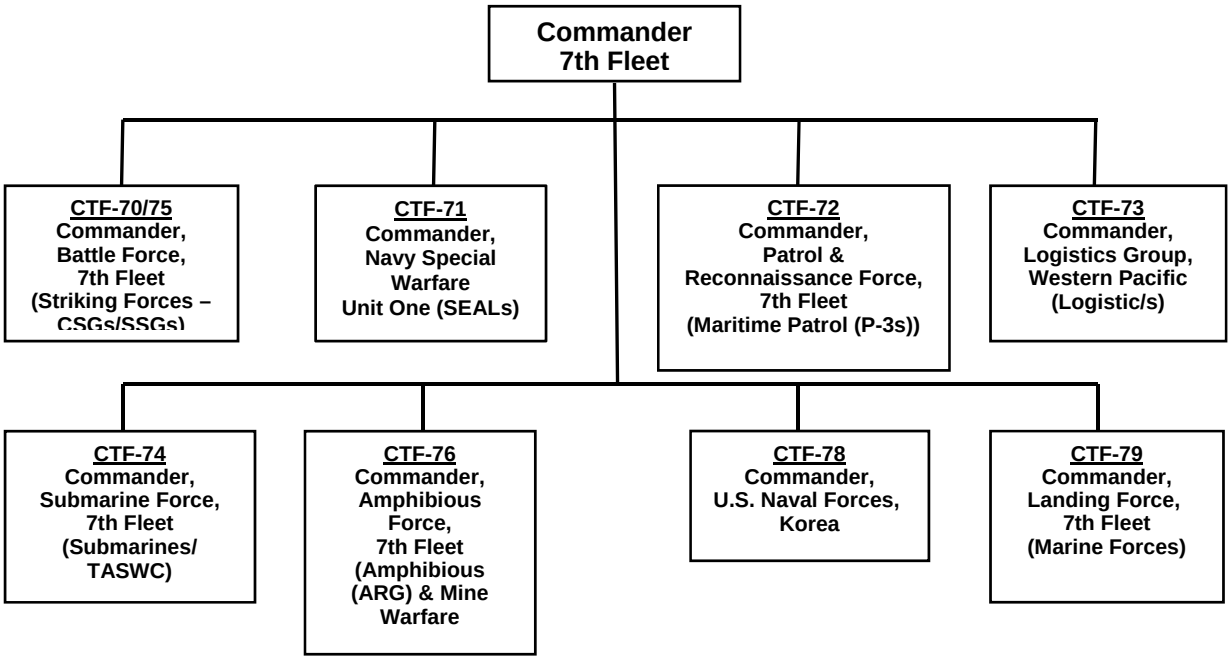
The operational level of command for Navy forces is the Numbered Fleet commander. All operational units operate under the OPCON of the numbered fleet commander within whose area of operations they are located. The below table identifies the numbered fleets and their areas of operations:

Fleet	Headquartered	Area of operations
USFF DCOM for Fleet and Joint Operations*	Norfolk, VA	Western Atlantic Ocean
3rd	San Diego, CA	Eastern and Central Pacific Ocean
4th	Mayport, FL	Caribbean, Central and South America
5th	Manama, Bahrain	Middle East (Red Sea, Arabian Sea, Arabian Gulf)
6th	Naples, Italy	Eastern Atlantic Ocean, Southern Indian Ocean adjacent to Africa, Mediterranean, Adriatic, Baltic, Barents, Black, Caspian, North Seas.
7th	Yokosuka, Japan	Western Pacific, Indian Ocean

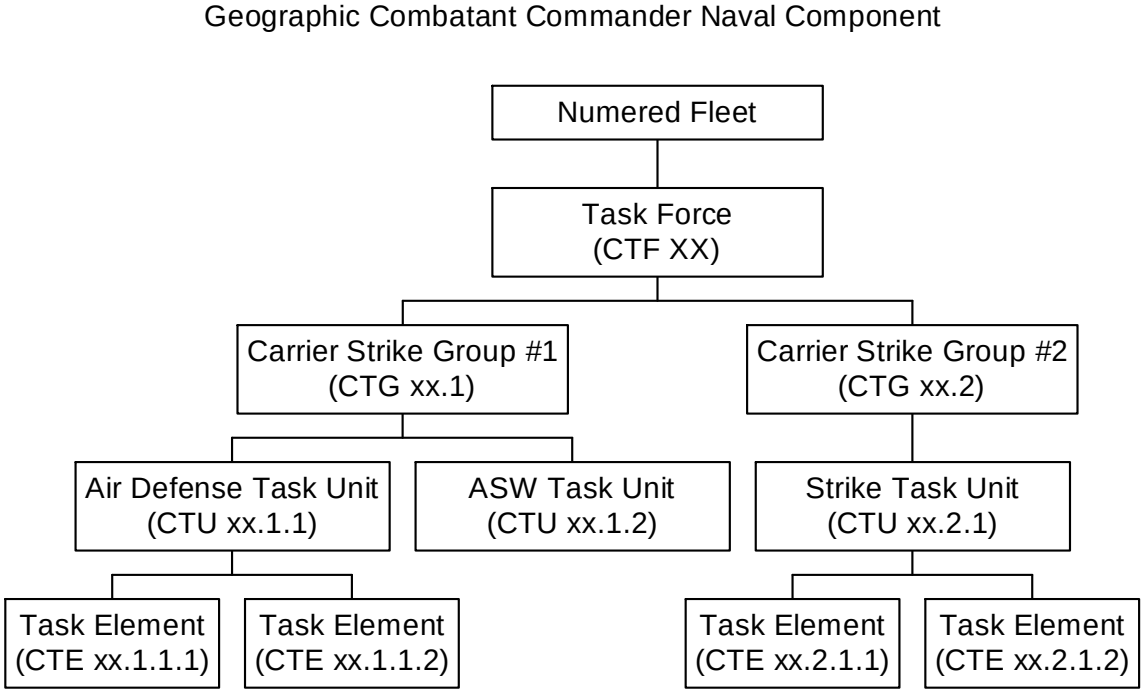
* USFF combination with 2nd Fleet left USFF 3 Star Deputy to run Fleet Functions

Numbered fleet commanders are permanently organized and assigned to a geographic combatant commander. To command forces at the operational level in the maritime domain, each numbered fleet has a Maritime Operations Center (MOC). The MOC gives the fleet commander greater situational awareness on current operations in the maritime domain as well as the capability to plan military operations to meet operational and strategic objectives across the spectrum of conflict. The MOC is staffed by the numbered fleet staff and augmented at time of crisis to give the Fleet Commander the C2 capability to operate as a CFMCC or JTF commander. PACFLT and USFF also have a MOC. The numbered fleet staff level and operational chain of command are task oriented below. Naval fleets are organized into task forces. Each task force is responsible to the Fleet Commander for certain functions related to the assigned units. The 7th Fleet Task Force organization is illustrated below:

TYPICAL NUMBERED FLEET ORGANIZATION
(7th Fleet)



As illustrated above, the numbering system for Task Forces subordinated to numbered fleets is derivative of the number of the fleet (e.g. designations of 7th fleet Task Forces take the form CTF-7x). Forces are further organized below the task force level as illustrated below which depicts a typical operational command organization for afloat naval forces. An individual Carrier Strike Group (CSG) or Amphibious Ready Group (ARG) within a given fleet constitutes a Task Group (e.g. USS RONALD REAGAN CSG operating in the 5th Fleet could be designated CTG 50.1). REAGAN CSG units operating together for a specific task, perhaps the air defense units within the CSG, would receive a separate Task Unit designation (e.g. REAGAN CSG air defense units could be designated CTU 50.1.2). Individual units within the CTU are designated as Task Elements (e.g. the commanding officer of the Guided Missile Destroyer MAHAN operating in the Arabian Gulf could be designated CTE 50.1.2.3). This organizational scheme is scalable to meet many operational situations.



The basic fighting units within the Navy are ships, submarines and aircraft squadrons which are predominantly O-5 level commands. Navy O-6 level "Major Commands" include larger ships (cruisers (CG), amphibious assault ships (LHD/LHA)), destroyer, amphibious or submarine squadrons (DESRON/PHIBRON/SUBRON), air wings (Carrier (CVW) or Type) and aircraft carriers (CVN). Similar type ships (i.e.: destroyers or amphibious ships) are organized under squadrons (DESRONs or PHIBRONs). Aircraft squadrons are organized under wings.

III. U.S. Navy Concept of Operations

The U.S. Navy is an instrument of national power, employed to prevent conflict and, if necessary, prevail in war. It is organized, trained and equipped primarily to fight at and from the sea and to influence events on land. U.S. Navy forces are uniquely suited to overcoming diplomatic, military, and geographic impediments to access – an increasing challenge in the contemporary environment – while respecting the sovereign territory of nations. Self-sustaining, seabased expeditionary forces provide persistent presence by operating forward to conduct security cooperation, build partnerships, prevent and deter conflict, communicate our Nation's intent, respond to crises and, when necessary, facilitate the introduction of additional naval, joint, or multinational forces, as well as interagency, international, or non-governmental organizations.

U.S. Navy Expanded Core Capabilities

The U.S. Navy continues the evolution of naval power from the blue-water, war-at-sea focus of the "Maritime Strategy" (1986), through the littoral emphasis of "… From the Sea" (1992), and "Forward . . . from the Sea" (1994). Adapting to the changing world environment and operational requirements, the U.S. Navy began reorganizing itself in 2002 under a new

concept entitled "Sea Power 21". Continued development between the Navy and Marine Corps presented a unified vision for the future entitled, "Naval Operations Concept 2006" (NOC 06) as a means for developing maritime strategy to meet the evolving challenges of the 21st Century. The Navy and Marine Corps, together with the Coast Guard, explored the ideas articulated in NOC 06 to refine this strategy, resulting in the follow on publication "A Cooperative Strategy for 21st Century Seapower" in 2007. This marked the first time the Navy, Marine Corps, and Coast Guard had come together to create a unified maritime strategy. "Naval Operations Concept 2010" (NOC 10) describes when, where and how U.S. naval forces will contribute to enhancing security, preventing conflict and prevailing in war in order to guide Maritime Strategy implementation in a manner consistent with national strategy. NOC 10 describes the *ways* with which the sea services will achieve the *ends* articulated in "A Cooperative Strategy for 21st Century Seapower" (CS-21). The "Cooperative Strategy" six expanded core capabilities which comprise the core of U.S. maritime power:

Forward Presence
Forward presence defines our forces and facilitates all naval missions, enabling rapid crisis response when necessary. Global presence enhances security and mitigates instability, contributing to a more comprehensive form of conflict prevention. Forward presence for U.S. Navy forces includes:

- Persistent carrier strike group (CSG) and amphibious ready group with embarked Marine expeditionary unit (ARG/MEU) in the Arabian Gulf/Indian Ocean.

- Constant carrier strike group and ARG/MEU in the Western Pacific provided with permanently forward deployed forces in Japan.

- Persistent naval presence in the Mediterranean.

- Global Fleet Stations (GFS) to support geographic combatant commanders' long-term security cooperation and engagement activities in key worldwide locations such as SW Asia, SE Asia, Caribbean Basin, Gulf of Guinea, and Horn of Africa. The "Global Fleet Station Concept of Operations" defines GFS as a highly visible, positively engaged, persistent sea base of operations from which to interact with partner nation military and civilian populations and the global maritime community. The optimal platform for GFS is a shallow draft vessel with surface and vertical lift capability and space for a variety of detachments and equipment such as an LPD or LSD.

Maritime Security
Maritime security is a non-doctrinal term that can be defined as those operations conducted to protect maritime sovereignty and resources, and to counter maritime-related terrorism, weapons proliferation, transnational crime, piracy, environmental destruction, and illegal seaborne immigration. Key enabling actions include improving cooperation and mutual capacity and capability, enhancing collective global awareness, and providing comprehensive and effective response options to threats in the maritime domain.

Global Maritime Partnerships (GMP) represents the overarching framework by which the United States will develop cooperative relationships with international partners. The Maritime Operational Threat Response (MOTR) plan addresses the full range of maritime security threats and establishes the protocols for achieving a coordinated response. Additionally, the National Fleet policy partners the Navy and Coast Guard towards improved integration of multi-mission platforms, infrastructure, and personnel between the two services.

Identifying the full range of maritime threats is essential to increasing security in the maritime domain and is the primary objective of Maritime Domain Awareness (MDA). As part of MDA, U.S. Naval forces in conjunction with outside agencies use the following options in response to maritime threats:

- **Increased Surveillance and Tracking:** Vessels of interest are tracked using a wide variety of military and commercial space-based systems, as well as air, surface, and underwater sensors.

- **Maritime Interception Operations:** Defined as "efforts to monitor, query, and board merchant vessels in international waters to enforce sanctions against other nations such as those in support of United Nations Security Council Resolutions or prevent the transport of restricted goods."

- **Law Enforcement Operations:** Navy vessels with Coast Guard Law Enforcement Detachments counter activities in U.S. and international waters such as illegal immigration or drug trafficking.

- **Expanded Maritime Interception Operations:** Authorized by the President and directed by the Secretary of Defense to intercept vessels identified to be transporting terrorists or terrorist-related material that poses an imminent threat to the United States and its allies.

Humanitarian Assistance and Disaster Response

U.S. forces in general and naval forces in particular are increasingly being employed for "soft power" missions. Possessing organic medical support, strategic and tactical lift, logistics support, robust communications capabilities and premier planning and coordination tools, naval forces are ideally suited for humanitarian assistance and disaster response in the littorals where the preponderance of the world's population resides. Proactive humanitarian assistance and disaster response activities enable our naval forces to build partnerships that serve to increase trust, enhance partner capacities, and provide the opportunity to engage with a larger set of international partners. The capabilities required to perform this mission are no longer considered less important than those of combat operations as they enable accomplishment of select "prevent" as well as "prevail" elements of our national strategy.

Sea Control

Sea control is the essence of seapower and is a necessary ingredient in the successful accomplishment of all naval missions. It requires control of the surface, subsurface, and

airspace and relies upon the naval force maintaining superior capabilities and capacities in all sea control warfare tasks (to include air defense (AD), anti-surface warfare (ASUW), anti-submarine warfare (ASW), mine warfare (MIW), intelligence, surveillance and reconnaissance (ISR)). Sea control is achieved primarily through the demonstrated use or credible threat of force. It is established through naval, joint, or combined operations designed to ensure the use of ocean and littoral areas by one's own forces and to prevent their use by the enemy.

By continually operating forward, U.S. naval forces become familiar with the choke points, sea-lanes, and littorals that comprise strategic maritime geography. Concurrently, they promote relationships and increase interoperability with international partners while gaining familiarity with the personalities and behavior patterns of regional actors. Both of these actions result in improved sea control capability by U.S. and partner navies.

Power Projection

The ability to project power increases in importance as access diminishes. U.S. naval forces provide proven and superior capability to globally project flexible, scalable, lethal, and sustainable power.

There are two basic forms of naval power projection: strike operations and amphibious operations. Strike operations employ ballistic or cruise missiles, aircraft, naval surface fires, non-kinetic technologies, Marines or naval special warfare teams to attack targets ashore. Amphibious operations employ a landing force embarked in an amphibious task force to accomplish a variety of "hard power" and "soft power" tasks.

Among various strike options, aircraft carriers with embarked air wings and sea-based missile platforms are unique and preeminent capabilities maintained by the U.S. Navy. Unmatched in providing timely and powerful response options to national leadership, when major crises occur, the Fleet Response Plan (FRP) provides the capacity to surge and aggregate up to six carrier strike groups within 30 days and one additional carrier strike group within 90 days.

Amphibious operations, to include assault, withdrawal, demonstrations, raids and other activities such as noncombatant evacuations, humanitarian assistance and disaster response in permissive, uncertain, or hostile environments, continue to be critical in the post Cold War environment with over 85 instances where these capabilities were applied. Amphibious ships possess an inherent flexibility across the spectrum of operations due to their wealth of command and control suites, flight decks, well decks, vertical and surface connectors, medical facilities, and carrying capacity.

Deterrence

It is our Nation's long-standing policy to deter aggression by maintaining naval forces capable of projecting various forms of power throughout the world. These forms include sea-based nuclear weapons and the forward posturing of credible conventional combat power in key regions, as well as the ability to surge forces tailored to meet emerging crises. The self-deploying and self-sustaining nature of naval forces, operating freely at sea unrestricted

by diplomatic constraints, allows them to play a primary role in deterrence. The ability to move credible combat power into position to conduct precision strike or project forces ashore, without actually doing so, allows national decision-makers to signal U.S. intentions while keeping their options for action open.

Deployed naval forces are uniquely suited to perform a comprehensive approach to deterrence. They possess a credible and scalable ability to challenge and retaliate against state and non-state aggressors using nuclear, conventional, or unconventional means. Their movement is not limited by diplomatic challenges to access.

In addition to maintaining nuclear and conventional capability advantages, naval forces are developing capabilities in the emerging areas of space, cyberspace, ballistic missile defense, and theater security cooperation.

Composition and Capability of Major Deployable Elements

Carrier Strike Group (CSG)

The CSG is a flexible, heavy strike group that can operate in any threat environment, in the littorals or open ocean. CSG capabilities support initial crisis response missions and may be undertaken in non-permissive environments characterized by multiple threats including, but not limited to: anti-ship missiles, ballistic missiles, fighter/attack aircraft, electromagnetic jammers, cruise missile equipped surface combatants, submarines (nuclear and diesel), mines and terrorist threats. Logistic support ships are controlled as a theater asset (previously one logistic support ships was attached to each CSG). Typically a carrier strike group will have (platform details in Section IV capabilities):

1 CSG command staff (one or two star flag led staff)
1 Destroyer Squadron (DESRON) staff (O-6 led staff)
1 Aircraft Carrier (CVN)
1 Carrier Air Wing (CVW) (air wing composition in Section IV Capabilities)
5 surface combatant ships (CG/DDG/FFG/LCS)

- Minimum 3 cruise missile land attack (TLAM) capable ships
- Minimum 4 air/missile defense capable ships
- Minimum 2 helo capable ships with embarked helo detachments

1 cruise missile land attack (TLAM) / ASW submarine (SSN)
1 logistics helo detachment

Amphibious Ready Group / Marine Expeditionary Unit (ARG/MEU)

The ARG/MEU is the routine rotational amphibious force package employed by the Navy Marine Corps team. The baseline ARG/MEU consists of 3 amphibious ships with naval support elements and an embarked MEU **without** an embarked Flag or General led staff. It may or may not deploy with surface combatants and a submarine depending upon the mission requirements. In the event a requirement exists for an ARG/MEU to be led by a Flag or General officer the amphibious force package will be referred to as an Expeditionary

Strike Group (ESG). Centered on the flexibility and readiness of a combined MEU and an ARG, the total ARG/MEU provides operational freedom and expanded warfare capabilities, not only by land with embarked Marines, but at sea as well. An ARG/MEU consists of the following (platform details in Section IV capabilities):

1 Amphibious Squadron (PHIBRON) Staff (O-6 led staff)
3 Amphibious ships

- 1 Amphibious Assault Ship (LHA or LHD)
- 1 Amphibious Landing Ship Transport Dock (LPD)
- 1 Amphibious Landing Ship Dock (LSD)

Naval Support Elements (NSE)

- 1 Assault Craft Unit (ACU) detachment with 1 – 4 displacement landing craft (LCU)
- 1 Assault Craft Unit (ACU) detachment with 3 – 6 non-displacement landing craft (LCAC)
- 1 Beachmaster Unit (BMU) detachment
- 1 SAR/logistics helo detachment
- 1 Tactical Air Control squadron (TACRON) detachment
- 1 Fleet Surgical Team (Level II medical capability)
- Nominally, 1 Navy explosive ordnance disposal (EOD) platoon
- 1 amphibious construction battalion detachment

Marine Expeditionary Unit (MEU) (additional details in Marine Corps chapter)

- Command Element (O-6 led MEU staff)
- Ground Combat Element (reinforced battalion landing team)
- Air Combat Element (Composite squadron of fixed and rotary wing aircraft)
- Logistics Combat Element (Combat Logistics Battalion)

Nominally 3 surface combatant ships (Only included in an ESG depending on resources/mission)

- 2 air/missile defense surface combatant ships (CG/DDG)
- 1 multi-mission surface combatant ship (CG/DDG/FFG/LCS)
- 2 SUW/ASW capable helo detachments (3-4 helos)

Surface Strike Group (SSG)

The SSG is a surface group that can operate independently or in conjunction with other maritime forces. SSG capabilities support crisis response missions or sustained missions and may be employed in limited non-permissive environments characterized by multiple threats. TLAM / standard missile equipped SSGs provide deterrence and immediate contingency response, while maintaining the ability to conduct maritime security operations and other tasks. SSGs are primarily designed to be an independent, sea-based, mobile group that will provide sea control and strike power to support joint and allied forces afloat and ashore. SSG capabilities include passive surveillance and tracking, passive defense and early warning, strike operations, sea control, as well as the multi-platform capabilities inherent within the SSG. When so equipped, SSGs capabilities include maritime ballistic missile defense (BMD). An SSG composition is tailored to its assigned mission, but a nominal SSG is as follows:

3 surface ships

- 2 strike / cruise missile land attack (TLAM) capable surface combatants (CG/DDG)
- 1 surface combatant ship or amphibious ship (CG/DDG/LCS/FFG/LHA/LHD/LPD/LSD)

Naval Fleet Auxiliary Force (NFAF)

The 40 ships of Military Sealift Command's Naval Fleet Auxiliary Force are the supply lines to U.S. Navy ships at sea. These ships provide virtually everything that Navy ships need, including fuel, food, ordnance, spare parts, mail and other supplies. NFAF ships enable the Navy fleet to remain at sea, on station and combat ready for extended periods of time. NFAF ships also conduct towing, rescue and salvage operations or serve as floating medical facilities. All NFAF ships are operated by civilian mariners (CIVMARS) under Military Sealift Fleet Support Command (MSFSC). They provide all of the Navy's combat logistics services to the fleet. MSFSC exercises command and control through regional sealift logistics commands located in Norfolk (SEALOGLANT), San Diego (SEALOGPAC), Naples (SEALOGEUR), Bahrain (SEALOGCENT) and Far East (Singapore SEALOGFE). Details on NFAF ships are in section IV.

Future Force

While the 2010 Quadrennial Defense Review did not include a specific numerical goal for Navy ships, in 2006, then CNO ADM Michael Mullin set forth a plan which advocated a 313 ship Navy. This number remains the "target" although as of June 2011 we stand at 285 ships. Regardless of the numerical target, the challenges with maintaining a modern and capable fleet (ships, submarines and aircraft) in the current budget environment and with the persistent difficulties on achieving budget targets during project development and construction are immense. QDR 2010 called for a fleet centered on 10-11 carrier strike groups. Selected Navy procurement programs include:

- **CVN-78 program:** CVN-78 (future USS GERALD R. FORD) represents the first major investment in CVN design since the 1960s. Improvements over CVN-77 include reduced manning with associated reduced total ownership costs and an increased sortie generation of 25 percent. CVN-78 is scheduled to be commissioned in 2015. Two ships of this class are currently under construction.

- **DDG-51:** Fifty six DDG-51 guided missile destroyers have been delivered with six in various stages of construction. The Navy may continue construction of a flight III DDG- 51 class to fill the gap in capability until the DDG-1000 technologies become more mature. Both of these ship classes can perform the TBMD mission. The flight III ships will have increased length and more VLS strike missile capacity among other improvements.

- **DDG-1000:** The Navy's new multi-mission destroyer designed to provide precision strike and sustained volume fires to support Joint forces inland and conduct independent attacks against land targets. The DDG-1000 program emphasizes

"sensor-to-shooter" connectivity in order to provide a naval or Joint Task Force commander the multi-mission flexibility to engage a wide variety of land targets while simultaneously defeating maritime threats. The lead ship of this class is scheduled for delivery in 2014. The ultimate number of DDG-1000s is unknown and could be as low as 2 -3.

- **LCS:** The littoral combat ship will be optimized for war fighting in the littoral environment. It will be a theater-based asset designed to counter enemy access-denial weapons such as diesel-electric-powered submarines, mines, and fast patrol boats. LCS will include modular mission payloads that provide operational flexibility to match the threat. LCS units will also be attached to strike groups as required, to provide enhanced protection when operating near shore. The LCS ships will use the two crew manning rotation to maximize on station time for each ship. The Navy plans to acquire 55 littoral combat ships. Of this number, two ships are in commission and two are under construction.

- **F-35 Joint Strike Fighter:** The JSF will replace the Navy and USMC's aging inventory of F/A-18s and will be capable of meeting all air-to-ground and air-to-air combat requirements. In a bigger context, the JSF will replace at least 13 different aircraft for 11 nations. U.S. Navy Initial Operational Capability (IOC) is projected for 2016 with an inventory eventually totaling 680 aircraft between the Navy and USMC.

- **E-2D Advanced Hawkeye:** The E-2D is the newest variant of the E-2 aircraft platform and is currently in development. It features state-of-the-art radar with a two-generation leap in capability and upgraded aircraft systems that will improve supportability and increase readiness. Fleet integration is planned for FY'15 and the projected inventory is 73 aircraft through 2022.

- **P-8A Poseidon:** The P-8A is being designed to replace the P-3C Orion as a long-range anti-submarine warfare (ASW), anti-surface warfare (ASuW), intelligence, surveillance and reconnaissance (ISR) aircraft capable of broad-area, maritime and littoral operations. Projected IOC is 2013 with a projected inventory of 117.

- **Virginia Class Submarine:** With 7 *Virginia* class submarines currently commissioned, 11 under contract the total class size is expected to be 30 ships. This class incorporates several technological improvements allowing decreased manning and life cycle maintenance cost. The *Virginia* class is optimized to fight in the littorals including increased SOF delivery capability.

IV. Capabilities

Listed in block format are a few ship "classes" for review. There may be significant differences among the ships in each class. However, when dealing with naval forces, one encounters a series of acronyms designating ship types. These letter designations for

warships, adopted by the U.S. Navy around the turn of the century, have since been used worldwide as universal shorthand for warship types.

Naval Ship Designations

AS	Submarine Tender	LHD/LHA	Amphibious Assault Ship
CVN	Carrier (Nuclear Power)	LPD	Amphibious Transport Dock
CG	Guided Missile Cruiser	LSD	Landing Ship, Dock
DDG	Missile (Anti-air) Destroyer	MCM	Mine Countermeasures Ship
FFG	Frigate, Guided Missile	T-AE	Ammunition Ship
PC	Patrol Craft	T-AFS	Combat Stores Ship
SSN	Submarine, Nuclear Attack	T-AH	Hospital Ship
SSBN	Ballistic Missile Submarine	T-AKE	Dry Cargo/Ammunition Ship
SSGN	Guided Missile Submarine	T-AO	Fleet Oiler
LCC	Amphibious Command Ship	T-AOE	Fast Combat Support Ship
LCS	Littoral Combat Ship	T-AGOS	Ocean Surveillance Ship
		T-ATF	Fleet Ocean Tug
		T-ARS	Salvage and Rescue ship

Note: A T-Designation such as T-AE, T-AFS, T-AO, etc. denotes Naval Fleet Auxiliary Force (NFAF) vessels, owned by the USG and operated by the Military Sealift Command (MSC) with civil service merchant marine crews and embarked naval detachments. These vessels are formally known as United States Naval Ships (USNS) and can be identified by the blue and gold striping on their stacks.

Aircraft Carrier (CVN)

The aircraft carrier is a multipurpose platform. It has the flexibility to base various types of aircraft in order to conduct anti-air, strike, anti-surface, and anti-submarine warfare missions simultaneously. The carriers are capable of over 30 kts and have substantial endurance (16 days of 24hr/day aviation fuel). The embarked air wing helps provide protection to both the carrier and the escort ships. The carrier has a limited ability to provide underway replenishment and/or vertical replenishment to support ships in company.

Ship type	Class	No.	Warfare Missions	Equipment
CVN	NIMITZ* 92,000 tons 1040 ft 134 ft beam 30+ kts speed 5300 crew w/air wing	10 active	AAW, EW, USW, CCC, SUW, STW, MIW (offensive)	CV AIR WING, 2 reactors produce 280,000 shaft horsepower, 4 shafts. NSSMS, CIWS, limited UNREP/VERTREP capability
*Also the single ship class nuclear powered ENTERPRISE (CVN65)				

Carrier Air Wing (CVW)
Typical wing composition on a carrier includes:

VFA / VMFA*(Fighter Attack)	2 Squadrons of 10 FA-18A+/C Hornets	20
VFA (Fighter Attack)	2 Squadrons of 12 FA-18E/F Super Hornets	24
VAW (Early Warning)	1 Squadron of 4 E-2C Hawkeyes	4
VAQ (Electronic Warfare)	1 Sqd of 4 EA-6B Prowlers or 5 EA-18G	4
VRC (Onboard Delivery)	1 Detachment of 2 C-2A COD	2
HSC(SUW/NSW/CSAR/MCM)	1 Squadron of 8 MH-60Ss #	8
HSM(SUW/ASW)	1 Squadron of 11 MH-60Rs %	11
	TOTAL	73

***** VMFA= Marine Fighter Attack squadron
# MH-60S helos onboard CVN and logistics ship
% MH-60R helos onboard CVN and surface combatants

Flight Deck Operations
The Carrier Air Wing Commander (CAG) [1]performs major command functions in directing and administering the employment of embarked aviation squadrons. There are two common methods of organizing aircraft launches and recoveries. First, **Cyclic Operations**, which consists of several scheduled launch/recovery cycles per flight day. A cycle is normally 1.25 to 1.5 hours long, enabling 7-8 cycles in a 12-hour flying day—producing upwards of 120 sorties. Cyclic operations provide predictability for the flight deck, but are inflexible. Aircraft cannot be easily launched or recovered outside of prescribed times due to fueling, rearming, and deck spotting (various aircraft locations on the flight deck) evolutions for the next cycle. **Flexible Deck/Battle Flexible Deck Operations** mean that aircraft can land anytime, not just once a cycle. For warfare commanders, "flex deck" operations mean greater flexibility to "get an aircraft now." The downside is that "flex deck" operations cannot be sustained over an indefinite period of time; the carrier becomes far more predictable and constrains the number of aircraft available. Aircraft maintenance and flight deck crew rest requirements remain the controlling factors in either case.

Surface Combatants
Surface combatants are multi-mission platforms that can operate independently, in company with a carrier, amphibious forces, or in convoy as escorts. Additional missions include surface fire support, blockade, screening, search and rescue, tracking, ELINT collection, tactical deception, surveillance, evacuation, harassment and landing force support. Types of surface combatants include:

- **The *Ticonderoga* Class Cruiser (CG):** The 22-ship *Ticonderoga* class guided missile cruiser provides the muscle of the surface combatant fleet. The Aegis Weapon System provides unprecedented defensive capability against high performance aircraft and cruise missiles. The SPY-1 phased array radar enables it to control all friendly aircraft units operating in its area and has the capability for surveillance, detection, and tracking of enemy aircraft and missiles. Recent AEGIS

[1] The acronym/term CAG is still utilized to describe the Air Wing Commander and is strictly a holdover from when the air wing was referred to as Carrier Air Group (CAG).

system upgrades provide coupled with the SM-3 missile provide proven IAMD capability as demonstrated by USS LAKE ERIE in shooting down a tumbling US satellite. Towed array sonar and LAMPS MK III helos provide ASW capability. Tomahawk vertical launch systems provide land attack capability. *Ticonderoga* class has hangars for two LAMPS helos and is capable of 30+ knots. Endurance depends on speed (2500 NM at 30 kts to 8000 NM at 14 kts).

- **The *Arleigh Burke* Class Destroyer (DDG):** Like the larger *Ticonderoga* class cruisers, 62 ship class DDG-51's combat systems center around the Aegis combat system and the SPY-lD, multi-function phased array radar. The combination of Aegis, the Vertical Launching System, an advanced anti-submarine warfare system, advanced anti-aircraft missiles and Tomahawk, make the *Burke* class formidable ships. DDG-51 class ships, if in receipt of system upgrades, possess IAMD capabilities equivalent to those on the CG-47 class.

- **The *Oliver Hazard Perry* Class Frigate (FFG):** Still in the active fleet serving as escorts as well as conducting drug-interdiction or maritime interception operations. The *Oliver Hazard Perry* class consists of 51 ships of which 29 remain in commission. They were built to escort amphibious readiness groups, underway replenishment groups and convoys with particular emphasis on Air Defense and ASW. This class of ship has had its MK 13 guided missile launcher removed and thus no longer has the ability to launch either the Standard Missile or the Harpoon Missile. In spite of this, FFGs provide valuable forward presence for security cooperation, maritime security and many other tasks in support of the Joint Force commander.

- **The *Freedom* Littoral Combat Ship (LCS):** LCS is a fast, agile, focused-mission platform designed for operation in near-shore environments yet capable of open-ocean operation. The LCS consists of only two ships that are currently in commission. The planned 55 ship class is designed to defeat asymmetric "anti-access" threats such as mines, quiet diesel submarines and fast surface craft. The LCS-1 *Freedom* class consists of two different hull-forms: a semi-planning mono-hull, and an aluminum trimaran – designed and built by two industry teams, respectively led by Lockheed Martin and General Dynamics. These seaframes will be outfitted with reconfigurable payloads, called Mission Packages, which can be changed out quickly. Mission packages are supported by special detachments that will deploy manned and unmanned vehicles and sensors in support of mine, undersea and surface warfare missions.

Ship Type	Class	No.	Warfare Missions	Equipment
CG-47 Guided Missile Cruiser (CG 47 – 51 decommissioned)	TICONDEROGA 9,600 tons 567 ft 55 ft beam 30+ knots 388 crew	22 of 27 built remain in service	AAW, EW, SUW, CCC, USW, STW, BMD	2 x 5 in (127 mm) 54 caliber Mark 45 dual purpose guns; 2 x 20 mm Phalanx CIWS Mark 15 guns; CG-52 on replace these with 2 x 61-cell Mark 41 VLS each armed with a mix of ASROC, Tomahawk, SM-2 and ESSM, LAMPS (2)
DDG-51 Destroyer Guided Missile	ARLEIGH BURKE 8300 tons 466 ft 59 ft beam 30+ kts 323 crew	57 of 62 built	AAW, SUW, USW, STW, EW, CCC, BMD(with upgrades)	VLS for Tomahawk, ASROC, standard missiles, Harpoon (canisters), 5"/54 cal gun, CIWS, torpedo tubes, ESM, LAMP (2) (DDG-72 and later)
FFG Frigate	OLIVER HAZARD PERRY 4100 tons 445 ft 45 ft beam 29 kts, 200 crew	29 of 51 built remain in service	AAW, SUW, USW, EW, CCC	76 mm gun, CIWS, LAMPS (2)
LCS Littoral Combat Ship	FREEDOM 3079 tons 378 ft, 57 ft beam 45 kts 50 crew	2 (55 planned)	MIW, ASW, MIO	RAM, 1x57mm gun, 2 MH60 R/S helicopters or 1 MH60 R/S and 3 Firescout VTUAV's.

Attack Submarines (SSN)

Attack submarines are designed to seek and destroy enemy submarines and surface ships; project power ashore with Tomahawk cruise missiles and Special Operation Forces; carry out Intelligence, Surveillance, and Reconnaissance (ISR) missions; support Carrier Strike Groups; and engage in mine warfare. There are three classes of SSNs now in service. Los Angeles (SSN 688) class submarines are the backbone of the submarine force with 45 now in commission. Thirty-one *Los Angeles* class are equipped with 12 Vertical Launch System tubes for firing Tomahawk cruise missiles. The Navy also has three *Seawolf* class submarines. The *Seawolf* class is exceptionally quiet, fast, well-armed, and equipped with advanced sensors. Though lacking Vertical Launch Systems, the *Seawolf* class has eight torpedo tubes, which can also fire Tomahawks, and can hold up to 50 weapons in its torpedo room. The third ship of the class, USS JIMMY CARTER (SSN 23), has a 100-foot hull extension called the multi-mission platform. This hull section provides for additional payload to accommodate advanced technology used to carry out classified research and development and for enhanced warfighting capabilities. The Navy is now building the next-generation SSN, the *Virginia* (SSN 774) class. The *Virginia* class is tailored to excel in a wide range of warfighting missions. These include anti-submarine and surface ship warfare;

special operation forces; strike; intelligence, surveillance, and reconnaissance; carrier and expeditionary strike group support; and mine warfare. The *Virginia* class has several innovations that significantly enhance their warfighting capabilities with an emphasis on littoral operations.

Ballistic Missile Submarines (SSBN)
The Navy's fleet ballistic missile submarines, often referred to as "Boomers," serve as an undetectable launch platform for intercontinental missiles. They are designed specifically for stealth and the precision delivery of nuclear warheads. The 14 *Ohio* class SSBNs have the capability to carry up to 24 submarine-launched ballistic missiles (SLBMs) with multiple independently-targeted warheads. The SSBN's primary weapon is the Trident II D-5 missile. SSBNs are specifically designed for extended deterrent patrols. To increase their at-sea time, the *Ohio* class have three large-diameter logistics hatches that allow sailors to rapidly transfer supply pallets, equipment replacement modules and machinery components, significantly reducing the time required for in-port replenishment and maintenance. The *Ohio* class design allows the submarines to operate for 15 or more years between major overhauls. On average, the submarines spend 77 days at sea followed by 35 days in-port for maintenance. Each SSBN has two crews, Blue and Gold, which alternate manning the submarines while on patrol. This maximizes the SSBN's strategic availability while maintaining the crew's training readiness and morale at high levels.

Guided Missile Submarine (SSGN)
Ohio class guided-missile submarines (SSGN) provide the Navy with an unprecedented combination of strike and special operation mission capability within a stealthy, clandestine platform. Armed with tactical missiles and equipped with superior communications capabilities, SSGNs are capable of directly supporting dozens of Special Operation Forces (SOF) in America's global war on terrorism. The SSGN Program Office converted four SSBNs into SSGNs in a little more than five years at a significantly lower cost than building a new platform and in less time. Each SSGN is capable of carrying up to 154 Tomahawk or Tactical Tomahawk land-attack cruise missiles. The missiles are loaded in seven-shot Multiple-All-Up-Round Canisters (MACs) in 22 of 24 missile tubes. These missile tubes can also accommodate additional stowage canisters for SOF equipment, food, and other consumables, extending the amount of forward-deployed time for on board SOF. The missile tubes also promise additional capability to host future payloads such as new types of missiles, unmanned aerial vehicles, and unmanned undersea vehicles. Each submarine has the capacity to host up to 66 SOF personnel at a time. Additional berthing was installed in the missile compartment to accommodate the added personnel and other measures have been taken to extend the amount of time that the SOF can spend deployed aboard the SSGNs. Two lock-out chambers (permanently fixed in the first two missile tubes) allow clandestine insertion and retrieval of SOF personnel. Both the Dry Deck Shelter (DDS) and the Advanced SEAL Delivery System (ASDS) can mount atop the lockout chambers, greatly enhancing the SSGNs' SOF capabilities. During conversion, each SSGN received the Common Submarine Radio Room and two High-Data-Rate antennas for significantly enhanced communication capabilities. These additions allow each SSGN to serve as a forward-deployed, clandestine Small Combatant Joint Command Center.

Ship Type	Class	No.	Warfare Missions	Equipment
SSBN ballistic missile	OHIO 18,700 tons 560 ft 42 ft beam 20+ kts 155 crew	14	Strategic Deterrence, USW, SUW, STW	24 tubes Trident missiles, 4 torpedo tubes
SSGN guided missile	OHIO 18,700 tons 560 ft 42 ft beam 20+ kts 155 crew	4	USW, SUW, STW, SOF support	154 Vertical Launch tubes for Tomahawk four torpedo tubes
SSN-688 attack	LOS ANGELES 6,900 tons 360 ft 33 ft beam 20+ kts 133 crew	43 of 55 built remain in service	USW, ISR, SUW, STW, MIW, SOF	Tomahawk, MK48 torpedoes MK 37 mines
SSN-774 attack	VIRGINIA 7,800 tons 377 ft 34 ft beam 25+ kts 113 crew	7 of 30 built	USW, ISR, SUW, STW, MIW, SOF	Tomahawk, MK48 torpedoes, mines, unmanned undersea vehicles
SSN-21	SEAWOLF 9,150 tons 353 ft 40 ft beam 25+ kts 133 crew	3	USW, ISR, SUW, STW, MIW	Tomahawk, MK48 torpedoes, mines

Amphibious Warfare

Amphibious warships provide flexible and multi-function support to embarked Marines and support the Marine Corps tenets of Operational Maneuver From the Sea (OMFTS) and Ship to Objective Maneuver (STOM). Much more than just troop transports, they must be able to sail in harm's way and provide a rapid buildup of combat power ashore – via both air and surface – in the face of opposition. This requirement necessitates inherent survivability and self-defense capabilities as well as the ability to seamlessly conduct Task Force operations. Because of their inherent capabilities, these ships have been and will continue to be called upon to also support humanitarian and other contingency missions on short notice.

The *Tarawa* class LHAs and Wasp-class LHDs provide the Marine Corps with a means of ship-to-shore movement by helicopter in addition to movement by landing craft. LHDs/LHAs have extensive storage capacity and can accommodate Landing Craft Utility (LCU) and Landing Craft, Air Cushion (LCAC) boats. They embark, maintain and operate various helos (CH-46, CH-53, AH-1, UH-1, MH-60S), AV-8s and MV-22s from their aviation space with a typical combat embarkation being 31 aircraft. They carry large

numbers of troops (1000+) and robust C2 spaces for the embarked Navy and Marine command elements. They also have large hospital capability.

The versatile *Austin* class LPDs provide substantial amphibious lift for Marine troops, and their vehicles and cargo. Additionally, they serve as the secondary aviation platform for the ESG. As the new *San Antonio* class LPDs enter service, *Austin* class LPDs will be decommissioned. The ships of the LPD-17 class are a key element of the Navy's seabase transformation. Collectively, these ships functionally replace over 41 ships (LPD-4, LSD-36, LKA-113, and LST-1179 classes of amphibious ships) providing the Navy and Marine Corps with modern, seabased platforms that are networked, survivable, and built to operate with 21st century transformational platforms, such as the MV-22 *Osprey* and future means by which Marines are delivered ashore.

Dock Landing Ships support amphibious operations including landings via Landing Craft Air Cushion (LCAC), conventional landing craft and helicopters, onto hostile shores. These ships transport and launch amphibious craft and vehicles with their crews and embarked personnel in amphibious assault operations. LSD-41 was designed specifically to operate LCAC vessels. It has the largest capacity for these landing craft (four) of any U.S. Navy amphibious platform. It will also provide docking and repair services for LCACs and for conventional landing craft. LSD-49 – 52 were modified as "Cargo Variant" in order to increase cargo capacity at the expense of landing craft space. The ships differ from LSD-41 – 48 by reducing its well deck size and associated LCAC embarkation capacity (from 4 to 2) in favor of additional cargo capacity.

Ship Type	Class	No.	Warfare Missions	Equipment
LHA Amphibious Assault Ship	TARAWA 39,300 tons 820 ft 106 ft beam 24 kts 950 crew 1900 troops	2	AMW	6' 25mm MG, CIWS, RAM, NSSMS, can take LCU or LCAC. 2 helos, 6 AV-8A. Good medical capability.
LHD Amphibious Assault Ship	WASP 40,500 tons 844 ft 106 ft beam 22+ kts 1015 crew 1875 troops	8	AMW	Same as Tarawa, can take AV-8B, three LCAC, Outstanding C5I for AMW. 8/50 cal gun.
LSD Dock Landing Ship (2 variants)	WHIDBEY ISLAND (8) & HARPERS FERRY (4) 15,800 tons 609 ft 84 ft beam 20+ kts 340 crew 340 troops	12	AMW	CIWS, helo capable, 4 LCAC capable, LCU also. HARPERS FERRY class carriers only 2 LCAC

LPD-4 Amphibious Transport Dock	AUSTIN 17,000 tons 570 ft 84 ft beam 21 kts 388 crew 900 troops	5	AMW	CIWS, 3"/50 cal guns, large flight deck, large troop capacity. All vessels 35+ years old.
LPD-17	SAN ANTONIO 24,900 tons 684 ft 105 ft beam 22+ kts 360 crew 699 troops	5	AMW	RAM, VLS, CIWS, 50 cal mg, 2 LCAC, 2 surgical operating rooms, large flight deck.
LCC Amphibious Command Ship	BLUE RIDGE 18,874 tons 634 ft 108 ft beam 23 kts 842 crew	2	AMW, C3	CIWS, command and control ship for amphib ops, fleet flagships (6th and 7th fleets), helo capable except for CH-53.
Note: LCAC - 200 tons, 88 ft, 47 ft beam, 70 ton max payload (1 x M1A1 tank); range 200 miles @ 40 kts (sea state and payload dependent)				

Military Sealift Command (MSC) support ships

Military Sealift Command provides critical support to the Fleet with government owned or contracted vessels manned by contracted or civil service mariners. Most ships have embarked military detachments. Government owned MSC ships are designated USNS while contracted vessels are referred to by the appropriate maritime designator (MV-motor vessel; SS-Steamship; etc). Regardless of their ownership status, all MSC ships fall under the OPCON of the appropriate military commander and they enjoy sovereign immunity under international law. MSC ships are organized in 4 major areas:

- **Naval Fleet Auxiliary Force (NFAF):** Supply lines to U.S. Navy ships at sea. NFAF ships provide underway replenishment (UNREP) services for fuel, food, ammunition, spare parts and other supplies to keep the U.S. Navy fleet at sea, on station and operating at the highest possible tempo. They also have specialized fleet ocean tugs, rescue-salvage ships, tenders and hospital ships to support fleet requirements.

- **Special Mission Ships (SMS):** Military Sealift Command's Special Mission Program has 25 ships that provide operating platforms and services for a wide variety of U.S. military and other U.S. government missions. Oceanographic and hydrographic surveys, underwater surveillance, missile tracking, acoustic surveys, command and control, and submarine and special warfare support are among the missions these ships carry out.

- **Prepositioning ships:** Military Sealift Command's Prepositioning Program is an essential element in the U.S. military's readiness strategy. Afloat prepositioning strategically places military equipment and supplies aboard ships located in key ocean areas to ensure rapid availability during a major theater war, a humanitarian operation or other contingency. MSC's 32 prepositioning ships support the Army, Navy, Air Force, Marine Corps and Defense Logistics Agency. More information on prepositioning ships is in the Strategic Lift chapter of this handbook.

- **Sealift program:** Military Sealift Command's Sealift Program provides high-quality, efficient and cost-effective ocean transportation for the DOD and other federal agencies during peacetime and war. More than 90 percent of U.S. war fighters' equipment and supplies travel by sea. The program manages a mix of government-owned and long-term-chartered dry cargo ships and tankers, as well as additional short-term or voyage-chartered ships. More information on the Sealift program is in the Strategic Lift chapter of this handbook.

Ship Type	Class	No.	Warfare Missions	Equipment
T-AOE Fast Combat Support Ship	SUPPLY 48,000 tons 752 ft 107 ft beam 29 kts 670 crew	4	Combat Logistics (ammo, supply, & petroleum products)	(2) MH-60 helos, 150,000 barrels oil, 1800 tons ammo, 400 tons dry stores, 250 tons frozen stores.
T-AE Ammunition Ship	KILUAUEA 18,088 tons 564 ft 81 ft beam 20 kts, 383 crew	4	Ammunition Replenishment	(2) MH-60 helos Deliver ammo via helo or ship-ship cable
T-AO Fleet Oiler	HENRY J. KAISER 42,000 tons 677 ft 97 ft beam 20 kts, 80 crew	14	Petroleum Product Replenishment	180,000 barrels fuel, 600 tons cargo ammo.
T-AFS Combat Stores Ship	MARS & SIRIUIS 48,000 tons 581 ft 79 ft beam 20 kts 110-130 crew	3	Combat Logistics (food, stores, & repair parts)	(2) MH-60 helos, 596,000 cubic feet of store space
T-AKE Dry Cargo & Ammunition Ship	LEWIS AND CLARK 41,000 tons 689 ft	6	Ammunition and stores replenishment Also Sea Basing	(2) MH-60 helos Delivery via helo or ship-ship cable 783,000 cubic feet of store

	105 ft beam 20 kts 130 crew			space plus 18,000 bbls of fuel.
T-AH Hospital Ship	69,000 tons 894 ft 105 ft beam 17 kts 63 civil service mariners 956 Naval medical staff 258 Naval support staff.	2 Normally kept in reduced operating status.	On-site emergency medical care	12 fully-equipped operating rooms, 1,000 bed hospital facility, digital radiological services, medical laboratory, pharmacy, optometry lab, CAT-scan, two oxygen producing plants. Helo deck capable of landing large military helicopters.
T-ATF Fleet Ocean Tugs	POWHATAN 2,300 tons 240 ft 42 ft beam 15 kts 20 crew	4	Towing, salvage, and recovery	Each vessel is equipped with a ten-ton capacity crane and a bollard pull of at least 54 tons. A deck grid is fitted aft which contains one-inch bolt receptacles spaced 24 inches apart. This allows for the bolting down of a wide variety of portable equipment. There are two fire pumps supplying three fire monitors with up to 2,200 gallons of foam per minute. A deep submergence module can be embarked to support naval salvage teams.
T-AGOS	VICTORIOUS & IMPECCABLE	5	Collect, process and transmit acoustic data to support undersea surveillance requirements	2 surveillance towed-array sensor system (SURTASS)
AS Submarine Tender	L.Y. SPEAR 23,000 tons 645 ft 85 ft beam 20 kts 1325 crew	2	Repair	Virtually no defensive systems, outstanding at sea repair capability. Can repair surface ships as well.
ARS* Rescue and Salvage Ship	SAFEGUARD 3282 tons 255 ft 51 ft beam 14 kts 100 crew	4	Rescue & Salvage	2-25mm guns, 7.5 ton and 40 ton booms, hauling force of 150 tons, conducts firefighting, diving, salvage, and towing operations
* One ship of the class has been transferred to MSC – USNS GRASP (T-ARS- 51).				

Mine Warfare
Naval mines are cheap, reliable and easy to obtain. The "weapons that wait" can pose a significant threat to any military operation where the transportation and the sustainability of forces in theater is accomplished by sea. Consider that 93% of provisions for all the armed services came via sea during Desert Shield/Storm. There are three types of mine countermeasures operations:

- **Mine hunting:** Methods to determine where (and just as important where not) mines are located. It is usually conducted by SONAR or visual means.

- **Minesweeping:** Active measures to counter mines. Mines may be: contact, acoustic, magnetic, seismic, pressure or a combination thereof. Sweeping may result in the neutralization of some mines but can be hazardous to platform and personnel.

- **Mine neutralization:** Active destruction of known mine(s). Accomplished by the AN/SLQ-48 submersible vehicle or Navy Mine Countermeasures Explosive Ordnance Disposal (EOD) teams.

A mine countermeasure operation is a slow and labor-intensive ordeal.

Ship Type	Class	No.	Warfare Missions	Equipment
MCM Mine Countermeasures Ship	AVENGER 1050 tons 224 ft 39 ft beam 13 kts 84 crew	14	MIW	Two .50 cal mg, AN/SLQ-48 vehicle, AN/SQQ-30 sonar, AN/SQQ-32. Mechanical, acoustic and influence sweep gear.

Naval Aviation
A critical piece to U.S. Navy power and capability, U.S. Naval aviation sets the U.S. apart from the rest of the world's navies. The Carrier Air Wing, with its strike fighters (F/A-18 variants Hornets/Super Hornets), electronic warfare (EA-6B Prowler / EA-18G Growler), airborne early warning (E-2C/D Hawkeye), Logistics (C-2 Greyhound) and rotary wing (SH/MH-60 variants) provide the U.S. with unmatched sea control and power projection capabilities all launched from sovereign U.S. territory in international waters.

Land based naval aviation aircraft fill critical maritime capability needs in the areas of intelligence, surveillance and reconnaissance (ISR), command and control (C2) and logistics. Maritime patrol aircraft (P-3C/AIP) provide long dwell surveillance with an onboard sensor and weapons suites designed to detect and destroy enemy ships and submarines. The P-3 AIP Orion, with its full motion video and real-time downlink to troops on the ground and make it a high demand asset in support of land forces. EP-3 Aires provides multi-intelligence collection capability. The P-3 airframe is reaching the end of its serviceable lifespan and will soon be replaced by the multi-mission maritime aircraft (MMA) designated P-8A Poseidon which is built on a commercial 737 airframe. Logistics needs are filled by a

variety of aircraft, but predominantly the C-40A (737 airframe). Almost all Navy air logistics capability is resident within the Navy reserve.

Aircraft Type	**Warfare Missions/Armament & Equipment**
FA-18A+/C Hornet FA-18 E/F Super Hornet	Missions STK, CAS, MIW, AAW, ASuW, Air Refueling Tanker (E/F only), SEAD Arms Sparrow, Sidewinder, Harpoon, HARM, AMRAAM, Maverick, SLAM ER, JDAM, JSOW, LGB, MK-80 series bombs, rockets, 20mm cannon, mines, cluster munitions ,ATFLIR, SHARP (E/F only), AESA radar (E/F only)
EA-18G Growler	Missions Suppression of Enemy Air Defense (SEAD), Electronic Attack Arms/Equip AMRAAM, HARM, ALQ-99 / ALQ-218 jamming /targeting system, AESA radar.
EA-6B Prowler	Missions SEAD, Electronic Attack Arms/Equip HARM, ALQ-99 jamming transmitter and receiver system
E-2C Hawkeye	Missions AEW, CCC Equip AN/APS 145 radar, Cooperative Engagement Capability (CEC)
C-2A Greyhound	Mission Carrier onboard delivery to/from carrier Arms None
SH-60B Seahawk LAMPS III	Missions ASW, SAR, ASuW, VERTREP Arms/Equip MK-46/54 torpedo, Hellfire Missile, sonobuoys, and doorgun, APS 124 search radar, FLIR, ALQ-142 ESM system
SH-60F Seahawk	Missions ASW, SAR, VERTREP, Arms/Equip MK-46/54 torpedo, doorgun, sonobuoys, dipping sonar
HH-60H Seahawk	Missions CSAR, VERTREP, ASuW, Naval Special Warfare (NSW) Arms/Equip FLIR, doorguns, Hellfire missile
MH-60R Seahawk	Missions ASW, ASuW, CSAR, VERTREP, NSW, LOG Arms/Equip Hellfire, Mk-54 torpedo, doorgun, surface search radar, FLIR, dipping sonar, sonobouys. ALQ-210 ESM system

MH-53E Sea Dragon	Mission Airborne mine countermeasure (AMCM), VERTREP, assault support Arms/Equip Mk 105 magnetic minesweeping sled, side scan sonar, mechanical minesweeping system, doorguns
MH-60S Seahawk	Missions ASuW, VERTREP, LOG, CSAR, MEDEVAC, SPECWAR, AMCM Arms/Equip FLIR, Hellfire, doorguns
P-3C Orion	Missions ASW, ASuW, MIW, C2W, CCC, ISR Arms MK-80 series bombs, Mk-54 torpedo, mines, rockets, Harpoon, Maverick, SLAM ER, sonobuoys, cluster munitions
EP-3E Aries II	Missions SIGINT, Multi-Intelligence Equip AN/APX-134 BIG LOOK radar, COMM / IFF / ESM / IR suites
P-8A Poseidon	Missions ASW, ASuW, MIW, C2W, CCC, ISR Arms Torpedoes, cruise missiles, bombs, mines
E-6B Mercury (Modified 707)	Missions Strategic airborne command post and communication relay platform Equip Automatic Launch Control System (ALCS)
C-9B Skytrain (mod DC-9) C-40A Clipper (Boeing 737-700) C-12 Huron (King Air) C-37A/B (Gulfstream V / Gulfstream550)	Mission Transport and worldwide airlift for senior leadership / dignitaries Arms: None

V. Navy Reserve

Mission

The mission of the Navy Reserve is to provide mission-capable units and individuals to the Navy, Marine Corps team throughout the full operations from peace to war.

The Navy Reserve consists of the Ready Reserve, the Standby Reserve and the Retired Reserve numbering over 690,000 men and women. The Ready Reserve consists of approximately 11,000 Full Time Support (FTS), 55,000 Selected Reserve (SELRES), and

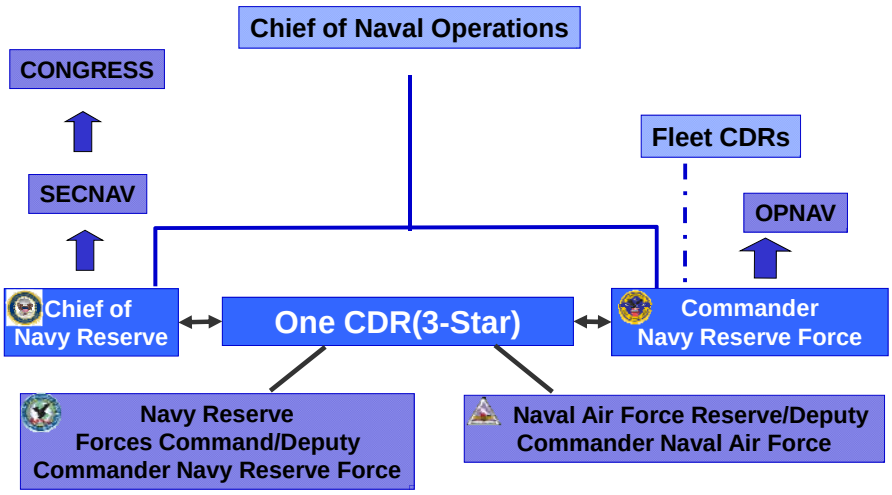
36,415 Individual Ready Reserve personnel. The Selected Reserve, or SELRES, is the Navy's primary source of immediate mobilization manpower and represents those Reservists who are paid, either as weekend drillers, or who serve as Full Time Support (FTS) on active duty status in the training and administration of the Navy Reserve Force program. The Navy Reserve represents 20% of total Navy assets and is a significant force multiplier necessary for the Navy to meet its global commitments.

Organization
The United States Navy Reserve is organized into two general types of units:

Commissioned Units
Reserve units, with organic equipment such as aviation squadrons, Naval Reserve Force (NRF) ships, cargo handling battalions, mobile inshore undersea warfare units, and mobile construction battalions. These units are tasked to deliver a complete operational entity to the operating force and are commanded by either Active or Reserve component officers and staffed primarily by Selected Reserve Personnel. Naval Reserve Force ships are under operational control of the Commanders -in-Chief, Atlantic or Pacific Fleet, while those designated as Reserve Frigate Training ships come under the operational control of Commander, Surface Group Six, who is assigned to Commander, Naval Reserve Force. Thirty two percent of all Selected Reserve personnel are assigned to commissioned units.

Augmentation Units
Augmentation units are units that augment active component units with trained personnel. Such units are tailored to augment designated ships, special warfare commands, intelligence staffs, etc. Their function is to allow for peak operations for an indefinite period of time. They also provide surge capability, and then sustain the high level of activity to support deployed forces.

Naval Reserve Organization



VI. Current Challenges

Foremost among the Navy's force development challenges is shipbuilding. The competing demands of continuous, distributed forward presence and episodic re-aggregation for major operations are the primary planning considerations influencing naval force structure. The current low rate of ship construction will constrain the future size of the fleet in the near term. The future fleet of 313 ships achieves the right balance in order to ensure expected missions are met but not overlapped. Fundamental to this future force is a "family" of ships with multi-mission capability, utilizing a modular and open-architecture system that provides flexibility and adaptability to fight in diverse environments against a variety of possible enemies. It also allows for more growth potential with less technical and fiscal risk. Shipbuilding is a long lead-time endeavor that is continually impacted by international events, revisions to national policy, fiscal considerations, ongoing operational experience and technological innovation.

Perhaps the biggest challenge the Navy faces is the balance between maintaining current operational readiness while developing and funding the initiatives to improve and ultimately replace the equipment we have in the fleet today. The fleet is aging and there is real and growing tension between maintaining near-term readiness and supporting future modernization and recapitalization.

U.S. ARMY[2]

I. Introduction

Mission

The Army exists to serve the American people, to protect vital national interests, and to fulfill national military responsibilities. Our mission is enduring: to provide necessary forces and capabilities to the Combatant Commanders in support of the National Security and Defense Strategies. The Army is also charged with providing logistics and support to enable the other Services to accomplish their missions. The Army organizes, trains, and equips Soldiers who, as vital members of their units, conduct prompt, sustained combat on land as well as stability operations, when required.

Title 10 USC

In general, the Army within the Department of the Army, includes land combat and service forces and such aviation and water transport as may be organic therein. It shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations on land. It is responsible for the preparation of land forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Army to meet the needs of war.

FM 1, The Army, June 2005

The Army is the primary landpower arm of our Nation's Armed Forces. As part of the joint force, the Army supports and defends America's Constitution and way of life against all enemies, foreign and domestic. The Army protects national security interests, including forces, possessions, citizens, allies, and friends. It prepares for and delivers decisive action in all operations. Above all, the Army provides combatant commands with versatile land forces ready to fight and win the Nation's wars.

The Army's contribution to joint operations is landpower. *Landpower* is the ability-by threat, force, or occupation-to promptly gain, sustain, and exploit control over land, resources, and people. Landpower includes the ability to:

- Impose the Nation's will on adversaries-by force if necessary-in diverse and complex terrain.
- Establish and maintain a stable environment that sets the conditions for a lasting peace.
- Address the consequences of catastrophic events-both natural and man-made-to restore infrastructure and reestablish basic civil services.
- Support and provide a base from which forces can influence and dominate the air and sea dimensions of the joint operational area.

[2] Originally published as "Army Employment Data", June 2011, U.S. Army War College, Carlisle Barracks, Pennsylvania revised by John A. Bonin, COL USA (Retired), Concepts and Doctrine Office. Minor edits and formatting changes to the text have been made for this Naval War College publication.

While the Army is an integral part of the joint force, the value of its contributions depends on its ability to exercise landpower. Ultimately, Army force's ability to control land resources, and people through a sustained presence makes permanent the advantages gained by joint forces.

U.S. Army Posture Statement 2011

In the past decade, America's Army has been challenged and prevailed in some of the most daunting tasks in the history of our military. Soldiers from the Active Army, Army National Guard and Army Reserve demonstrate indelible spirit, sacrifice and sheer determination in protecting our national interests and supporting our friends and allies around the world.

In the coming years, our top priorities will be to maintain our combat edge while we reconstitute the force for other missions and build resilience in our people. The Army has made significant progress in restoring balance through the four imperatives we identified in 2007- sustain, prepare, reset, and transform. We are on track to achieve a sustainable deployment tempo for our forces and restore balance to the Army beginning in FY 12. We successfully completed combat operations in Iraq, transitioning from Operation Iraqi Freedom to Operation New Dawn while executing one of the largest wartime retrogrades in the Nation's history. Operation New Dawn marks the beginning of a new mission for our Army while demonstrating our ongoing commitment to the government and people of Iraq. Concurrently, we surged Soldiers to Afghanistan in support of a new strategic direction in this vital theater. Even with all we have done, there is still much work to do.

The war is not over yet, and we remain in an era of persistent conflict facing an uncertain and increasingly complex strategic environment. Hybrid threats made up of conventional, irregular, criminal and terrorist capabilities will continue to test our forces.
These threats will avoid our strengths and attack us asymmetrically. Therefore, we must continue to organize our formations, update our doctrine and prepare our forces for the full spectrum of operations.

Additionally we remain aware of the difficult economic conditions at home. These conditions will drive our efforts to transform our generating force into an innovative and adaptive organization. We must adapt our institutions to effectively generate trained and ready forces for Full Spectrum Operations, while seeking ways to improve efficiency and reduce overhead expenditures that demonstrate wise stewardship of our taxpayers' dollars. With the continued support of the American people and Congress, we remain committed to the readiness and well being of our Soldiers, Civilians and Family members. As the Strength of the Nation, the American Soldier is the centerpiece of everything we do.

The Army is achieving its goals to restore balance in fiscal year 2011. We will be transitioning to a period where we must reconstitute the force for other missions; build resilience in our Soldiers, Families and Civilians and diligently maintain our combat edge. We are modernizing the force for the future by developing and fielding versatile, affordable, survivable and networked equipment to ensure Soldiers maintain a decisive advantage over any enemy they might face.

With the trust and confidence of the American public and the support of Congress with appropriate resources, America's Army will remain the Strength of the Nation.

II. Operating Structure

Operational Themes

An **operational theme** describes the character of the dominant major operation being conducted at any time within a land force commander's area of operations. The operational theme helps convey the nature of the major operation to the force to facilitate common understanding of how the commander broadly intends to operate. Army forces conduct major operations to defeat an enemy and to establish conditions necessary to achieve the national strategic end state. Conflict intensity varies over time and among locations; therefore, it is difficult to precisely describe a major operation's character. In fact, **the character of most major operations is likely to evolve**. All major operations comprise many smaller operations conducted simultaneously. These also may vary with time. Nevertheless, it is possible to establish a theme for each major operation, one that distinguishes it from other operations with different characteristics. Major combat operations, for instance, differ distinctly from counterinsurgency operations; both differ from peace operations. Different themes usually demand different approaches and force packages, although some activities are common to all.

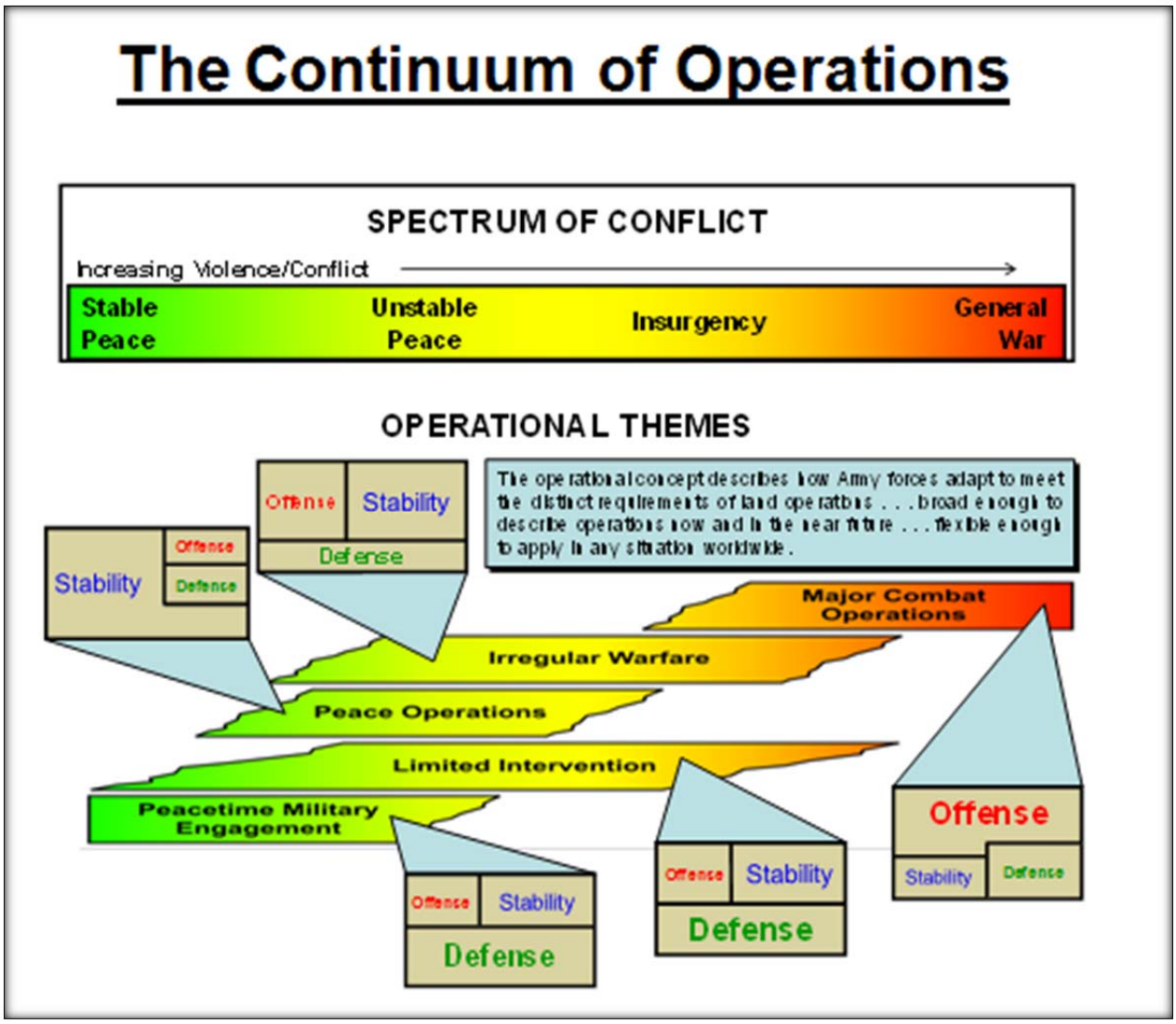
Operational Concept

The operational concept frames how Army forces, operating as part of a joint force, conduct operations. The Army's operational concept is **full spectrum operations:** Army forces combine offensive, defensive, and stability (or civil support if assisting domestically) operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results. They employ synchronized action—**lethal and nonlethal**—proportional to the mission and informed by a thorough understanding of all variables of the operational environment. Mission command that conveys intent and an appreciation of all aspects of the situation guides the adaptive use of Army forces.

Full spectrum operations require **continuous, simultaneous combinations** of offensive, defensive, and stability (or civil support) tasks. The operational concept addresses more than combat between armed opponents. Army forces conduct operations in the midst of populations. This requires Army forces to defeat the enemy and simultaneously shape civil conditions. Offensive and defensive tasks defeat enemy forces; stability tasks shape civil conditions.

Stability tasks typically dominate peace operations, peacetime military engagement, and some limited interventions. For example, foreign humanitarian assistance operations involve primarily stability tasks with minor defensive tasks and no offensive element. The emphasis on different elements of full spectrum operations changes with echelon, time, and location. In an operation dominated by stability, part of the force might be conducting simultaneous offensive and defensive tasks.

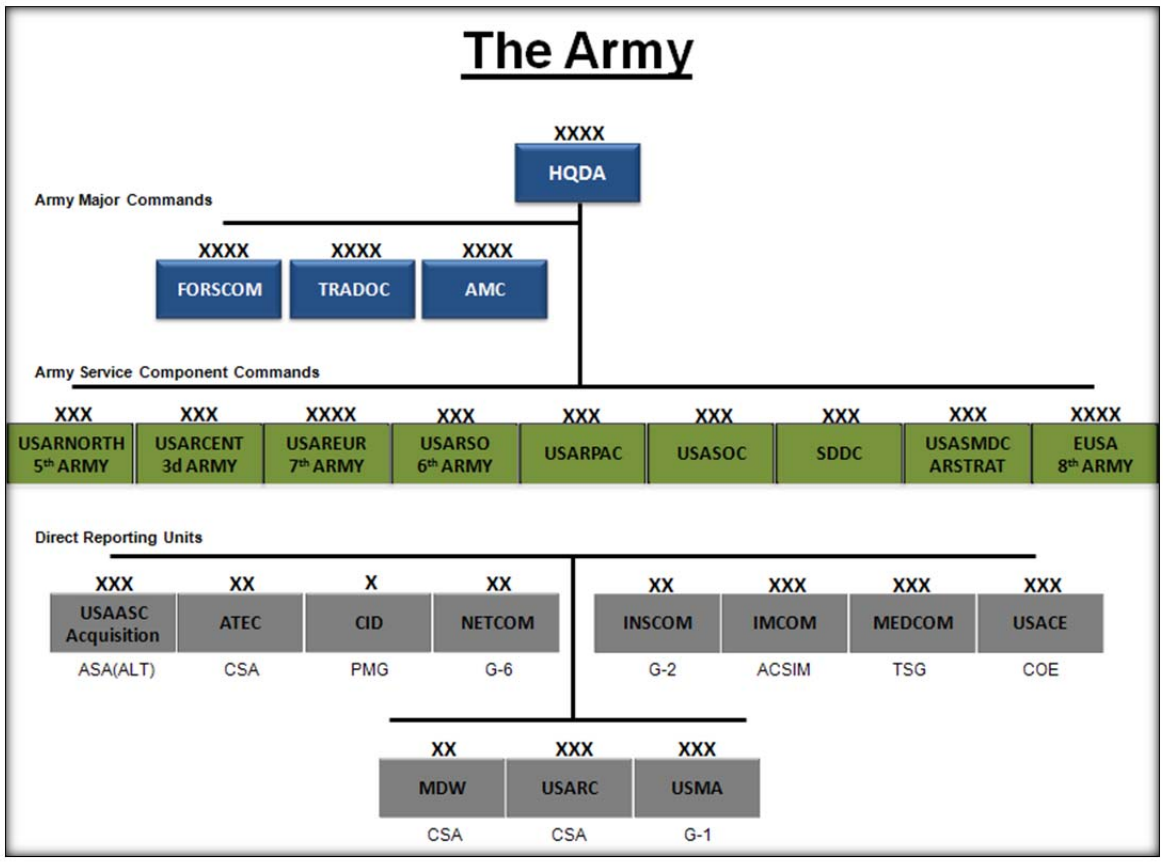
Within the United States and its territories, operations combine the elements of civil support (instead of stability), defense, and offense in support of civil authority. Army forces operate using mutually supporting lethal and nonlethal capabilities. In most domestic operations, Army forces perform only civil support tasks. However, an extreme emergency, such as an attack by a hostile foreign power, may require simultaneous combinations of offensive, defensive, and civil support tasks. Within the United States, civil support operations may be the only activity actually conducted. In short, no single element is always more important than the others. Rather, **simultaneous combinations** of the elements, which commanders constantly adapt to conditions, are the key to successful land operations.



III. Army Organization

There are two branches to the U.S. military chain of command. Subject to the authority, direction, and control of the Secretary of Defense and the provisions of Title 10 United States Code, the Department of the Army operates under administrative command of the Secretary of the Army with the advice of the Chief of Staff. In carrying out its functions as prescribed

in DOD Directive 5100.1, the U.S. Army reorganized in February 2006 into three Army Commands (TRADOC, FORSCOM, and AMC), nine other commands that are Army Service Component Commands (ASCC) of unified or subunified combatant commands, and eleven direct reporting units.



Army Service Component Command / Theater Army
The Theater Army is the Army Service Component Command (ASCC) of a geographic combatant command in a theater has both operational and support responsibilities.

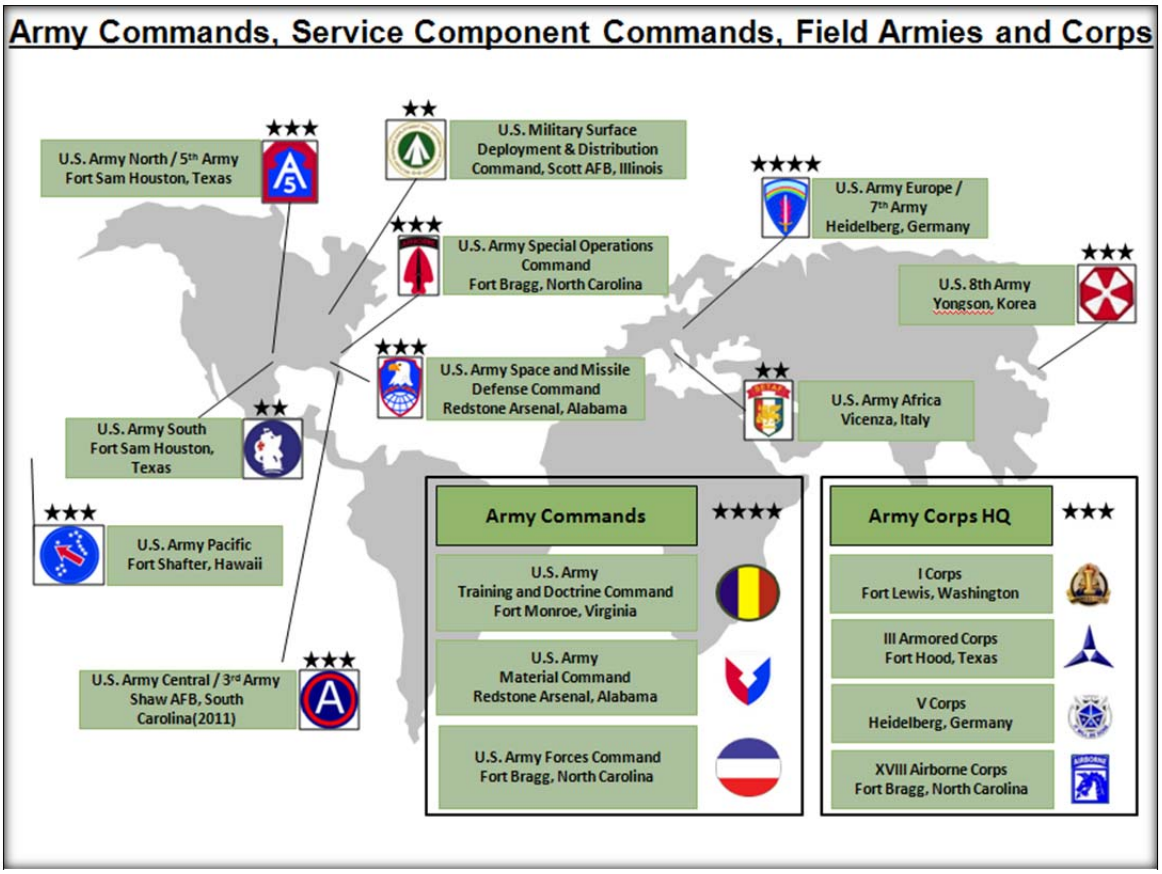
- The ASCC is responsible to a regional unified combatant commander (and selected subunified commanders) for the operational employment of assigned and attached Army forces.
- The ASCC support responsibility is to organize, equip, train, maintain, and logistically sustain Army forces.
- The organization of an ASCC is not fixed, but tailored to meet theater requirements.
- The commander of the ASCC (COMASCC) may be designated as the Joint or Coalition Forces Land Component Command (J/CFLCC).
- The COMASCC is normally assigned territorial control over the joint security area and may be designated the Joint Security Coordinator (JSC).
- Assigned and attached Army forces in a theater are placed under the operational control of the unified commander who normally exercises this authority through the COMASCC.

- The COMASCC is primarily concerned with long-range strategic and operational planning and prepares a land operations plan to support the unified command's theater campaign plan. The land operations plan is interdependent and requires detailed coordination with the plans of other Service components.
- Maneuver of large land-force formations by the COMASCC emphasizes offensive operations involving deep attack into the enemy rear or along his vulnerable flanks. Defensive and retrograde operations are conducted to protect critical areas, forces and resources, and as economy-of-force operations
- The COMASCC may be required to provide Army support to other services under Executive Agent Responsibilities as directed by the CCDR.
- During Desert Shield/Desert Storm, 3rd Army/ARCENT totaled over 300,000 Army personnel, of which some 38,000 were in the Support Command and over 33,000 in Echelon Above Corps (EAC) troops for a seven division force. This resulted in a "divisional slice" of some 45,000. Of this total, 37,692 were ARNG, and 35,158 were USAR.
- For Operation IRAQI FREEDOM in 2003, ARCENT served as the CFLCC with over 200,000 USA, 62,000 USMC and some 26,000 coalition forces. Of these 56,000 were EAC troops.
- There are currently six Theater Armies/ASCCs: USARPAC, USAREUR/ 7th Army, USARSO/ 6th Army, 3d Army/ARCENT, and US Army North & 5th Army all being reorganized under TOE 51600G; and 8th Army retained temporarily under the legacy TOE 51001.

The theater army will be the theater-level headquarters for each CCDR. The theater army consolidates most functions performed by current Corps and Army Service Component Command (ASCC) into a single operational echelon. The theater army commander performs the administrative control (ADCON) functions and tasks of the Army force (ARFOR) commander when the theater army is under combatant command (command authority) (COCOM) of a CCDR. It supports Army, joint, and multinational forces deployed to JOAs the CCDR establishes. In major combat operations, where the CCDR is the JFC, the theater army commander may become the joint force land component commander (JFLCC) and exercise operational control over committed land forces. When required for smaller contingencies, the theater army can provide a JTF-capable headquarters to control forces within a JOA.

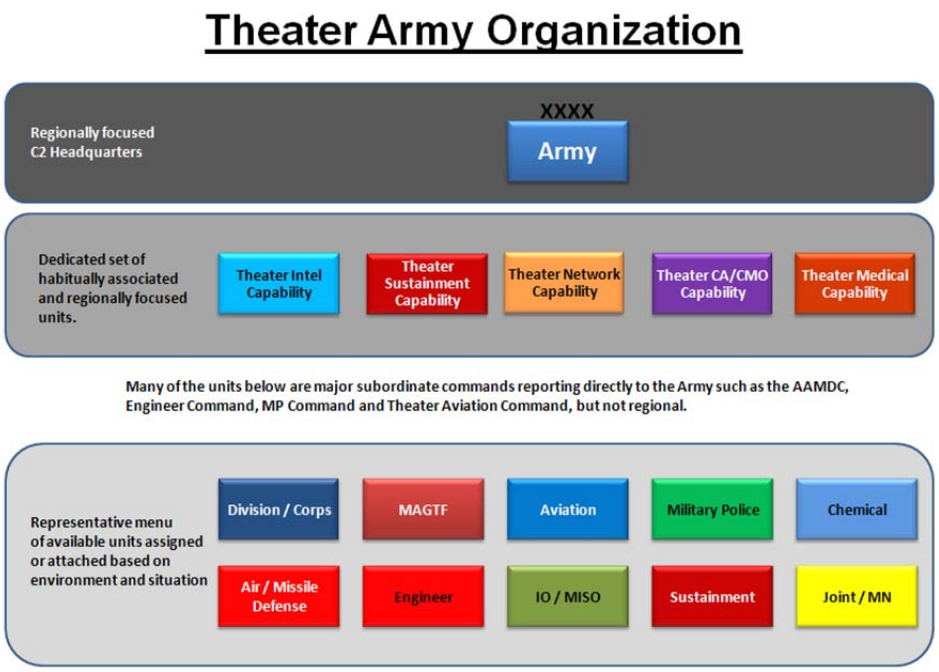
Army Service Components

U.S. Unified Commands and Army Components. Most Unified Commands consist of Army, Navy, Air Force, and Marine Corps components. The Army HQs assigned as the ASCC of its respective Unified Command are shown below. Note that Eighth US Army is the ASCC for United States Forces Korea, a sub-unified command. The US Army Strategic Command is an element of the US Army Space and Missile Defense Command as well as being the Army component of the US Strategic Command (now also responsible for space). These HQs are trained and equipped to support combatant command warfighting missions.



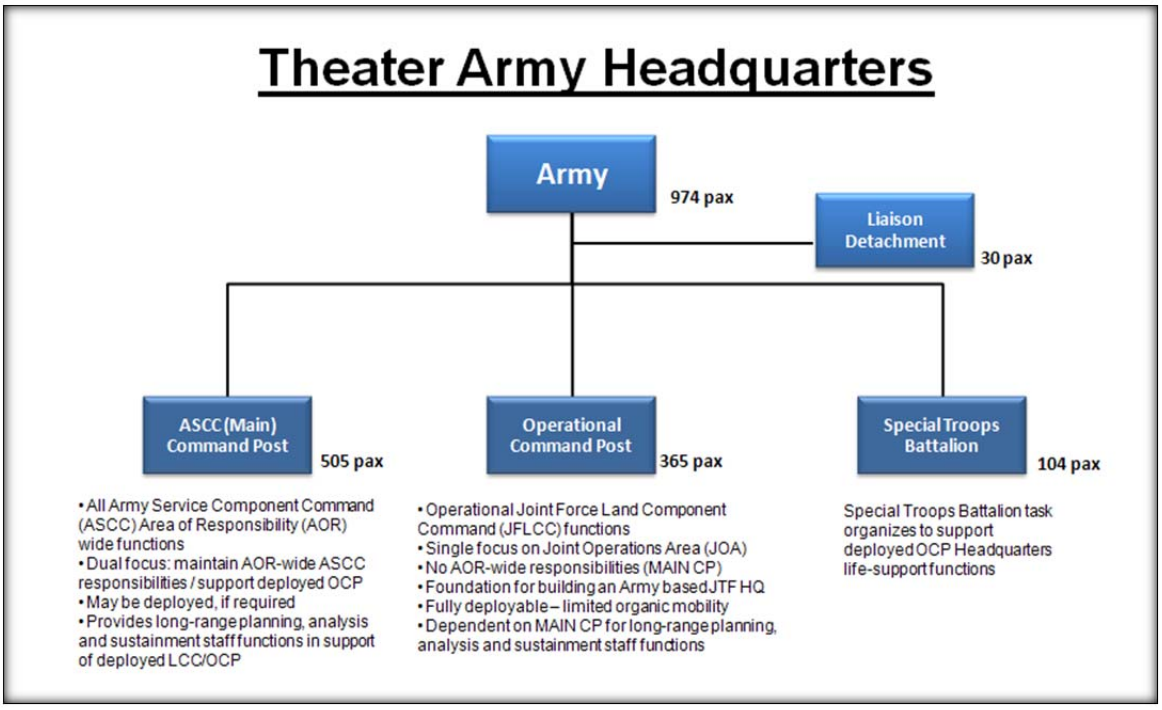
Theater Army Organization

The CCDR will tailor the theater army to meet the needs of joint forces in the theater. The theater army structure provides the commander with flexibility to adapt the command and control system to meet requirements. Each theater army will have a headquarters with deployable command posts and will be assigned a mix of forces to support the theater. While the type and size of the forces may vary considerably between combatant commands, the theater army normally controls theater sustainment, signal (network operations—NETOPS), intelligence, medical, and civil affairs capabilities. These subordinate elements may range in size from a brigade to a full theater command, depending on theater requirements. As the ASCC, the theater army commander exercises ADCON of all Army forces in the AOR. The ASCC also integrates Army forces into the execution of regional security cooperation plans and provides Army support to joint forces, interagency elements, and multinational forces, as directed by the CCDR. For major combat operations or theater war, the theater Army may provide the JFLCC headquarters. At the same time, the theater army will continue to perform the ASCC functions.



Characteristics of the Theater Army are as follows:

- Army Service Component Commander (ASCC) for their respective GCC.
- Provides Army support to Joint, Service, Multinational and Interagency.
- Executes most Administrative Control responsibilities.
- Can serve as a Joint Task Force (JTF) Headquarters with augmentation.
- Can serve as the Joint Force Land Component Commander for major combat operations where the CCDR is the Joint Force Commander (JFC).
- Each tailored to the Geographic Combatant Commander's Area of Responsibility.

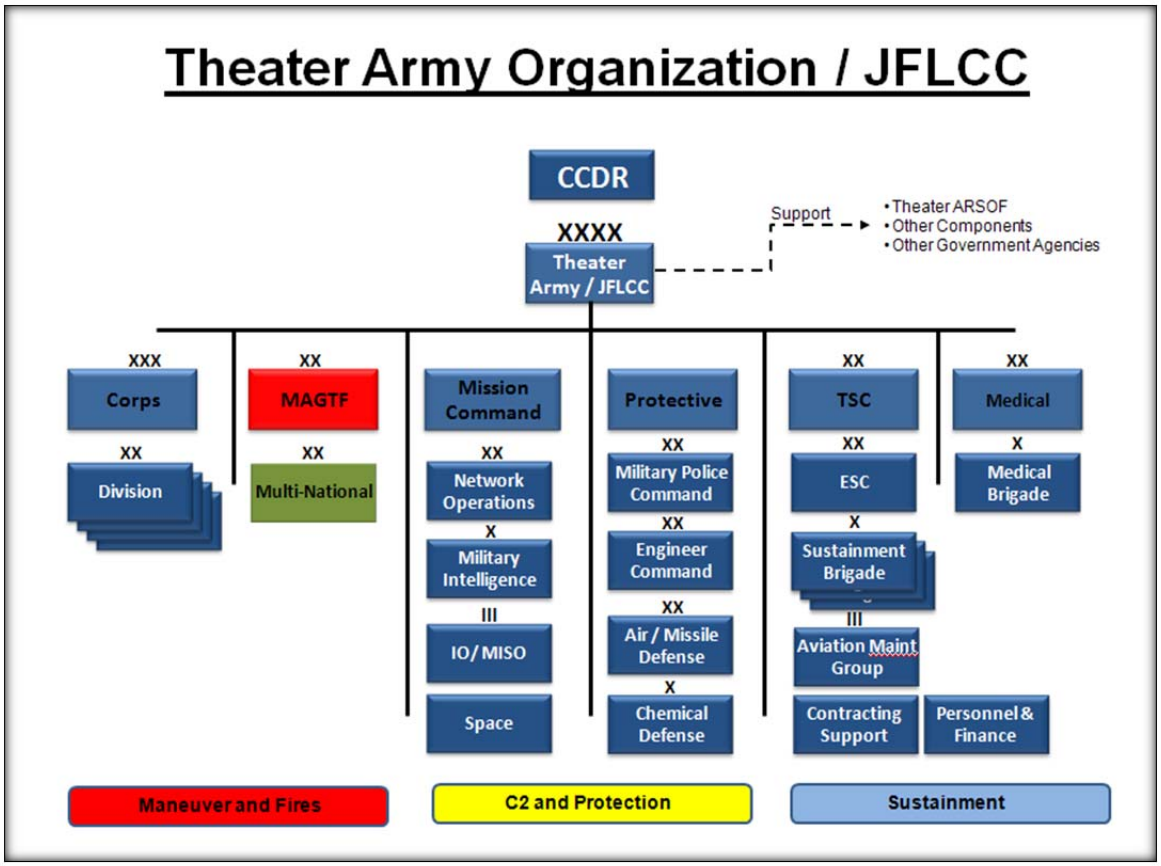


The Theater army is an integrated, functionally organized land force headquarters. Three broad design concepts underlie the Army organization:

- **Regionally focused, globally networked organization.** The theater army is not "pooled" headquarters. It remains the senior Army headquarters for the theater and does not deploy to another theater.

- **Expeditionary Army and Joint Operations.** Second, the theater army design recognizes that the full capability required for protracted major combat operations is too expensive to maintain full capability in every AOR on a standing basis. However, the theater army design does provide enough capability to enable the initial phase of an operation, while providing a flexible platform for Army and joint augmentation in the event of expansion to a major campaign. Key also is that the theater army is not just a supporting headquarters, but is also capable of complex operations, and fully capable of serving as a JTF for lesser contingencies, or the JFLCC for CCDR – level major operations.

- **Regional Army Support and ADCON.** Third, the theater army must provide administrative control (ADCON) over all Army forces assigned to the theater and control Army support to joint, interagency, and multinational elements as directed by the CCDR. The latter is a continuous task performed by the Army, regardless of whether it is also controlling land forces in a major operation.



IV. Army Commands

U.S. Army Training and Doctrine Command (TRADOC)
Headquartered at Fort Monroe, Virginia TRADOC recruits, trains and educates the Army's soldiers; develops leaders; supports training in units; develops doctrine; establishes standards; and builds the future Army. TRADOC's major subordinate units include US Army Accessions Command, headquartered at Fort Monroe; Combined Arms Command (CAC), headquartered at Fort Leavenworth; Combined Arms Support Command (CASCOM), headquartered at Fort Lee; the TRADOC Analysis Center (TRAC) at Fort Leavenworth; and the Army Requirements and Capabilities Integration Center at Fort Monroe. Additionally, TRADOC operates 33 schools on 16 installations, including, among others, 17 branch schools and centers, the Army Logistics Management College; the Army Management Staff College, the Command and General Staff College, and the Army War College.

U. S. Army Material Command (AMC)
Headquartered at Fort Belvoir, Virginia AMC provides technology, acquisition support, and logistics to the Army, the other services, and U.S. allies. "If a soldier shoots it, drives it, flies it, wears it, or eats it, AMC provides it." The command's missions range from research and development of weapon systems to maintenance and distribution of spare parts. AMC operates research, development, and engineering centers, the Army Research Laboratory, depots, arsenals, ammunition plants, and other facilities, and maintains the Army's

prepositioned stocks on land and afloat. The command is also the Department of Defense executive agent for chemical weapons and conventional ammunition. AMC operates facilities in 149 locations worldwide and has about 50,000 military and civilian employees. Major Subordinates include: Army Sustainment Command, Army Contracting Command, and the U.S. Army Surface Deployment and Distribution Command (USASDDC).

U.S. Army Forces Command (FORSCOM)

Mission

- Responsible for mobilization planning and combat readiness of assigned active Army and USAR units and training supervision of Army National Guard during peacetime.

Organization

- Army Command and Army Service Component of U.S. Joint Forces Command FORSCOM commands assigned active Army units in CONUS and, when federalized, Army National Guard units. Commands U.S. Army Reserve Command and Army Reserve units in CONUS, Puerto Rico, and Virgin Islands.

The major subordinate commands of FORSCOM are: 1st Army (Training, Readiness, and Mobilization Command-TRMCOM), three Army corps, and eight Army Divisions. Major subordinate commands and locations:

TRMCOM Corps

First Army	Fort Gillem, GA
I	Fort Lewis, WA
III	Fort Hood, TX
XVIII	Fort Bragg, NC

Other Commands

32d Air and Missile Defense Command	Ft. Bliss, TX
20th Support Command (CBRNE)	Aberdeen Proving Ground, MD

Other Army Service Component Commands

U.S. Army Europe (USAREUR)/Seventh US Army

Mission

- Responsible for defense of U.S. interests in Europe and Africa.
- Maintain a combat ready force to support NATO commitments.
- Maintain trained and ready forces for deployment on contingency operations in support of US European Command (EUCOM) and U.S. Africa Command (AFRICOM) missions.

Organization

- Army Service Component Command for EUCOM and AFRICOM.
- Commands US Army units in Germany, Italy, England, and the Netherlands.

- Currently includes V Corps, 1st Armored Division (-), Southern European Task Force (with the173d Airborne Brigade (Separate)), 170th Armored Brigade, 2d Stryker Cavalry Regiment, 21st Theater Support Command, and 5th Signal Command and other units.

U.S. Army Pacific (USARPAC)

Mission

- Serve as the Army Service Component Command to Combatant Commander, U.S. Pacific Command (USPACOM) less the geographical area of Korea.
- Command and support assigned and attached active Army and USAR units, installations, and activities in Alaska, Hawaii, Japan, and in possessions and trust territories administered by the USPACOM.
- USARPAC Commander has also been designated as commander JTF-Homeland Defense for all military installations and critical infrastructure throughout the Hawaii and U.S. territories in the Pacific.
- Oversee, evaluate, and support the Army National Guard in Hawaii, Alaska, and Guam.
- Maintain a trained and ready force for employment in the Pacific theater or worldwide.

Organization

- Subordinate Units: 25th Infantry Division; U.S. Army Alaska; U.S. Army Japan and I Corps (Forward); 8th Theater Sustainment Command, 94th Army Air and Missile Defense Command, 18th Medical Command;196th Infantry Brigade (Training Support Pacific); and 9th U. S. Army Regional Support Command (USAR).

Eighth US Army (EUSA)

Mission

- Provide forces to the Combined Forces Command/U.S. Forces Korea to deter aggression against the Republic of Korea (ROK) and, should deterrence fail, to defeat that aggression.

Organization

- Army Service component command of U.S. Forces Korea whose ground and aviation forces come under operational control of the Combined Forces Command in wartime.
- Major subordinate units: 2nd Infantry Division (-); 35th ADA Bde, and the 19th Support Command (Expeditionary).
- Components of the US Forces Korea which also includes U.S. Air Forces, Korea (7th Air Force), and US Naval Forces Korea.
- Command assigned USAR units.

U.S. Army South (USARSO)/Sixth Army

Mission

- Command and control Army Forces in the US Southern Command.
- Provide theater support for US Army Forces and Headquarters SOUTHCOM as directed by USCOMSOUTH.
- Provide support to JTF Bravo in Honduras and the Joint Detainee Operations Group at GITMO in Cuba.
- Plans, programs, and provides U.S. Army support for SOUTHCOM's regional security strategy.

Organization

- Multi-component Headquarters serving as the Army Service component of SOUTHCOM.
- Organized around major subordinate elements which consist of forward stationed aviation and signal units, as well as Army units in GITMO.
- USARSO HQ is at Ft Sam Houston, Texas.

U.S. Army North (ARNORTH)/ Fifth Army

Mission

- Command and control Army Forces for U.S. Northern Command (NORTHCOM).
- Responsible to NORTHCOM for planning the land defense of Continental United States (CONUS) and the combined Canada - United States defense of Canada as the Joint functional land component command of NORTHCOM.
- Provides support to civil authorities in domestic emergencies.
- Provides support to federal, state, and local law enforcers in Homeland Security.

Organization

- Multi-component Headquarters serving as the Army Service component of NORTHCOM.
- Organized around major subordinate elements which consist of a forward stationed staff in Colorado and Defense Coordination Officers in each FEMA Region.
- ARNORTH HQ/5th Army is at Ft Sam Houston, Texas.
- JTF-Civil Support and JTF-North are subordinated to ARNORTH by NORTHCOM.

U.S. Army Central Command (USARCENT)/ Third US Army

Mission

- Develop and coordinate requirements, plans and participation of US Forces in regional exercises and contingencies.
- Provide Command and Control of assigned and attached U.S. Army forces in the CENTCOM area.
- Be prepared to deploy worldwide in support of JCS contingencies.

Organization

- Designated U.S. Army Forces Central Command (ARCENT) as the Army Service component command of U.S. Central Command (CENTCOM).
- Under the combatant command (COCOM) of CENTCOM.
- Command and control of assigned and attached U.S. Army forces in wartime as in Operation Desert Storm.
- Permanent subordinates
    - 1st Support Command (Theater)-Ft. Bragg, NC
    - TF Sinai, ASG-Kuwait, and ASG-Qatar.
- Operational Headquarters.
- Multinational Corps Iraq (ARFOR-Iraq).
- Coalition Joint Task Force 101 (ARFOR-Afghanistan).

U.S. Army Strategic Command (ARSTRAT) and Space and Missile Defense Command (USASMDC)

Mission

- Command Defense Satellite Communications System Operation Centers and manage joint tactical use.
- Conduct planning as the "User" of Army Strategic Ballistic Missile Defense.
- Execute operational demonstrations of the Army Space Exploitation Demonstration Program.

Organization

- As a major subordinate command of USASMDC, the U.S. Army Space Command (USARSPACE) is the Army component of US Strategic Command (USSTRATCOM).
- Subordinate elements in Germany, Okinawa, Hawaii, California, Maryland, and Virginia.
- The 1st Space Brigade provides Army Space Support Teams, Space Electronic Warfare Detachments, and JTAGS Detachments to Army Service Components.
- The 100th National Missile Defense Brigade HQ (Army National Guard) in Colorado and the 49th Missile Defense Battalion at Ft Greely, Alaska for command and control of the Ground Based Mid-Course Defense (GMD) System with initial capability of ten missiles.

U.S. Army Special Operations Command (USASOC)

Mission

- Provide trained and ready Special Forces, Ranger, Special Operations Aviation, Psychological Operations and Civil Affairs Forces to Regional Combatant Commanders, Joint Task Force Commanders, and US Ambassadors and their country teams.

- Responsible for development of unique special operations doctrine, tactics, techniques, procedures, and materiel in coordination with SOCOM, TRADOC, and AMC.
- Responsible for coordinating and deployment of security assistance teams to support friendly nations.

Organization

- Army component command of US Special Operations Command (SOCOM) responsible for all continental US-based Army Special Operations Forces (Active, Army Reserve, and National Guard).
- Major subordinate commands: US Army John F. Kennedy Special Warfare Center and School; USA Special Forces Command, 95th Civil Affairs Brigade, 4th Psychological Operations Group, 160th Special Operations Aviation Regiment, 75th Ranger Regiment, and US Army Special Operations Sustainment Brigade.

U.S. Army Surface Deployment and Distribution Command (SDDC)

Mission

- Responsible for global traffic management, operation of worldwide water ports and Department of Defense transportation engineering.

Organization

- A jointly-staffed Army Service component command of the US Transportation Command (TRANSCOM) with its HQ at Alexandria, VA.
- SDDC is under the ADCON of AMC.
- Subordinate units:
    - 595th Transportation Group- Ash Shuaiba, Kuwait
    - 597th Transportation Group- Ft Eustis, VA
    - 98th Transportation Group-Rotterdam, NL
    - 599th Transportation Group-Hawaii
    - Six USAR Terminal Brigades and four USAR Deployment Support Brigades.

U.S. Army Direct Reporting Units

As part of the October 2007 reorganization, the Secretary of the Army designated several other Army activities as Direct Reporting Units. Three of these with significant subordinate units are:

Network Enterprise Technology Command (NETCOM)/9th Signal Command

Ft. Huachuca, AZ is a direct reporting unit to the Army CIO/G6 and is responsible for worldwide theater signal support and for two deployable brigades in the United States.

- 7th Signal Command-CONUS
    - 21st Theater Strategic Signal Brigade- Ft Detrick, MD
    - 93rd Signal Brigade-Ft Eustis, VA
    - 106th Signal Brigade-Ft Sam Houston, TX
- 5th Signal Command -Germany
    - 2nd Theater Strategic Signal Brigade

    - 7th Theater Tactical Signal Brigade
    - 1st Theater Tactical Signal Brigade-Korea
    - 516th Theater Strategic Signal Brigade-Hawaii
    - 160th Theater Strategic Signal Brigade-Kuwait
- 11th Theater Tactical Signal Bde – Ft. Huachuca, AZ
- 35th Theater Tactical Signal Bde –Ft. Gordon, GA

U.S. Army Intelligence and Security Command (INSCOM)
A direct reporting unit under the Army G2 with its HQ at Ft. Belvoir, VA., INSCOM provides national strategic and theater strategic intelligence support.
Its major units are:

- 1st Information Operations Command (Land)- Ft Belvoir, VA
- National Ground Intelligence Center
    - (2nd Intelligence Center)- Ft Belvoir, VA
- 66th Military Intelligence Brigade-Darmstadt, GE
- 116th Military Intelligence Group (SIGINT)- Ft Gordon, GA
- 470th Military Intelligence Brigade- San Antonio, TX
- 500th Military Intelligence Brigade- Hawaii
- 501st Military Intelligence Brigade- Seoul, ROK
- 513th Military Intelligence Brigade- Ft Gordon, GA
- 704th Military Intelligence Brigade- Ft Meade, MD
- 902nd Military Intelligence Group (CI)- Ft Meade, MD

US Army Reserve Command (USARC)
At the top of the US Army Reserve's chain of command is a three-star General with two distinct roles. The first is Chief, Army Reserve (CAR). The CAR reports to the Chief of Staff of the Army and represents the Army Reserve in policy and planning discussions with the Army, the Department of Defense and Congress. The CAR is responsible for all Army Reserve Soldiers, even those who report directly to the Army. The General's second role is Commanding General (CG) of the U.S. Army Reserve Command (USARC). The CG of USARC also reports to the CSA, but is responsible for the staffing, training and readiness of most Army Reserve units in the continental United States and Puerto Rico. In this role, the CG, USARC coordinates directly with Army Forces Command. The Chief, Army Reserve (CAR) has a staff of functional advisors who develop and execute Army Reserve plans, policies and programs, plus administer Army Reserve personnel, operations and funding. These advisors are part of OCAR, which is located in the Pentagon in Washington, DC. USARC commands all Army Reserve units and is currently located at Ft McPherson, GA. USARC is responsible for the staffing, training, management and deployment of USAR units to ensure their readiness for Army missions.

Army Level Commands/Brigades: Theater Enabling Capabilities
In the Modular Force, a mix of functional supporting brigades and units will be assigned to commands at the Army-level. For example, theater aviation brigades will be assigned to a Theater Aviation Command to provide requisite capabilities for theater troops, primarily fixed-wing, cargo, and MEDEVAC support. Sustainment brigades may be attached or OPCON to a division or corps, or may be retained under the Sustainment Command

(Theater) along with other theater-level QM, port opening, aviation maintenance, and AMC provided assets. Normally a theater army will be augmented by a theater-level Medical Deployment Support Command and several medical brigades.

For protective assets, the Army may allocate functional brigades from theater-level Engineer, MP, and Air and Missile Defense Commands to the division/corps to carry out a particular task or retained under the theater army to support the force as a whole. For example, in addition to a Maneuver Enhancement Brigade [MEB], a division might receive a military police brigade to control displaced civilian and handle detainees or an engineer brigade to provide additional engineering support. A MEB might also be attached directly to the theater army for duty as the Joint Security Coordinator of the joint security area (JSA). Army Air and Missile Defense Brigades will normally be retained at theater level as well as the forward HQ of the 20th CBRNE Command and EOD Groups and chemical defense brigades.

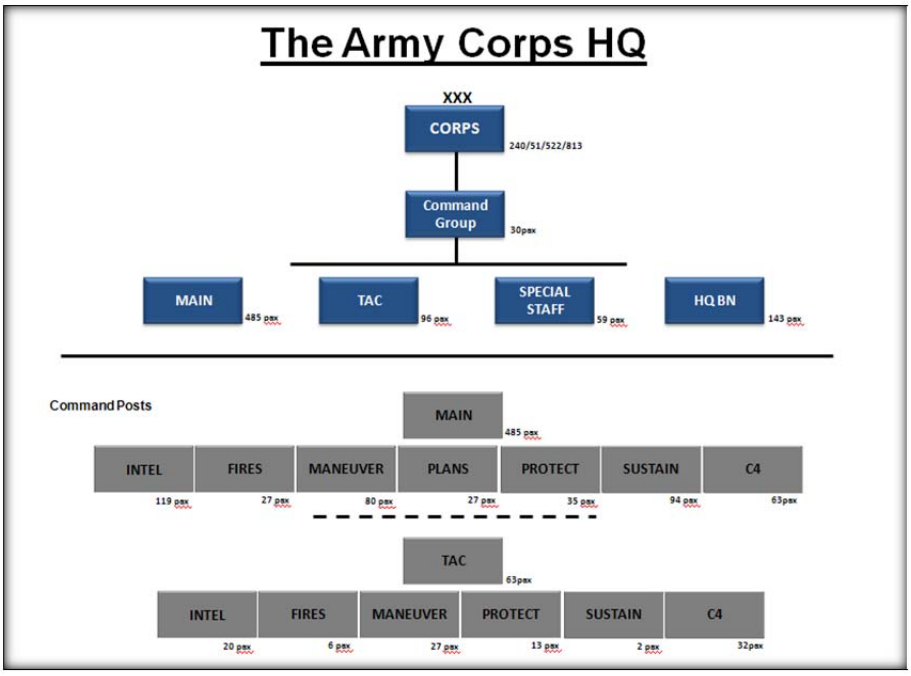
Command and control organizations for the ASCC include Civil Affairs units (command/brigades) and information superiority units such as a Signal Command (Theater) that provides network operations support, a theater MI Brigade, an Information Operations Group, and MISO units. Army Space teams, Army Liaison Teams, and a Battlefield Coordination Detachment also contribute to providing information superiority.

Army Corps

The modular corps does not have any "corps" troops habitually assigned or attached. It, like the modular division HQ, will share flexible combinations of multi-functional and single functional brigades as needed by the operational situation.

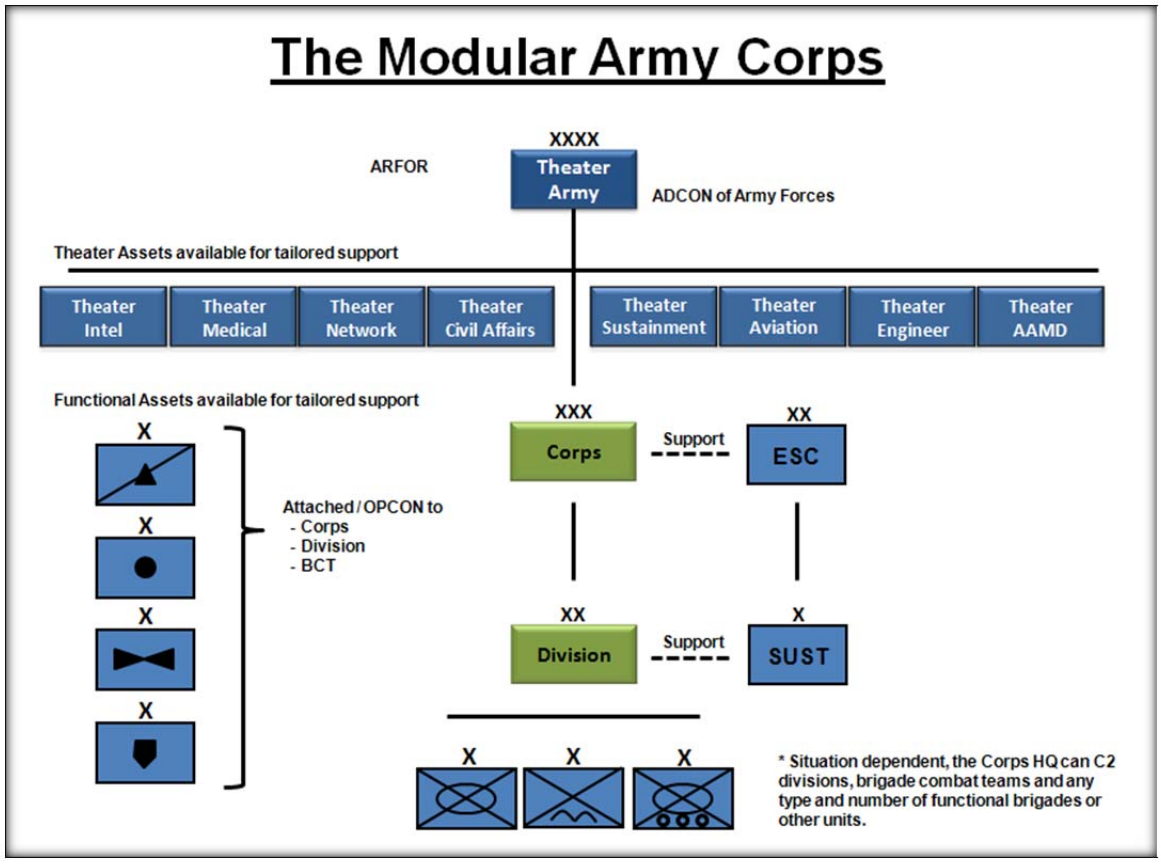
By their very nature, corps will always fight as part of a joint force, working in very close cooperation with the U.S. Air Force, Navy, and/or Marine Corps. Similarly, the nature of current world politics and U.S. treaty commitments will mean that corps will normally fight as part of multinational combined forces in any mid- to high-intensity theater. Corps may also serve as an intermediate Army HQ between division and theater army. In a contingency operation, a corps headquarters may function as the land component headquarters of a joint task force or as the joint task force headquarters. In such cases, the corps will have the responsibility for both operational (campaign) and tactical execution.

Corps size may vary with the task organization. Historically, for Operation Just Cause in Panama in 1989, XVIII Corps as JTF-South had only 12,000 troops, while for Desert Shield/Desert Storm, XVIII Corps serving as an Army intermediate HQ had some 118,000 troops. In the same operation, VII Corps had over 142,000 troops with four U.S. and one British division. For Operation IRAQI FREEDOM, V Corps had some 130,000 troops. There are currently four corps: I, III, V, and XVIII. Three of these will convert to new modular corps design being developed. V Corps is planned to become an operational command post of USAREUR/7th Army. The Modular Corps HQ will be organized as:



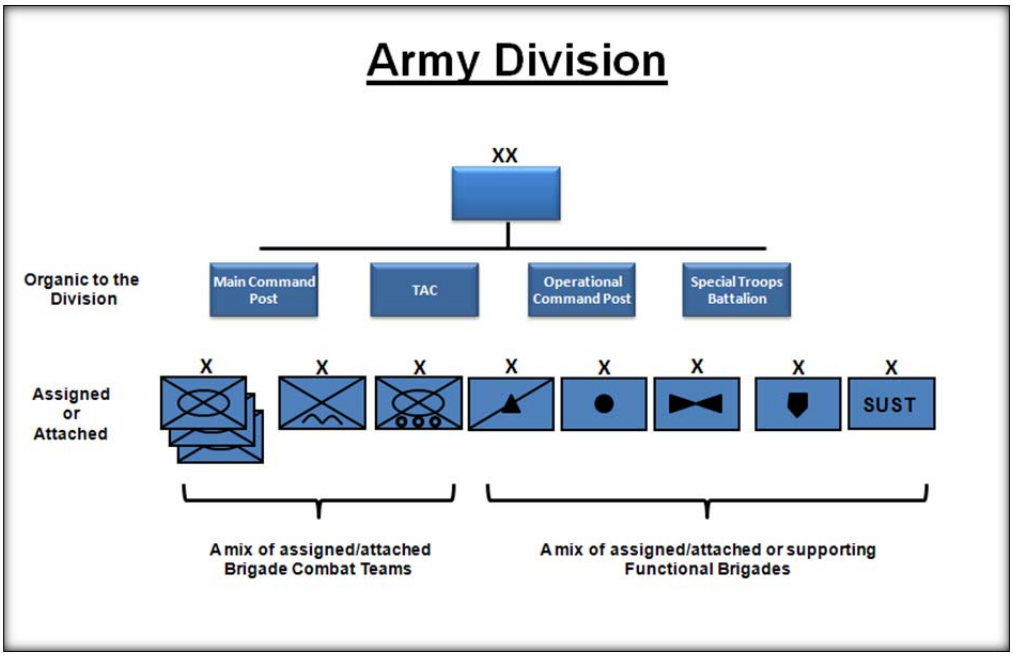
Characteristics of the Army Corps:

- Operational-level, Army command and control headquarters. In order of priority, it operates as a JTF, JFLCC, or Tactical HQ.
- Capable of serving as JTF or JFLCC HQ when properly augmented.
- Command and control of Army, Joint, and/or coalition forces.
- World-wide deployable to support CCDR requirements.
- May be employed in support of full spectrum operations (Small Scale Contingency through MCO).
- May provide training readiness oversight of CONUS-based Army forces and/or Army forces deployed within a specified JOA.



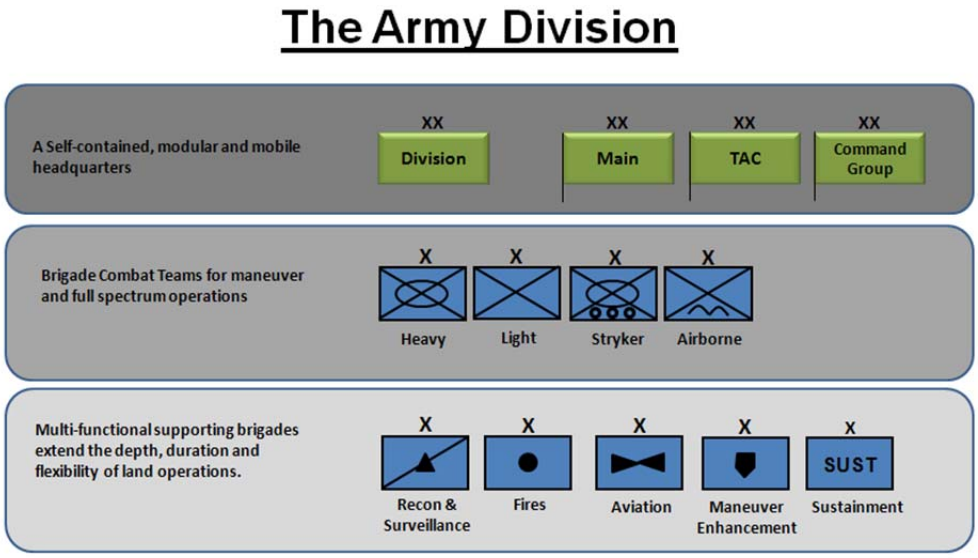
Divisions

Prior to Modularity, divisions were the Army's standard combined arms organizations tailored IAW conditions of METT-TC. They were capable of performing tactical missions and were largely self-sustaining. Divisions were the basic units of maneuver at the tactical level and performed major tactical operations for the corps. Divisions occasionally could function as operational-level headquarters, and could conduct sustained battles, engagements, and stability and reconstruction operations. The corps normally had two to five divisions of any type and combination. Armored, mechanized infantry, light infantry, airborne, air assault, and integrated divisions were in the U.S. Army force structure. Each type of division had its own unique capabilities and limitations. Under modularity, all division HQs are now self-contained HQs capable of commanding and controlling flexible combinations of all BCTs and support brigades.



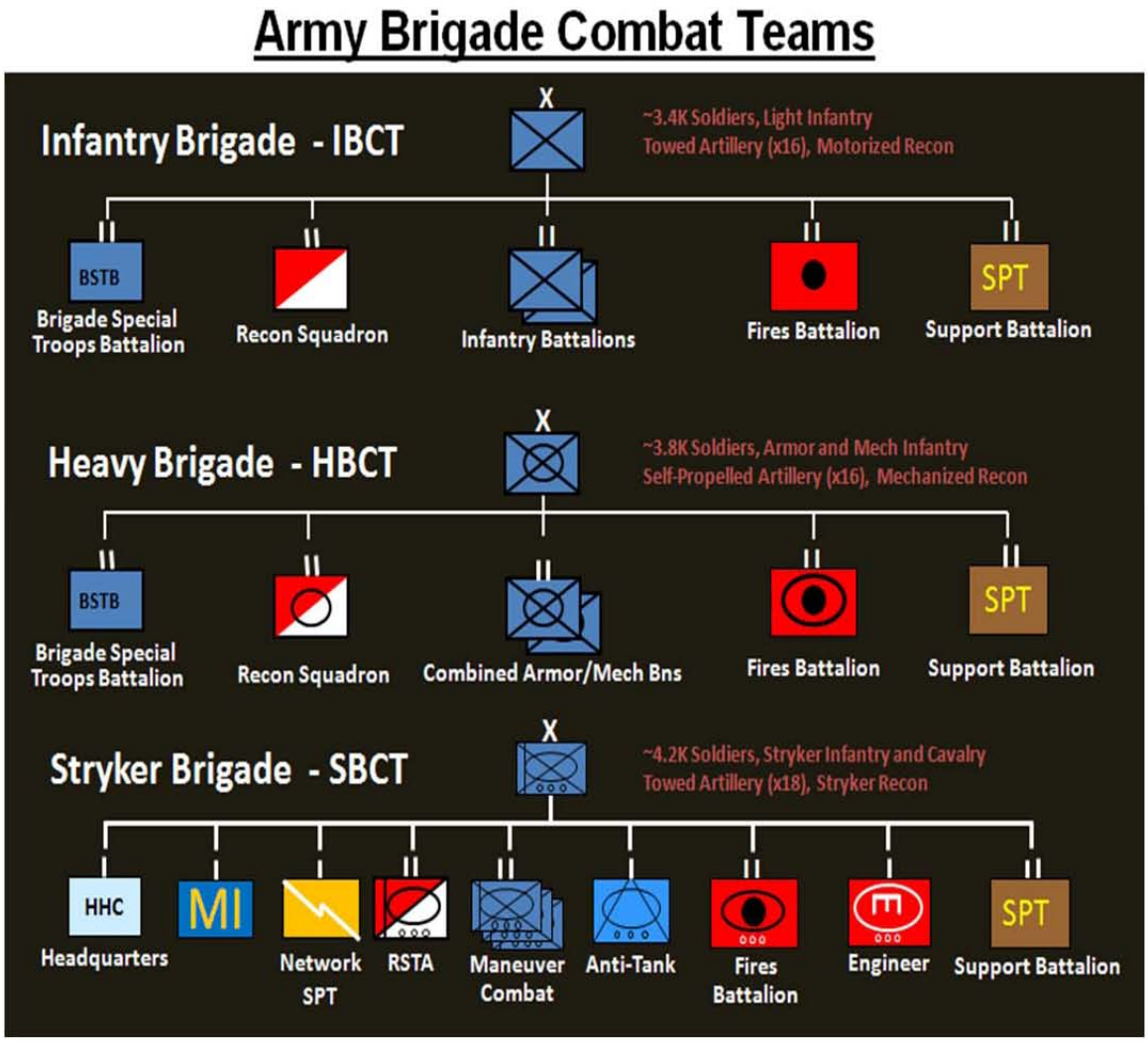
The Army Division will be composed of a tailored group of supporting brigades and maneuver BCTs for each specific mission. Characteristics of the Army Division are as follows:

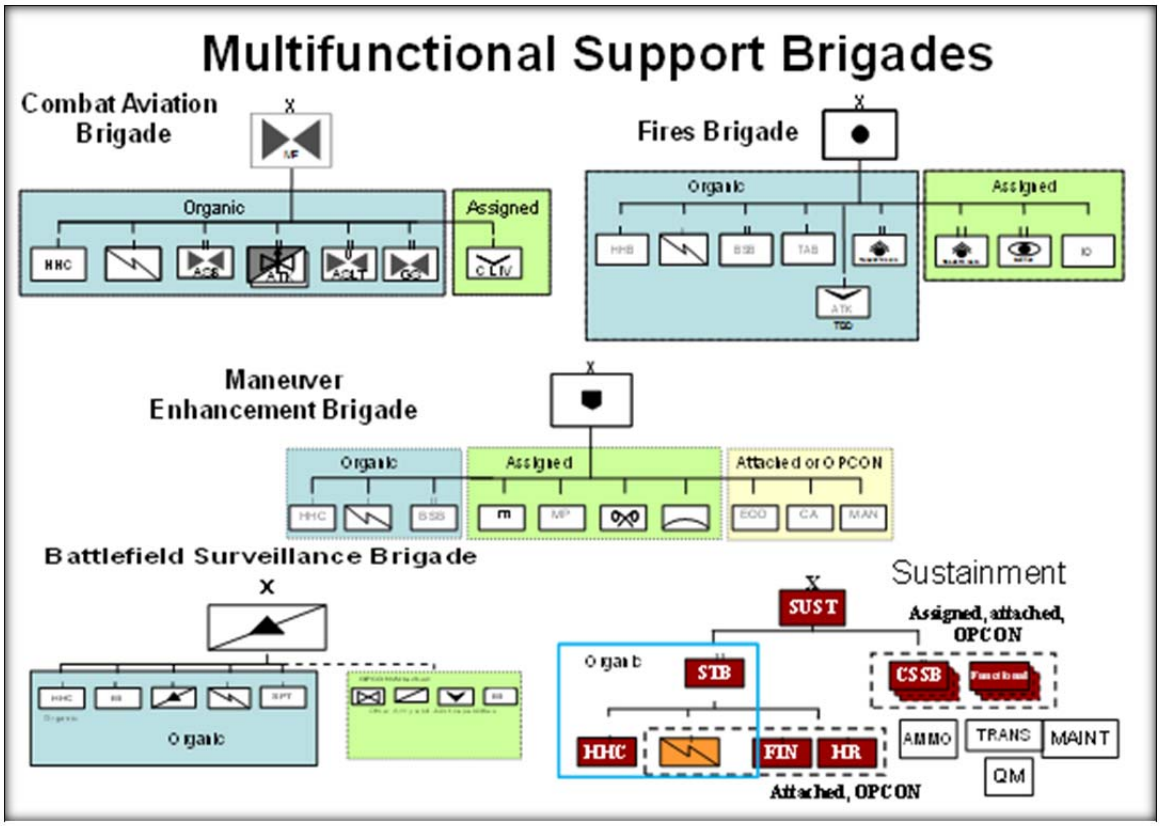
- In order of priority, operates as a Tactical HQ, ARFOR, JFLC, JTF.
- Employs land forces as part of a Joint, Interagency, Multinational force.
- Can serve as a Joint Task Force (JTF) Headquarters with augmentation.
- Can serve as the Joint Force Land Component Commander (JFLCC) with augmentation (Marine).
- Capable of rapid deployment with early entry command post capability.



Modular Brigade Combat Teams

As part of the Chief of Staff's initiatives, the Army will convert to a new modular BCT structure. All existing ground maneuver brigades (active and National Guard) except for the 3rd Armored Cavalry Regiment will eventually be converted to one of three designs: Heavy, Infantry, or Stryker. Shown below are the approved designs.

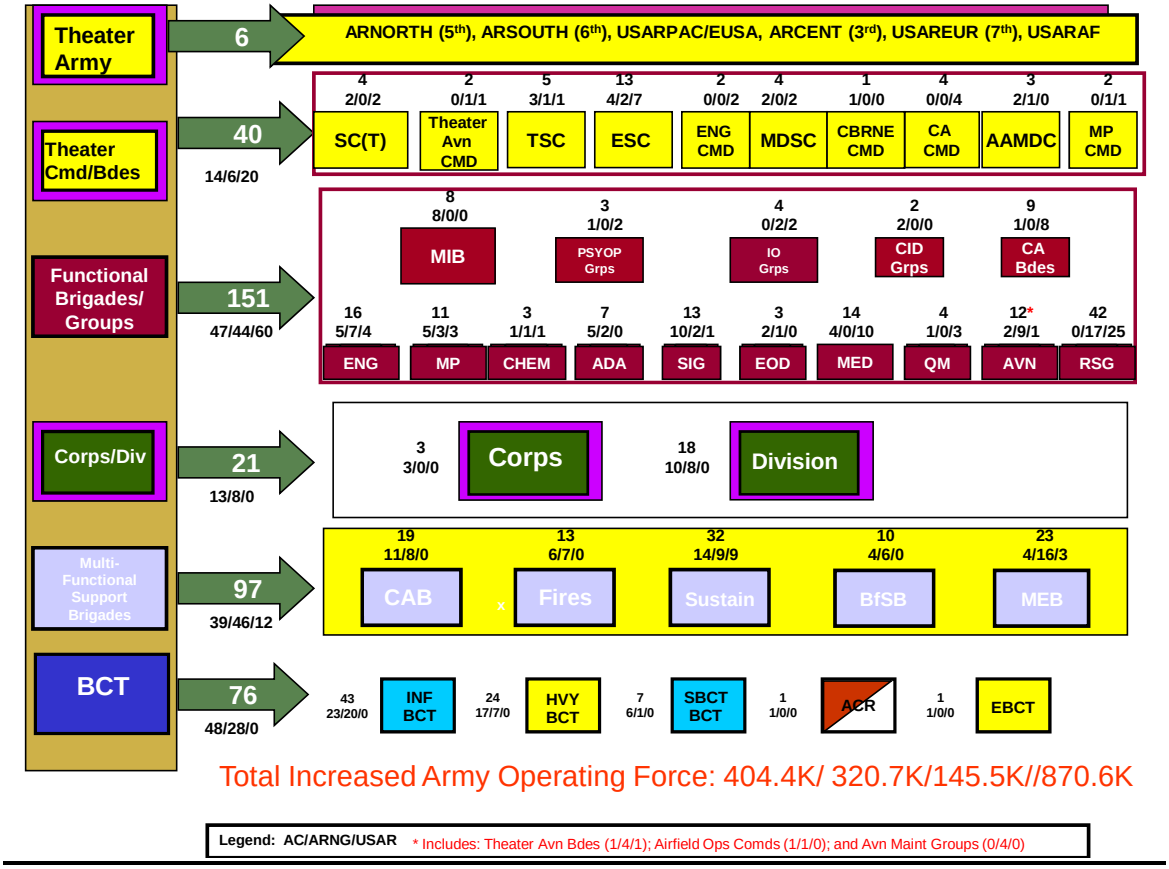




A mix of brigades supports the division and the BCTs. These brigades include a multifunctional aviation brigade, a battlefield surveillance brigade (BFSB), a Maneuver Enhancement Brigade (MEB), a fires brigade, and a sustainment brigade. These brigades will be organized as combined arms units intended to support BCTs and carry out specific tasks in support of echelons above BCT.

Unlike BCTs, multifunctional support brigades will not be fixed organizations. Support brigades are designed around a base of organic elements to which a mix of additional capabilities is added, based on the campaign or major operation. To make the brigades both tailorable and effective, the brigade headquarters includes the necessary expertise to control many different capabilities. Each brigade base also includes signal and sustainment capabilities.

In addition to multifunctional support brigades, a wide variety of functional brigades will remain in the Army structure primarily as theater-level troops, but also capable of employment under corps/divisions. See chart below for numbers of units by type in the Modular Force.



The composition and density of systems below represent a base structure comparison between a Marine Corps Expeditionary Force and an Army Division configured with three BCTs. A MEF is designed for short duration operations ashore to set conditions for sustained Army land combat operations. An Army Division is designed to conduct sustained land combat operations when resourced with theater enablers. A Marine Corps MEF requires Army combat logistics, signals and intelligence enabler capabilities to sustain enduring land combat operations.

Comparison of Notional MEF & Modular Division

Total Personnel

	MEF	Division (3 HBCT, 1 IBCT, 1 SBCT)
DISMOUNTED	50,000	36,500
RIFLE SQUAD MEMBERS	3,159	2,673

Major Equipment

	MEF	Division
MBT	58	174
AAV	233	0

LAV-25/STRYKER	60	196
MGS(105)	0	27
BFV	0	273
ASV/M1117	0	66
105T	0	16
155T	72	18
155SP	0	80
MLRS/HIMARS	18	54
TOW	112	21
JAVELIN	72	350
60mm MORTAR	81	12
81mm MORTAR	80	26
120mm MORTAR	0	72
4-6 MAN RECON TMS	27	29

Aviation/Missiles

	MEF	**Division**
AV-8	64	0
F-18A/C	48	0
F-18D	24	0
EA-6/EF-18G	6	0
KC-130	12	0
AH-64	0	48
AH-1	36	0
ARH-70/OH-58D	0	20
MV-22/CH-46 or CH-47	64 (MV-22/CH-46)	12 (CH-47)
CH-53	32	0
HH/UH-60	0	58
UH-1	18	0
SUASs	72	195
Pioneer/Shadow	12	49
Warrior/Predator	0	12
STINGER	45	0
SLAMRAM	0	12
PATRIOT	0	24
LAV-AD	8	0

Modular Force Command Relationships Down To BCT (AC only)

The following outlines the planned command relationships and stationing plan down to brigade-level by FY13. Army Commands and Army Service Component Commands are in bold.

US Army Forces Command (FORSCOM) - Ft Bragg, NC

I Corps- Ft Lewis, WA

- 3 Stryker Brigade Combat Teams (SBCT), 2d Infantry Division
- 17th Fires Bde
- 201st BFSB
- 2nd Sustainment Command (Expeditionary)
- 593rd Sust Bde
- 42nd MP Bde
- 555th Eng Bde
- 62nd Med Bde

III Corps- Ft Hood, TX

- 3d Armored Cavalry Regiment
- 504th BFSB
- 36th Eng Bde
- 89th MP Bde
- 1st Med Bde
- 13th Sustainment Command (Expeditionary)
- Sust Bde (TBD)

XVIII Airborne Corps- Ft Bragg, NC

- 525th BFSB
- 16th MP Bde
- 20th Eng Bde
- 44th Med Bde

1st Infantry Division- Ft Riley, KS

- 2 Heavy BCTs, 1 CAB(-) at Ft Riley, KS
- Infantry BCT at Ft Riley, KS
- 3rd Sustainment Command (Expeditionary) -Ft Knox, KY
- 1st Sust Bde at Ft Riley, KS
- 3rd Brigade (IBCT) at Ft Knox, KY.
- 75th Fires Bde at Ft Sill
- 4th MEB at Ft Leonard Wood, MO

1st Cavalry Division Ft Hood, TX

- 4 Heavy BCTs , 1 CAB
- 41st Fires Bde
- 4th Sustainment Bde

1st Armored Division- Ft Bliss, TX

- 2 Heavy BCTs, 2 IBCTs, 1 CAB
- 172nd HBCT to Bliss from Germany FY 12.
- 170th HBCT to WSMR from Germany FY13.
- 212th Fires Bde
- 15th Sust Bde
- Army Evaluation Task Force (5th BCT, 1st AD)

3rd Infantry Division- Ft Stewart, GA
- 2 Heavy BCTs, 2 IBCTs, 1 CAB at Ft. Stewart.
- 3d Brigade (HBCT) at Ft Benning, GA
- 3rd Sust Bde at Ft. Stewart.

4th Infantry Division -Ft Carson, CO
- 3 Heavy BCTs; 2 IBCTs
- 43rd Sust Bde
- 214th Fires Bde at Ft Sill, OK
- 1st Sq, 6th Cav (+), 1st CAB

10th Mountain Division- Ft Drum, NY
- 3 Infantry BCTs, 1 CAB at Ft Drum, NY
- 4th Brigade (IBCT) at Ft Polk, LA
- 10th Sust Bde
- 2nd MEB
- 7th Sust Bde at Ft Eustis, VA

82nd Airborne Division- Ft Bragg, NC
- 4 Airborne IBCTs, 1 CAB
- 82nd Sust Bde
- 18th Fires Bde

101st Airborne Division- Ft Campbell, KY
- 4 Infantry BCTs, 2 CABs at Ft Campbell
- 101st Sust Bde.
- 49th QM Grp at Ft Lee, VA

20th Support Command (CBRNE)- Aberdeen Proving Ground, MD
- 48th Chem Bde- Ft Hood, TX
- 52nd EOD Group-Ft Campbell, KY
- 71st EOD Group-Ft. Carson, CO

32nd Army Air and Missile Defense Command-Ft Bliss, TX
- 11th ADA Bde at Ft Bliss, TX
- 69th ADA Bde at Ft Hood, TX
- 108th ADA Bde at Ft Bragg, NC
- 31st ADA Bde at Ft Sill, OK

NTC - Ft Irwin, CA
- 11th Armored Cavalry Regiment (OPFOR) (HBCT [-])

JRTC- Ft Polk, LA
- 1st MEB
- 205th BfSB

Central Command

Army Forces Central Command (ARCENT) and 3rd Army- Shaw AFB, SC
1st Theater Sustainment Command-Ft Bragg, NC

European Command

U.S. Army Europe (USAREUR) and 7th Army-Germany
Eastern European Task Force
2d Cavalry Regiment (SBCT)-Germany.
170th and 172d HBCTs
173d Airborne Brigade-Italy/Germany
21st Theater Sustainment Command –Germany

- 16th Sust Bde

30th Medical Command
12th CAB
18th MP Bde
18th Eng Bde
357th ADA Detachment

Africa Command

U.S. Army Africa [Southern European Task Force (SETAF)]-Italy

Pacific Command

U.S. Army Pacific (USARPAC) & 8th US Army-Hawaii

I Corps (Fwd)/U.S. Army Japan –Japan

- 25th Infantry Division/U.S. Army Hawaii- Hawaii
    - 3rd Infantry Brigade (IBCT)- Hawaii
    - 2nd Infantry Brigade (SBCT)- Hawaii
    - CAB (-) Hawaii
- USARPAC (-)/U.S. Army Alaska
    - 1st Infantry Brigade, 25th (SBCT)
    - 4th Airborne Brigade, 25th (IBCT)
    - Aviation TF 49
    - 3rd MEB
- 8th Theater Sustainment Command- Hawaii
    - 45th Sust Bde- Hawaii
- 94th Army Air & Missile Defense Command- Hawaii
- 130th Engineer Brigade
- 8th MP Brigade (until FY 2013)
- 18th Medical Command- Hawaii

UN Command and US Forces Korea

- Operational Command Post, 8th US Army-Korea
    - 2nd Infantry Division (-)
        - 1st Brigade, 2nd Division
        - CAB

- 19th Sustainment Command (Expeditionary)
    - 501st Sust Bde
    - 35th ADA Brigade
    - 65th Medical Bde

For planning purposes, the following assumptions are reasonable. The Army currently has 45 active component Brigades and 28 Reserve Component Brigades. The Army will have 15 BCTs deployed at any given time, with five BCTs postured to deploy as to meet backfill rotational requirements. This leaves 25 BCTs available to meet strategic contingency requirements, however, the readiness levels of these BCTs varies significantly. A reasonable assumption is that two BCTs may be ready to deploy within 30 days and an additional three may deploy in 120 days.

Army Force Generation Model (ARFORGEN). At any given time, the Army will have one third of its forces deployed, one third being reconstituted and another third of its forces preparing to deploy. The Army currently has about 40% deployed with the remaining 60% in some state of reconstitution and readiness.

V. Army National Guard and Army Reserve

Organizations

The Army relies heavily on the Army National Guard and the Army Reserve. The Army in FY09 consists of 1,078,000 of which 530,000 are Regular Army (49%). The National Guard has 358,000 (33%) and the Army Reserve has 190,000 (18%). Of this total force, some 795,000 reside in the deployable (MTOE) field Army, 32,000 are in special operating forces, while over 188,000 are in general support (TDA) activities and some 63,000 active duty are in individual personnel accounts. The Army Reserve Components are planned to provide 37% of the BCTs, 54% of non-BCT artillery, 62% of the sustainment units above BCT, 69% of the protective, ISR, and C2 units above BCT; as well as 88% of the Civil Affairs Forces.

Roles, Missions, and Functions

Army National Guard

The Army National Guard has federal, state and community functions. It is directly accessible to the National Command Authority and is responsive to state governors as well. Its Federal function is to support U.S. national security objectives by providing trained and equipped units for prompt mobilization in the event of national emergency or war. Its state functions are to protect life and property and to preserve the peace, order and public safety. Its community function is to participate in local, state and national programs that add value to America. The Army National Guard is changing its focus from reinforcing a forward-deployed Army during global conflict to a force that is prepared for the complete operational spectrum. Federalized Army National Guard units pass immediately and directly under the command of the CONUS Army in the area in which their mobilization stations are located.

After Modular Force restructuring, the Army National Guard will consist of eight modular division headquarters and twenty-eight Brigade Combat Teams (BCTs) as well as six theater-

level commands and 78 support brigades/groups. These structure changes will result in the guard combat maneuver elements consisting of one SBCT, twenty IBCTs, and seven HBCTs.



Army Reserve

The Army Reserve is a federal force whose function is to provide trained units and qualified individuals for active duty in time of war or national emergency and at such other times as the national security requires. The Army Reserve has extensive civil affairs, engineer, medical, training, and transportation assets that are well suited for domestic and humanitarian missions. The Army Reserve's capability in its primary support function is enhanced by the civilian experience and unique skills of its soldiers. The Army Reserve is also converting to the Modular designs and developing 10 Army Reserve Expeditionary Packages (AREPs) as vertical slices of the USAR for contingency planning. The Army Reserve will provide some eighteen theater-level commands and 67 support brigades/groups.

VI. Army Logistical Data

Army Power Projection Program (AP3) Action Plan

The Army Power Projection Program (AP3) seeks the capabilities required to achieve a paradigm shift, where "deploy equals employ," to fully support the Combatant and Joint Force Commanders in a dynamic new strategic environment. In order to accomplish this goal, the AP3 has several elements:

- Improved sealift to include Theater support vessels and investigating Shallow draft, high speed ships.
- Improved Army infrastructure at selected bases.
- Enhanced deployment training and better automation.
- Continued R & D into heavy lift vertical takeoff and landing aircraft.
- Convert to modular designs and Army Prepositioned Stocks (APS) 2012 recommended endstate.

Army Prepositioned Stocks (APS) Program (FM 3-35.1)
APS constitutes one leg of the Strategic Mobility Triad. The primary purposes of APS are to reduce the initial amount of strategic lift required to support a predominately CONUS-based force projection Army, and to sustain the Soldier until sea lines of communication (SLOC) are established. Accordingly APS are located at several land based locations, as well as aboard ships, to quickly project power to contingency areas. The four categories of APS are:

- **Prepositioned Unit Sets.** Equipment, configured into unit sets (to include authorized stockage list [ASL], prescribed load list [PLL], and unit basic load [UBL]), is positioned ashore and afloat in order to reduce deployment response times by meeting the Army's Global Prepositioning Strategy requirements to provide simultaneous support to more than one contingency in more than one theater.

- **Operational Project Stocks.** Operational project (OPROJ) stocks are materiel above normal table of organization and equipment, table of distribution and allowances, and common table of allowance authorizations tailored to key strategic capabilities essential to the Army's ability to execute its force projection strategy. OPROJ stocks are designed to support one or more Army operations, plans or contingencies.

- **Army War Reserve Sustainment Stocks.** The Army procures sustainment stocks in peacetime to meet increased wartime requirements. They consist of major and secondary materiel designated to satisfy the Army's wartime sustainment requirements. They provide minimum essential support to combat operations and post-mobilization training beyond the capabilities of peacetime stocks, industry, and host nation support (HNS). Army War Reserve Sustainment stocks are prepositioned in or near a theater of operations to be used until wartime production and supply lines can be established. These include stocks of major end items to sustain the operation by replacing combat losses as well as consumable items to replace supplies consumed in the operation.

- **War Reserve Stocks for Allies.** War Reserve Stocks for Allies (WRSA), a program directed by the Office of the SECDEF ensures U.S. preparedness to assist designated allies in case of war. WRSA assets are prepositioned in the appropriate theater and owned and financed by the United States. They are released to the proper Army component commander for transfer to the supported multinational force under provisions in the Foreign Assistance Act and under existing country-to-country memorandums of agreement.

APS are positioned and contain categories of stocks as follows:

- **APS-1 (CONUS).** Operational project stocks, sustainment stocks, and ammunition.
- **APS-2 (Europe).** Prepositioned sets, operational project stocks, ammunition, and WRSA.
- **APS-3 (Afloat).** Prepositioned sets, ammunition, operational project stocks and sustainment stocks.
- **APS-4 (Pacific and Northeast Asia).** Prepositioned sets, operational projects stocks, sustainment stocks, ammunition, and watercraft.
- **APS-5 (Southwest Asia**). Prepositioned sets, operational project stocks, sustainment stocks, ammunition, and watercraft.

As a result of sustained combat operations in Afghanistan and Iraq, the Army's APS stocks are limited. The Army is reconstituting its APS stockage levels, but this will take time to achieve.

Typical lift and consumption planning factors for Army units.

Logistic Requirements for Committed Army Forces

UNIT	Class III (Fuel)	Class V (Ammo)	All Others
Heavy Division	500,000 Gals/Day	2500 T/Day	350 T/Day
Light Division	65,000 Gals/Day	1000 T/Day	200 T/Day
Air Assault Division	300,000 Gals/ Day	1500 T/Day	350 T/Day
Fires Brigade	30,000 Gals/Day	2600 T/Day	40 T/Day
HBCT	150,000 Gals/Day	800 T/Day	90 T/Day
ACR	250,000 Gals/Day	270 T/Day	66 T/Day
Corps (5 Divisions)	2,400,000 Gals/Day	15,750 T/Day	2000 T/Day

Army Airlift and Sealift Requirements (Selected Units)

UNIT	Airlift Sorties*	Sealift	Available Times**
Ranger/Airborne Airfield Seizure TF	8 C17	N/A	N + 18 Hrs
Abn Bde TF for Strategic Bde Assault	93 C17	N/A	N + 18 Hrs
Heavy IRC (4M1A1, 4M2)	8 C17	N/A	N + 18 Hrs
AH-64 Co. (8 ea)	4 C17	N/A	N + 18 Hrs
MLRS Battery (6 Lncrs)	10 C5	N/A	N + 24 Hrs
Patriot Battery (8 Lncrs)	9 C5	N/A	N + 24 Hrs
CA BN Task Force	30 C17	N/A	N + 48 Hrs
AH-64 BN (24 ea)	15 C17	N/A	N + 48 Hrs

ABN Div (-DRB)	500 C-17, 47 C5, 21 CRAF	N/A	N + 72 Hrs
INFANTRY BCT	75 C-17	N/A	N + 96 Hrs
Light Inf Div	375 C17	N/A	N + 96 Hrs
Stryker BCT	350 C17	10 TSVs	N + 96 Hrs
Heavy Division	77 CRAF	2 FSS, 5 LMSR	C + 30 Days
Air Assault Div	70 CRAF	4 LMSR	C + 30 Days

Notes: *Airlift based on numbers of aircraft needed to move entire unit in one lift. CRAF sorties based on average of 222 PAX per sortie
**Availability for air movement is hours after notification (N) to begin air movement, travel time not included. For sealift, it is days to arrive at Tactical Assembly Areas (TAA) after beginning deployment.

VII. Major Army Systems

Wheeled Vehicles

Wheeled Tactical Vehicles	Weight (lbs)	Armament	Range (m)	No of Rounds	Radius (km)	Speed (mph)	Gap Crossing
STRYKER ICV 14 per Mot Inf Co	38,000				330	62 (on road) 45 (off road)	Vertical 23” Gap 78”
STRYKER MGS 3 per Plt in Mot Inf Co	49,000	105mm .50 cal Coaxial 7.62	4000 1200-1600 1000	18 400 3,400	330	62 (on road) 45 (off road)	Vertical 23” Gap 78”
STRYKER Recce Veh 4 per Sct Plt 12 per Trp in RSTA Sq	38,000	External Remotely fired .50 cal 40mm GL	1200-1600 2000	2000 430	330	62 (on road) 45 (off road)	Vertical 23” Gap 78”
Armored Security Vehicle M1117 6 per MP Plt in HBCT; 12 per MP	30,000	Turreted 40mm GL .50 cal MG	2000 1200-1600	840 800	440	65 (on road) 45 (off road)	Vertical 24” Gap 60”

Tracked Vehicles

Vehicle	Unit Size	Weapons	Max eff range (meters)	Carried on veh	Fuel Consumption (gal/hr)	Fuel capacity (gal)	Cruising range (miles)	Max Speed (mph)	Obs negotiation
M1A1 MBT	14 per tank	120 mm	3500	40	Idle Avg: 10.80	505	289	Hwy: 41.5	Vertical
ABRAMS	company	Cdr .50 cnl MG	1,200-1,600 (900)	1,000	Cross country:			Cross	step:
70 Tons	9 per ARMD	(or 7.62 MG)			56.6			country:	3' 6"
	CAV TRP	Coax 7.62 MG	900	10,000	Secondary roads:			30	Trench
		Loader 7.62 MG	900	14,000	2 8				crossing
		Smoke GL	30	24					width: 9'
		Thermal	2,000+						
M2 IFV	14 per Mech	TOW	3,750	7	Idle avg: 6.4	175	300	Hwy: 41	Vertical
BRADLEY	Infantry	25-mm chain gun	APDS: 1,700[a]	225 675	Cross country:			Cross	step: 3'
32 Tons	Company		HEL-T: 3,100[b]	total: 900	18			country:	Trench
		Coax 7.62 MG	900	2,340	Secondary roads:			30	crossing
		Smoke GL	30	16	8.6			Water:	width:
		Thermal	2,000+					4.5	8' 4"
M3 CFV	3 per Bn SCTs	TOW	3,750	12	Idle avg: 6.4	175	300	Hwy: 41	Vertical
BRADLEY	13 per CAV TRP	25-mm chain gun	APDS: 1,700[a]	425, 1,280	Cross country:			Cross	step: 3'
32 Tons			HEL-T: 3,000[b]	total: 1,705	18			country:	Trench
		Coax 7.62 MG	900	4,610	Secondary roads:			30	crossing
		Smoke GL	30	16	8.6			Water:	width:
		Thermal	2000+					4.5	8' 4"

[a]Tracer burnout, otherwise 2,700 meters.

[b]Range at which impact is observable and at which round self-destructs. Tracer burnout occurs at 2,500 meters.

Army Aviation

Type Aircraft	Weapon System (1)	Range (m)	Endurance (hr:min)	Average Speed (2) (knots)	Maximum Load	Fire Control
AH-64A (3) Apache	Hellfire (16 each) Hydra 70 Rockets 76 30-mm Cannon 1,200	8,000 8,800 3,000	1:45 3:15 (4)	140		TADS/FLIR
AH-64D (3) Apache Longbow	Hellfire (16 each) Hydra 70 Rockets 76 30-mm Cannon 1,200	8,000 8,800 3,000	1:45 3:15 (4)	140		Millimeter wave Radar For 256 TGTS 32x FLIR
UH-60L/M HH-60L/M BLACK HAWK	M60 D(2) 7.62 MEDEVAC	1100	2:00	120	8,000 lbs or 1-Inf Squad 6-LITTERS	
CH-47D/F CHINOOK	M60 D(2) 7.62		3:00	140	20,000 or 1-Inf Platoon	
OH-58D(5) KIOWA WARRIOR	Hellfire (4 maximum) Hydra 70 Rockets (14) 50-cal Machine Gun (1) Stinger (4 maximum)	8,000 8,800 2,000 5,000	2:00	90		Mast MTD SIGHT with Thermal Imaging Low Light TV Laser Rangefinder/ Designator
RAH-70 ARAPAHO Armed Recon Helicopter Under development	Hellfire Hydra 2.75 Rockets 50-cal Machine Gun				2-scouts	Nose mounted Adv sight with FLIR
UH-72A LAKOTA Light Utility Helicopter [Garrison Use Only]	N/A	N/A	2:50	145	3300 lbs, 8 pass. or 2 litters	N/A

NOTES:

1. Can be armed with any system or combination if maximum rounds are reduced.
2. Low-level flight for planning route to and from target and/or LZ area. Nap of the earth (NOE) flight speed averages 35 knots (65 kph).
3. AH-64 is capable of operating in limited visibility and at night.
4. When fitted with one auxiliary 230-gallon fuel tank.
5. Kiowa Warrior is an armed version of the OH-58D. It can be fitted with a combination of weapons, but it only has two wpns pylons

Anti-Armor Missiles

Missile	Prime Mover	Weight (lbs)	Guidance Linkage	Rounds Aboard	Range (Meters)
TOW	M2 IFV M3 CFV HMWWV Stryker	40 (round only)	Wire	7 12 6 6	3,750 max 65 min
Hellfire	AH-64 Atk Hel OH-58D RAH-70	100 (round only)	Laser-designated (Radar designated on AH-64D)	16 4 8	7,000+ max
Javelin	Individual Soldier	49 lbs	Infrared Imaging	6	2,000

Field Artillery

Weapon	Rds on Veh/Prime Mover	Rds Bulk Loaded on Resupply	Range (meters)	Weight (lbs)	Time to Emplace (min)	Max Rate of Fire (No. rds first 3 min)	Sustained Fire Rds per Hour	Weapons per Unit
105-mm how towed M119	40	150	11,400 14,600 (RAP)	4,100	3	18	180	IBCT 16
155-mm how M109A6 (PALADIN)	39	203	24,000 30,000 (RAP)	64,000	1.3	12	60	HBCT 16 Corps Bn 18 Fires Bn 18
155-mm how towed M198	28	161	18,000 30,000 (RAP)	15,800	5	12	Variable	SBCT or Fired Bde Bn 18
MLRS (M 270) 227mm Rocket	12	96	30 km+	54,000	2-20	12	12	18 Fires Bn 18
HIMARS (FMTV 5T) 227mm Rocket	6	54	30 km+	30,000	15	6	6	Fires Bn 18 FFCSF
XM 501 Non-Line of Sight Launch System		15	40 km	2,850 162 lbs each				FFCS BCT

MLRS Family of Munitions

Munition	Range (km)	Targets
Fielded		
M26 Rocket DPICM	10 - 32.5	Personnel, Light Armor and Soft Vehicles/Materiel
ATACMS Block I DPICM	25 - 165	Personnel and Soft Vehicles/ Materiel
In Production		
ATACMS Block IA	70 - 300	Personnel and Soft Vehicles/ Materiel
In Development		
GPS Guided MLRS DPICM GMLRS Unitary variant (200 lb)	15 -70+ 15-70+	Personnel, Light Armor and Soft Vehicles/Materiel For use when DPICM not suitable
ATACMS-Quick Reaction Unitary (470 lbs)	270 km	Personnel, equipment, hardened facilities
ATACMS Penetrator		Hardened sites in Korea.

Air Defense Weapons

Air Defense System	Range (km)	Weight (lbs)	Number Launchers per Unit	Guidance	Type Warhead	Rds on Launcher
PATRIOT air defense missile	120	3,740	Btry 6 lncrs Bn 24 lncrs	Command	HE	PAC II: 4 msls per lncr PAC III: 16 msls per lncr
Avenger Air Defense System (HMMV MTD)	4	34.9	Bn 36	Proportional navigation: Uses passive IR homing	HE	8 msls .50 cal mg
EADS SLAMRAM (HMMV MTD)	30km		Comp Bn Btry -12 Man AMD Bn -24	Radar		5 msls
THAAD PLS TRK Chasis Counter Rocket, Artillery, Mortar (C-RAM)	100+km 3km	14,000 +	Btry - 3 1 Phalanx Land Based System	Command: from Army, Aegis, or USAF sensors AN/TPQ-36 Firefinder and Lightweight Counter Mortar Radar	Hit-To-Kill KV 20mm self-destructing explosive round	8

Air Defense Systems

System	Prime Mover	Range	Allocation
Sentinel Radar AN/MPQ-64	HMMWV	40km	2 per Division AMD Det; 7 per Comp AMD Bn; 8-MAMD
AN/PPS-15 GSR	Man packed and vehicle	Pers: 1.5 Veh: 3	3: IBCT
Joint Elevated Networked Sensor (JLENS)	71m AEROSTAT (Helium filled)	LOS to 250km Acft & CMS: 30KM+ Pers: 13 km Veh: 20 km	1 SuR and 1 PTIR Per battery
Long Range Surveillance Teams	Aircraft, vehicle, foot	150 km	15: BfSB 6: IBCT
AN/USD-9 GUARDRAIL Common Sensor (GRCS)	RC-12D	LOS = 450 km Station time: 5.5 hours LOS data link: 150 km	12: AEB
Ground-Based Common Sensor (GBCS)-Prophet AN/MLQ-38 AN/MLQ-39	HVY: Electronic Fighting Vehicle (EFVS) LT: HMMWV	LOS: 40 km	2: BCT; 6: BfSB
Unmanned aerial vehicle-RQ-7B Tactical (TUAV) "Shadow"	Length: 11 ft Wing span: 14ft Dry weight: 375 lbs Max speed: 118 kn Height: 5 ft Payloads: Color CCD FLIR Max altitude: 19,000 ft Operating altitude: 8-10,000 ft	125 km Station time: 5-7 hours	1 baseline = 4 aircraft platforms 2 GCS 2 GDT 4 RVT (1 per Bde)
Unmanned aerial vehicle-RQ-5A short-range (UAV-SR) "HUNTER"	Wing span: 29.2 ft Dry weight: 1,200 lbs Max speed: 106 kn Height: 5.4 ft Payload: FLIR Max altitude: 15,000 ft Operating altitude: 15,000 ft	125 km on GCS 50 km on LRS 75 km on ADR	platforms 4 ADR 3 GCS/MPS 2 GDT 4 RVT 1 LRS
Multi-Purpose MQ-5B HUNTER	34' wingspan, 20,000' ceiling, 280 lbs of ord (Viper/BLU 108).	21 hrs endurance	Replacing existing RQ-5As
RQ-8A RAVEN RQ-11B RAVEN	Hand launched		I system per Bn 3 acft to a system
Extended Range-Multipurpose MQ-1C Warrior	Length: 28 ft Wingspan: 56 ft Payload: 800 lb Max Speed: 130 kn Ceiling: 25,000+	40+ hrs	12 per CAB ER-MP Co EO/IR & SAR/MTI 4 Hellfire Msls
Weapons Locating Radars AN/TPQ-36 AN/TPQ-37	HMMWV towed MTT towed	.9 to 24 km 3-50 km	1 Q36: IBCT; 1 Q36,1 Q37: HBCT, SBCT 4 Q37: Fires Bde

VIII. Army Coordination Issues

Achieving Information Superiority

The ASCC commander is also charged with achieving information superiority. Information superiority is the combination of information management, knowledge management, intelligence, surveillance, and reconnaissance; along with information operations. As the Army has numerous and diverse elements (NETOPS Commands/Brigades, Intelligence Brigades, PSYOP battalions, Army space units, and Information Operations Groups among them) in a theater all contributing to one or more of these efforts, coordination is a challenge. In the absence of a single commander, the ASCC Chief of Staff may be charged with coordinating these elements through his primary staffs with the G7, Information Engagement Officer, coordinating PAO and PSYOP influence operations.

Air and Missile Defense

Theater Missile Defense (TMD) is similar but distinct from Air Defense. Operations to protect the force from missile threats are fundamentally different from those taken to defend from the counterair threat. TMD threats require unique and highly responsive command and control structures that are separate from the TACS. The Army seeks to integrate with the other components in TMD, but not to be degraded through subordination by forming an Army Air and Missile Defense Command. While an Army organization, its functions support the joint force. These functions include establishing an AAMDC LNO at the JFACC's Air Ops Center that will assist in integrating land-based TMD, advising on use of land-based air defense, and providing planning assistance. Recently, the 32d AAMDC operated in this manner as part of Operation IRAQI FREEDOM. New Army operated systems such as Joint Elevated Networked Sensor (JLENS) and the Counter-Rocket, Artillery, and Mortar (C-RAM) provide additional capabilities. (FM 3-01.12).

Civil Affairs and MISO

The Army previously placed all of its CA & MISO units under USASOC. Now only AC CA & MISO units remain under USASOC. USAR CA & MISO units from USACAPOC intended to support conventional Army and Marine units are under US Army Reserve Command direct control. CA and MISO units will normally be aligned with a specific theater army for priority employment, but still remain worldwide deployable. Specific command relationships will need to be further defined. Having all conventional support CA/MISO units in the USAR may be insufficient and additional AC CA units may be needed. In addition, the type and amount of CA & PSYOP support for the Marines needs to be considered. In addition, the Navy has formed Maritime CA Groups for duty in ports and the USMC has formed three 42 man CA Dets, one for each MEF.

Deep Strikes

The ARFOR/JFLCC needs to have a forward boundary sufficiently far in front of the FLOT to enable it to shape and influence the ground battle. In addition, it should not be too far forward to unduly constrain the JFACC's overall interdiction effort. The JFC establishes the forward boundaries of surface components to support the overall theater plan. Within his AO, the ARFOR/JFLCC is the supported commander and designates the target priorities, effects, and timing. Due to their characteristics, Army attack helicopters are well suited to

conduct Close Combat Attack in proximity of friendly ground forces. Forward of the Forward Surface Control Limit (FSCL), but short of the forward boundary, the JFACC may be the Coordinating Authority for operational fires due to the assets he controls. The ARFOR/JFLCC will have a Fire Support Cell (FSC) to plan and monitor these operational fires. These may be precision strikes conducted primarily by Fires Brigades or even Mobile Strikes conducted primarily by Aviation Brigades. (JP 3-09, JP 3-09.3, FM 3-93, CFLCC/3d U. S. Army/ARCENT Operational Fires SOP).

Detainee Operations

During the course of military operations, U. S. and coalition forces must be prepared to detain enemy personnel no longer willing or able to continue to fight, and other personnel based upon established detention criteria to include non-traditional combatants. U.S. and coalition personnel must be prepared to maintain, protect, and account for all categories of potential detainees. A chief of detainee operations, normally the senior Army MP officer from a Military Police Command or Brigade, will be appointed by the joint force commander who will be responsible for the humane treatment and all aspects of detainee operations to include detention facilities, interrogations, and reporting requirements (JP 3-63).

JFLCC Integration of Assets

A Joint Forces Land Component Commander (JFLCC) should be established to exercise control of all ground forces and their doctrinal direct support assets (to include Army rotary wing and unmanned aircraft and ATACMS or USMC Aviation) when employed for sustained land operations. The Army needs to operate a discrete portion of Unmanned Aerial Systems (UAS) to provide for its dedicated requirements. Marines ashore for sustained periods should be placed OPCON or TACON to the JFLCC. Marines embarked should remain under the control of the Maritime Component. Likewise the JFLCC should command all ground based air/missile defense assets for the JFC. For a major conflict, a MEF operating as part of a JFLCC will require augmenting Army MLRS or SP cannon artillery. The Marines can provide a Force Artillery HQ to control these assets. On a task basis, the JFLCC may be required to relinquish control of some of these assets to support another component, but they revert back as the task is completed. Marine Air will always remain under the command of the MAGTF Commander for direct support air sorties. Any sorties in excess of MAGTF direct support requirements will be provided to the joint force commander for re-tasking by the JFACC.

Joint Logistics

The Army's logistical concepts for theater level are evolving to a Sustainment Command (Theater) [TSC] that may also be tasked as the joint theater-level support organization. The TSC will be a modular headquarters that will serve as the ASCC or the JFLCC's single point of contact for the execution of theater–level support functions of personnel, transportation, finance, and contracting support. The other service components can be expected to contribute appropriate sustainment forces. Examples from the Naval Expeditionary Combat Command could include Navy Construction Battalions (SEABEES), Expeditionary Logistics units or Fleet Hospitals ashore. Air Force units may include contingency response, aerial port, or engineering units (RED HORSE). In addition, a Marine Logistics Command, if

formed, will coordinate for logistical support of employed Marine Forces (FM 4-93.4, *Theater Sustainment Command).*

Joint Security Coordinator

As the ARFOR/JFLCC normally commands the most personnel in the Joint Security Area, the JFC may designate the ARFOR/JFLCC or one of his subordinates as the JSC. Previously, the commander of the Theater Support Command as the largest activity in the JSA, could become the JSC. An AAMDC may be designated as was the 32d in Operation IRAQI FREEDOM. Alternatively, a Maneuver Enhancement Brigade or an Operational Protection Command may be designated. The JSC is responsible for the multi-dimensional protection of all forces in the JSA and may require dedicated security forces for this function. A joint security force may be formed from Army MPs, Air Force security forces, Marine Rear Operations Group (MROG) security units, and naval coastal warfare, riverine boat units or expeditionary security elements. (JP 3-10)

Targeting and BDA Process

The ARFOR/JFLCC needs to be able to request additional fire support from other components to support the conduct of land operations in accordance with the JFC's overall guidance. The ARFOR/JFLCC uses the Battlefield Coordination Detachment as ground force liaison with the C/JFACC. A Joint Fires Element (JFE) as part of the J3 can provide staff coordination. Additionally, the JFLCC needs to have access to Battlefield Damage Assessment (BDA) assets in order to make targeting recommendations. As many of these ISR platforms belong to other components, the JFLCC needs a BDA request system. A Joint Targeting Coordination Board (JTCB), preferably under the deputy Combatant Commander, with authority to recommend targeting priorities at the macro level is a method of providing that support. (See JP 3-09 and JP 3-60.)

Stability and Reconstruction Operations

Recent operations in Afghanistan and Iraq have highlighted organizational and doctrinal voids in the US military for the conduct of several types of operations. The Secretary of Defense has issued a DOD Directive 3000.05 on Stability and Reconstruction Operations (S&RO) that establishes the Under Secretary of Defense for Policy as his Executive Agent for all S & RO matters. In addition, the Army has elevated stability to one of the three types of operations, along with offense and defense, to be conducted overseas. The Army has reorganized and rebalanced its forces in order to provide more capability and capacity in S & RO. The insurgency in Afghanistan and Iraq has also refocused the Army on counterinsurgency operations. The Army has produced Field Manual 3-24, *Counterinsurgency Operations*, 15 DEC 2006 and FM 3-07, *Stability Operations* 6 DEC 2008. The challenge will be providing the Army personnel for the numerous Military Assistance Training Teams required to support indigenous forces, both during major operations as well as during peacetime engagement, without detriment to the rest of the Army.

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U.S. MARINE CORPS

I. Mission and Purpose

Organized as an expeditionary "force in readiness," the Marine Corps provides the nation with a responsive force that can conduct operations across the full spectrum of conflict.

Title 10 of the U.S. Code states the following missions of the U.S. Marine Corps:

- Seize or defend advanced naval bases;
- Conduct land operations essential to the prosecution of a naval campaign;
- Provide detachments for service on vessels of the Navy and naval stations and bases; and
- Perform other duties as the President may direct.

Additionally, the Marine Corps will:

- Develop, in coordination with the Army and the Air Force, those phases of amphibious operations that pertain to the tactics, technique, and equipment used by landing forces; and,
- Expand peacetime components of the Marine Corps to meet the needs of war.

In implementing the current security strategy, the Marine Corps performs a variety of missions across the full spectrum of conflict; however, it focuses primarily on two missions: assuring littoral access and responding to crises.

To meet its directed missions in the current uncertain and dangerous security environment, Marine forces train to six core competencies. The Marine Corps views the following core competencies as the fundamental contribution that the service makes to the nation's defense:

- Conduct persistent forward naval engagement and be prepared to respond as the Nation's force in readiness;
- Employ integrated combined arms across the range of military operations and operate as part of a joint or multinational force;
- Provide forces and specialized detachments for service aboard naval ships, on stations, and for operations ashore;

- Conduct joint forcible-entry operations from the sea and develop amphibious landing force capabilities and doctrine;

- Conduct complex expeditionary operations in the urban littorals and other challenging environments; and,

- Lead joint and multinational operations and enable interagency activities.

II. Organization and Structure

The Marine Corps is organized into four major components:

- **Headquarters, U.S. Marine Corps (HQMC).** HQMC consists of the Commandant of the Marine Corps (CMC) and those staff agencies that advise and assist him in discharging his responsibilities prescribed by law and higher authority. The CMC is a full member of the Joint Chiefs of Staff and is directly responsible to the Secretary of the Navy for the total performance of the Marine Corps including the administration, discipline, internal organization, training, requirements, efficiency and readiness of the service.

- **Operating Forces.** Viewed as the heart of the Marine Corps, the operating forces comprise the forward-presence, crisis-response, and fighting power that the Marine Corps provides to U.S. unified combatant commanders. Codified in public law, the Marine Corps' minimum peacetime structure consists of "…not less than three combat divisions and three aircraft wings, and such other land combat, aviation and other services as may be organic therein…" In addition, the Marine Corps maintains a fourth Marine division and aircraft wing in its reserve component.

  The Marine Corps maintains a service component headquarters with each unified geographic combatant command (GCC); however, the preponderance of the Marine Corps' operating forces are assigned to one of the following three combatant commands: U.S. Joint Forces Command (USJFCOM), U.S. Pacific Command (USPACOM), and U.S. Special Operations Command (USSOCOM). The following are the Marine Corps service component headquarters:

    - **U.S. Marine Corps Forces Command (MARFORCOM)**. Located in Norfolk, Virginia, and commanded by a three-star general. Commander, MARFORCOM, provides II Marine Expeditionary Force (MEF) and *activated* Marine Forces Reserve units to the Commander, USJFCOM. Commander, MARFORCOM also serves as Commander, U.S. Marine Corps Forces, Europe.

- **U.S. Marine Corps Forces, Pacific (MARFORPAC)**. Located at Camp H.M. Smith, Hawaii, and commanded by a three-star general. Commander, MARFORPAC, provides I and III MEFs to Commander, USPACOM.

- **U.S. Marine Corps Forces, Special Operations Command (MARSOC).** Located at Camp Lejeune, North Carolina, and commanded by a two-star general. Commander, MARSOC, provides assigned forces to Commander, USSOCOM.

- **Other Service Component Commands**. The Marine Corps maintains a service component headquarters with U.S. Central Command, U.S. European Command, U.S. Southern Command, U.S. Africa Command, and U.S. Northern Command. Marine forces are apportioned, but not assigned to these unified geographic commands.

- **U.S. Marine Corps Forces, Africa Command (MARFORAF).** A three-star headquarters located in Stuttgart, Germany.

- **U.S. Marine Corps Forces, Central Command (MARCENT).** A three-star headquarters located in Tampa, Florida. Commander, MARCENT, also serves as Commanding General, I MEF, located at Camp Pendleton, California.

- **U.S. Marine Corps Forces, European Command (MARFOREUR).** A three-star headquarters located in Stuttgart, Germany.

- **U.S. Marine Corps Forces, Southern Command (MARFORSOUTH).** A two-star headquarters located in Miami, Florida.

- **U.S. Marine Corps Forces, Northern Command (MARFORNORTH).** A three-star headquarters located in New Orleans, Louisiana. Commander, MARFORNORTH, also serves as Commander, U.S. Marine Corps Forces Reserve (MARFORRES).

- **Marine Corps Reserve.** The United States Marine Corps Reserve is responsible for providing trained units and qualified individuals to be mobilized for active duty in time of war, national emergency, or contingency operations, and provide personnel and operational tempo relief for active component forces in peacetime. The Marine Reserve, like the active forces, consists of a combined arms force

with balanced ground, aviation, and combat service support units. The Marine Reserve is organized under the Commander, MARFORRES headquartered in New Orleans, Louisiana.

- **Supporting Establishment.** The Marine Corps supporting establishment consists of personnel, bases, and activities that support the Marine Corps operating forces. The supporting establishment also includes:
    - Marine Corps Recruiting Command
    - Marine Corps Combat Development Command
    - Marine Corps Systems Command
    - Training activities and formal schools

III. Marine Air Ground Task Force (MAGTF)

Marine operating forces organize as a MAGTF. The MAGTF is a balanced, air-ground combined arms task organization under a single commander, structured to accomplish a specific mission or a number of missions across the full spectrum of conflict.

Capability

MAGTFs are flexible, task-organized forces that are capable of responding rapidly to a broad range of combat, crisis, and conflict situations. MAGTFs vary in size and capability according to the mission, threat, and operating environment. The MAGTF is primarily organized and equipped to conduct amphibious operations as part of naval expeditionary forces. MAGTFs are also capable of sustained combat or peace operations ashore. Regardless of size, MAGTFs are "expeditionary" forces. An expeditionary force is a *capability*, vice a *structure*. Any size MAGTF could be referred to as a Marine expeditionary capability.

Structure

Each MAGTF, regardless of size or mission, has the same basic structure. A MAGTF consists of four core elements: Command (CE), Aviation (ACE), Ground (GCE), and Logistics Combat Element (LCE). No one element of the MAGTF is necessarily more important than the others; the ACE, GCE or LCE could be the MAGTF main effort depending on the mission. (See Figure 1)

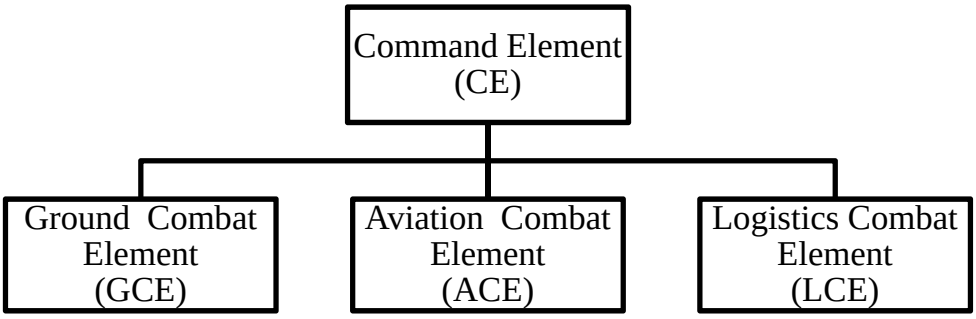


Figure 1: Four Core Elements of all MAGTF's

Four Core Elements of a MAGTF:

- **Command Element (CE).** The CE contains the MAGTF headquarters and other units that provide intelligence, communication, and administrative support. The CE is scalable and task organized to provide the command, control and joint interoperability necessary for effective planning and execution of operations.

- **Ground Combat Element (GCE).** The GCE is task organized to conduct ground operations to support the MAGTF mission. This element includes infantry, artillery, reconnaissance, armor, light armor, assault amphibian, engineer, and other forces, as needed. The GCE varies in size and composition.

- **Aviation Combat Element (ACE).** The ACE conducts offensive and defensive air operations and is task organized to perform those functions of Marine aviation required to support the MAGTF mission.

- **Logistics Combat Element (LCE).** The LCE is task organized to provide the full range of combat service support functions and capabilities necessary to maintain the continued readiness and sustainability of the MAGTF as a whole. The LCE varies in size and composition.

Types of MAGTFS
There are four basic MAGTF organizations: Marine Expeditionary Force (MEF), Marine Expeditionary Brigade (MEB), Marine Expeditionary Unit (MEU), and Special Purpose MAGTFs (SPMAGTF).

Marine Expeditionary Force (MEF)
The MEF is the largest standing MAGTF and the principal Marine Corps war fighting organization. It is capable of missions across the full spectrum of conflict through amphibious and sustained operations ashore in any environment.

Each MEF consists of:

- MEF Headquarters Group (CE)
- Marine Division (GCE)
- Marine Aircraft Wing (ACE)
- Marine Logistics Group (LCE)

The three standing MEFs, (I, II and III MEF) provide a pool of capabilities and combat power from which all smaller MAGTFs are formed. Each MEF is commanded by either a Lieutenant General or Major General and consists of 20,000 to 90,000 personnel. Because of a limited number of platforms, the Navy / Marine Corps team is currently incapable of deploying an entire MEF on U.S. Navy amphibious shipping. Consequently, A MEF normally deploys on a combination of amphibious, Military Sealift Command (MSC) and Maritime Pre-positioned Force (MPF) vessels, as well as Air Mobility Command (AMC) air transport. A MEF deploys with 60 days of supplies for sustained operations ashore. (See Figure 2)

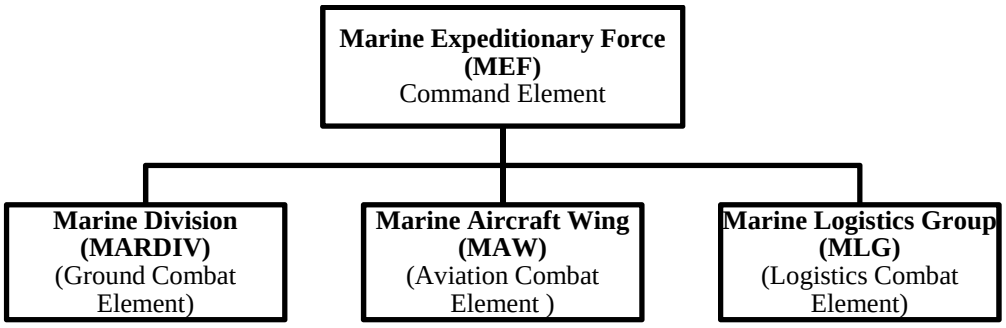


Figure 2: MEF

I Marine Expeditionary Force (I MEF)
Headquartered at Camp Pendleton, California; units located in California and Arizona:

- 1st Marine Division (1st MARDIV) - Camp Pendleton, California
- 3d Marine Aircraft Wing (3rd MAW) - Miramar San Diego, California
- 1st Marine Logistics Group (1st MLG) – Camp Pendleton, California

II Marine Expeditionary Force (II MEF)
Headquartered at Camp Lejeune, North Carolina; units located in North and South Carolina:

- 2nd Marine Division (2nd MARDIV) - Camp Lejeune, North Carolina

- 2nd Marine Aircraft Wing (2nd MAW) - Cherry Point, North Carolina
- 2nd Marine Logistics Group (2nd MLG) - Camp Lejeune, North Carolina

III Marine Expeditionary Force (III MEF)
Headquartered in Okinawa, Japan; units located in Hawaii and Japan:

- 3d Marine Division (3rd MARDIV) - Okinawa, Japan
- 1st Marine Aircraft Wing (1st MAW) - Okinawa, Japan
- 3d Marine Logistics Group (3rd MLG) - Okinawa, Japan

Marine Expeditionary Brigade (MEB)
The MEB is a medium sized MAGTF that is task organized to respond to a full range of crises, from forcible entry to humanitarian assistance. MEBs are not standing organizations; they form only when needed. The most recent example of this was the activation of MEB-Afghanistan (MEB-A) for service in Helmand Province, Afghanistan.

Each MEB consists of:

- MEB Headquarters Element (CE)
- Marine Regiment (Regimental Landing Team or Regimental Combat Team) (GCE)
- Composite Marine Aircraft Group (ACE)
- Combat Logistics Regiment (LCE)

A MEB is commanded by a Brigadier General or Major General and consists of 3,000 to 20,000 (nominally 16,500) personnel. It generally deploys on U.S. Navy amphibious ships with support from MSC and MPF vessels and AMC. The MEB deploys with 30 days of supplies for sustained operations ashore. (See Figure 3)

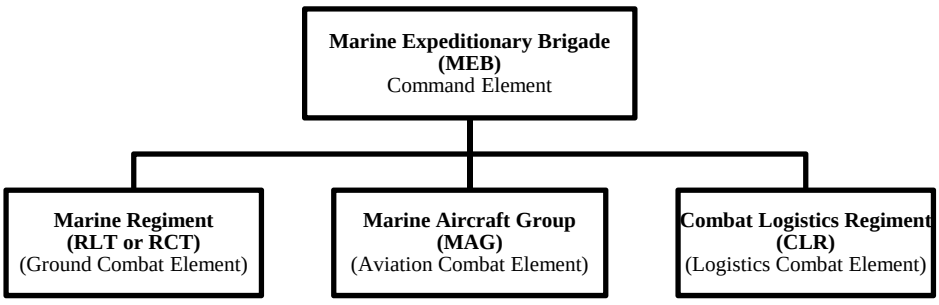


Figure 3: MEB

Marine Expeditionary Unit (MEU)
The MEU is the standard forward deployed Marine expeditionary organization. A MEU is task organized to be a forward deployed presence and designed to be the "first on the scene" force.

Each MEU consists of:

- MEU Headquarters Element (CE)
- Battalion Landing Team (GCE)
- Composite Marine Squadron (Rotary and fixed wing aircraft (ACE)
- Combat Logistics Battalion (LCE)

A MEU is commanded by a Colonel and consists of 1,500 to 3,000 personnel. MEUs typically deploy for six-months aboard U.S. Navy amphibious ships. They deploy with 15 days of supplies for sustained operations ashore. At any given time, three MEUs are continuously deployed around the globe.

A MEU is capable of a wide range of small scale contingencies, to include:

- Amphibious raids/limited objective attacks
- Noncombatant evacuation operations (NEO)
- Security operations /Counter-Intelligence operations
- Tactical recovery of aircraft and/or personnel (TRAP)
- Humanitarian/civic action operations

Before deployment, a MEU undergoes an intensive six-month training program, focusing on its conventional and maritime special operations missions. The training culminates with a thorough evaluation and certification. In addition to possessing conventional capabilities, a MEU, when augmented with a Marine Special Operations Company (MSOC) provided by MARSOC, may be designated as a MEU (Special Operations Capable) or MEU(SOC). (See Figure 4)

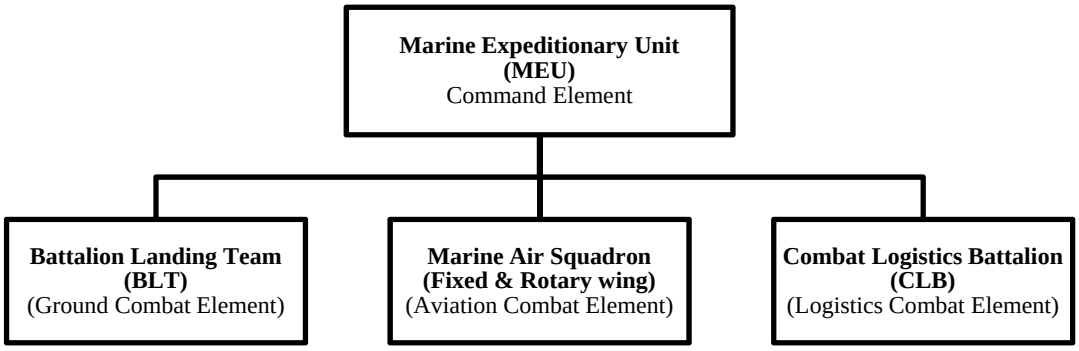


Figure 4: MEU

Special Purpose Marine Air/Ground Task Force (SPMAGTF)
The SPMAGTF is a non-standing MAGTF temporarily formed to conduct a specific mission. It is normally formed when a standing MAGTF is unavailable or inappropriate. Their designation derives from the mission they are assigned, the location in which they will operate, or the name of the operation in which they will participate. These MAGTFs vary in size and composition based on the individual mission. As with the MEU, the SPMAGTF may be the forward element of a larger MAGTF. Some recent examples of deployed SPMAGTFs are SPMAGTF Los Angeles, SPMAGTF Somalia and SPMAGTF Katrina.

MAGTF SIZE	**ELEMENT**		
(Largest to Smallest)	**GCE**	**ACE**	**LCE**
Marine Expeditionary Force (MEF)	Marine Division (MARDIV)	Marine Aircraft Wing (MAW)	Marine Logistics Group (MLG)
Marine Expeditionary Brigade (MEB)	Marine Regiment (RLT or RCT)	Marine Aircraft Group (MAG)	Combat Logistics Regiment (CLR)
Marine Expeditionary Unit (MEU)	Battalion Landing Team (BLT)	Reinforced Helicopter/Fixed Wing Squadron	Combat Logistics Battalion (CLB)
Special Purpose MAGTF (SPMAGTF)	Elements of a MARDIV	Elements of a MAW	Elements of a MLG

Figure 5: MAGTF Organization & General Sizing

The previously described MAGTFs provide a range of capabilities to support naval, unified combatant commanders, and national requirements. These MAGTFs are joined by other

unique Marine capabilities to help the Marine Corps deal with a full range of conventional and unconventional threats and assignments. Listed below are a few of these other unique capabilities.

Global Response Forces (GRF)
Marine Corps GRFs are standing contingency forces that can respond rapidly to emerging crises anywhere in the world. MARFORPAC and MARFORCOM maintain GRFs in continuous states of readiness, enabling the Marine Corps to provide GCCs with the appropriate GRF as soon as the NCA directs. Marine GRFs provide great versatility: they can be immediately employed from U.S. Navy amphibious ships, fly into a crisis area and marry-up with equipment from the MPF or conduct security and enabling functions as the lead element of a MAGTF. Additionally, the Chemical and Biological Incident Response Force (CBIRF) – a unique Marine Corps capability – maintains a high state of readiness to respond to asymmetric enemy action at home or abroad.

Maritime Prepositioning Force (MPF)
The MPF is a strategic power-projection capability that combines the lift capacity, flexibility, and responsiveness of surface ships with the speed of strategic airlift. Strategically positioned around the globe, the Maritime Prepositioning Ships (MPS) of the MPF provide the GCCs with persistent forward presence and rapid crisis response. The MPF is sometimes referred to as the "fifth element of the MAGTF" because of the vital contribution is makes to the deployment of Marine Corps operating forces.

The MPF is organized into three Maritime Prepositioning Ship Squadrons (MPSRON): MPSRON-1, based in the Mediterranean; MPSRON-2, based in the Indian Ocean; and MPSRON-3, based in the Western Pacific. Each interoperable MPSRON is designed to couple with a Fly-In Echelon (FIE) to support the rapid closure of a Marine Expeditionary Brigade (MEB). In addition to force closure, each MPSRON can sustain a MEB-size force for 30 days.

When needed, an MPSRON moves to the crisis region and offloads either in port or in-stream off-shore. Offloaded equipment and supplies are then married up with Marines and sailors arriving at nearby airfields. The end result is a combat-ready MAGTF rapidly established ashore, using minimal reception facilities. The MAGTF combat capability provided by MPF supports GCC military operations that defeat adversaries and win wars, but has also supported regional crises that require rapid and effective humanitarian assistance and disaster relief.

Marine Special Operations Command (MARSOC)
Although the notion of a Marine "special forces" contribution to the U.S. Special Operations Command (USSOCOM) was considered as early as the founding of USSOCOM in the 1980s, the Marine Corps resisted it. After a three-year development period, the Marine Corps agreed in 2006 to supply a 2,600-Marine unit to USSOCOM.

MARSOC, as the U.S. Marine Corps service component of USSOCOM, trains, organizes, equips, and when directed by CDRUSSOCOM, deploys task organized, scalable, and

responsive U.S. Marine Corps special operations forces worldwide in support of combatant commanders and other agencies.

IV. Warfighting Doctrine

Marine Corps warfighting doctrine is based on maneuver warfare. Maneuver seeks to shatter enemy cohesion through a series of rapid, violent, and unexpected actions. Operational mobility, surprise, speed, and flexibility allow MAGTFs to pit their strengths against enemy vulnerabilities.

V. Systems and Equipment

Combat Vehicles	Description
AAV Amphibious Assault Vehicle	Troop carrier: 18 troops, 3 crew or 10k cargo. Comes in C^2 variant and a recovery vehicle variant. Water 8+ MPH, land 45+ MPH, Range (land) 300 miles.
LAV Light Armored Vehicle	Serves as assault and recon vehicle. Provides tactical mobility. Amphibious (for river crossings), 6 MPH water, 62 MPH land. Crew of three, 4 troops. May come as anyone of three variants; C^2, logistics, and recovery. Equipped with 25 mm cannon. TOW, mortar (81 mm), air defense and logistics variants.
M1A1 Abrams Tank	A stabilized 120mm main gun, powerful 1,500 hp turbine engine, and special armor, make the M1A1 particularly suitable for attacking or defending against armor forces. Equipped with 50 cal and 7.62 MGs; Speed - 41.5 mph; Weight - 67.6 tons; Crew - 4
M198 Howitzer M777 Howitzer	The M198 is a 155mm medium-towed artillery piece. Sustained rate of fire - 1 rd/minute, max rate - 4 rds/minute; Range – 18,150 meters (30K with rocket assist); Crew: 11-15 men. By 2010, the M777 155mm howitzer will replace the M198. The M777 is 5,000 lbs lighter, and thus more expeditionary. Firing ranges are similar; however, the M777's more advanced fire direction system will improve firing precision, speed, and flexibility.

Aircraft	Warfare Missions
AV-8B Harrier	630 MPH, Ferry range 2100 NM. V/STOL aircraft, short or vertical launch capability. Ordnance load 16,500 lbs. Night operating capability.
F/A-18	Speed - supersonic; Ferry Range - 2,000 NM (2300 miles), Armament – carries an assortment of air-to-air and air-to-ground weapons, including Sparrows, Sidewinders, AMRAAMs, Harpoons, and Maverick missiles; GBU / CBU bombs; Night operating capable.
EA-6B	Max Speed - .99 Mach; Cruise Speed - .72 Mach; Range – 850 NM (978 miles), unlimited with aerial refueling; Armament – ALQ 99 Tactical Jamming System; USQ-113 Communications Jammer, High Speed Anti-Radiation Missile (HARM); Mission - Airborne Electronic Warfare (EW)
CH-53E	Speed – 150 Kts (173 MPH); Range – 540 NM (621 miles) w/o refueling, unlimited with aerial refueling; Crew – 4; Payload – 55 troops, or 70k lb cargo; Mission – cargo movement primary, troop assault secondary
V-22 Osprey	275 MPH cruise, 300 MPH dash, 24 Troops or 12 litters, cargo capacity: 10k internal, 15k external. Has potential SOF application.
AH-1W Sea Cobra	190 kts, range 256 NM, crew of two. 20 mm nose gun turret, 2.75" and 5.0" rockets, Hellfire and TOW missiles, Sidewinder and Sidearm missiles.
UH-1N Huey	121 kts, range 172 NM. 8-10 troops or 6 litters may be armed if required.

VI. Service Specific Issues

The Marine Corps is undergoing a “return to the sea.” Some have argued that since October 2001, the Marine Corps has turned into a “second land army” for the United States because of its experience with sustained combat operations ashore in both Iraq and Afghanistan. Marine leadership has acknowledged that there is some truth to this position; however, they are quick to add that this should be a source of pride. If the Marine Corps has acted as a second land army, it is because that it what the country has asked it to do. Nonetheless, there is a concern that sustained counterinsurgency operations ashore have led to a decrease in experience in combined arms and amphibious operations. Consequently, the Marine Corps is currently scrutinizing its training, doctrine, equipment and personnel management policies to

ensure that they will produce a *middleweight* force light enough to leverage amphibious shipping, yet heavy enough to accomplish assigned missions.

The Marine Corps supports a robust amphibious shipping capability in the U.S. Navy. The dual demands of sustained forward presence and sufficient lift for the assault echelons of two MEBs result in a requirement for 38 ships; however, fiscal constraints have led the Marine Corps and Navy to agree to accept risk with 33 amphibious ships. Both services are also exploring options for employing Marines from a wider variety of ships.

The Marine Corps remains committed to maintaining a forcible entry capability. Some interpreted the cancellation of the problematic Expeditionary Fighting Vehicle (EFV) program as a signal that the Marine Corps accepted that it would no longer have the capacity to project power in a non-permissive environment. However, recently CMC stated his commitment to both maintaining the Marine Corps' forcible entry capability and an enhanced program to replace the aging Amphibious Assault Vehicle fleet.

The Marine Corps will soon experience manpower reductions. In the last decade, demands from continuous forward deployment and sustained combat operations in Iraq and Afghanistan led to an increase in end-strength to 202,000 Marines. Supporting operations in Afghanistan still remains the Marine Corps' top priority; however, the service is planning manpower reduction after the conclusion of Marine Corps operations in Afghanistan. In its effort to reduce force structure to 186,000, the Marine Corps has chosen to preserve its capability to conduct operations across the full spectrum of conflict but accept risk in its capacity to conduct simultaneous major combat operations and campaigns. Force structure changes will include:

- Consolidation of a MARFOR with a MEF headquarters;
- 13% reduction of ground forces;
- 16% reduction of fixed-wing tactical aviation squadrons;
- 9% reduction in logistics units; and,
- 13% reduction of civilian work force.

U.S. AIR FORCE[3]

I. Air Force Vision

The United States Air Force will be a trusted and reliable joint partner with our sister services known for integrity in all of our activities, including supporting the joint mission first and foremost. We will provide compelling air, space, and cyber capabilities for use by the combatant commanders. We will excel as stewards of all Air Force resources in service to the American people, while providing precise and reliable Global Vigilance, Reach and Power for the nation.

II. Air Force Mission

The mission of the United States Air Force is to *fly, fight* and *win*...in air, space and cyberspace.

III. Command Structure

The ten major commands, 30 field operating agencies, three direct reporting units and their subordinate elements constitute the field organization that carries out the Air Force mission. In addition, there are two Reserve components: the Air Force Reserve, which is also a major command, and the Air National Guard.

Major commands are organized on a functional basis in the United States and a geographic basis overseas. They organize, administer, equip and train their subordinate elements for the accomplishment of assigned missions. In descending order of command, elements of major commands include numbered air forces, wings, groups, squadrons and flights.

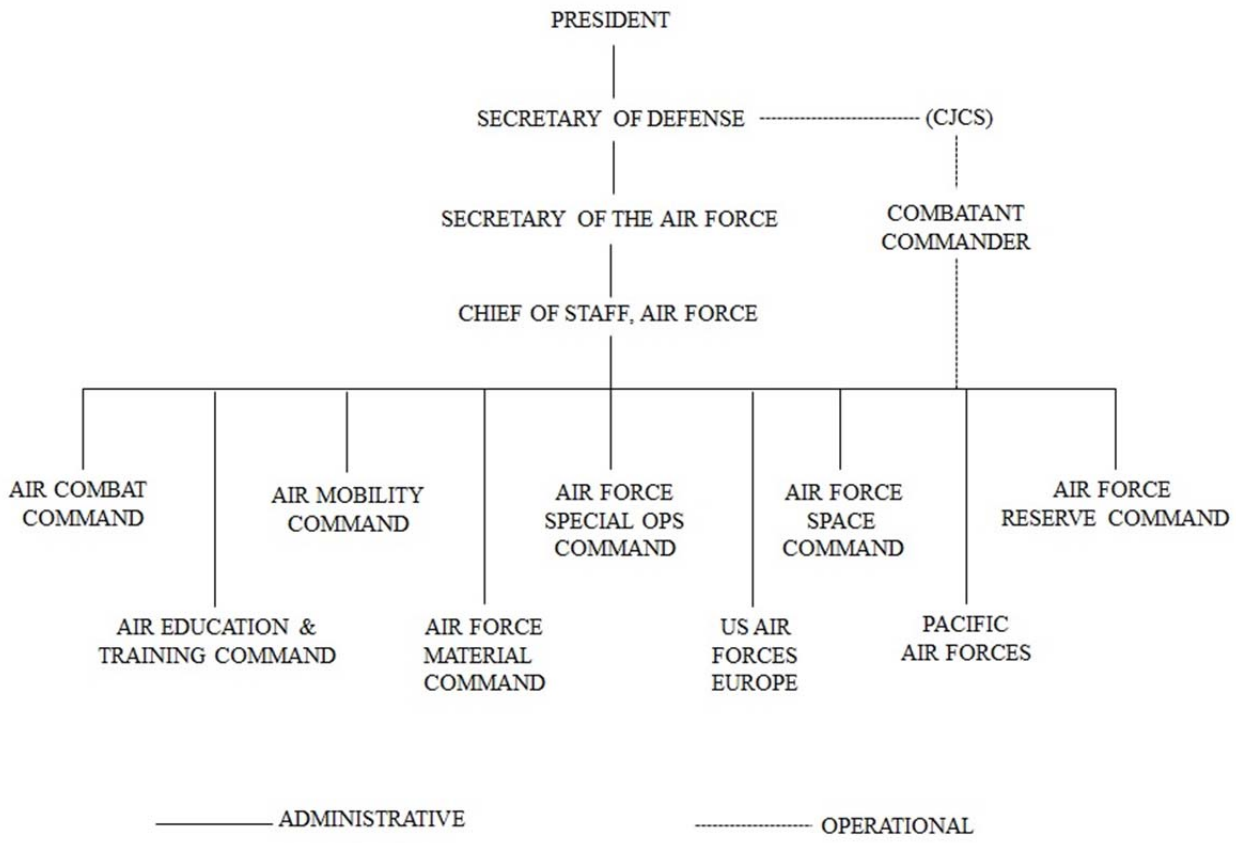
Most units of the Air Force are assigned to a specific major command, led by a general officer. MAJCOMs may be subdivided into numbered Air Forces, with each NAF responsible for one or more wings or independent groups.

The basic unit for generating and employing combat capability is the *wing*, which has always been the Air Force's prime war-fighting instrument. Wings are responsible for carrying out specific missions, and usually maintain an Air Force base. Wings may be commanded by a general officer or a colonel. There are different types of wings, based on objective: operational, air base, or specialized mission. A wing may have several squadrons in more than one dependent group. Composite wings operate more than one kind of aircraft, and may be configured as self-contained units designated for quick air intervention anywhere in the world.

A *group* is a large Air Force formation usually composed of four or more squadrons and the bases from which they operate. Wings typically contain an operations group, a maintenance group, a support group, and a medical group.

[3] This data is extracted from the 2010 U.S. Air Force Almanac, the U.S. Air Force Website at www.af.mil, www.afrc.mil. www.angaf.mil.

The majority of individual officers and Airmen are assigned to a *squadron*, which may be composed of several flights.
Field operating agencies and *direct reporting units* are other Air Force subdivisions and report directly to Headquarters U.S. Air Force (HAF). They are assigned a specialized mission, restricted in scope when compared to the mission of a major command. Field operating agencies carry out field activities under the operational control of a HAF functional manager. Direct reporting units are not under the operational control of a Headquarters U.S. Air Force functional manager because of a unique mission, legal requirements or other factors.



USAF Air and Space Inventory (Types)

Fighter/Attack: A-10, F-15, F-15E, F-16, F-22A

Bomber: B-1, B-2, B-52

Transport: C-5, C-9, C-12, C-17, C-20, C-21, C-32, C-37, C-38, C-40, C-130, LC-130, VC-25

Theater Airlift: C-130

Tankers: HC-130, KC-10, KC-135

Special Operations: AC-130, CV-22, MC-130

Reconnaissance / Battle Management / C3I: E-3, E-4, E-8, EC-130, MC-12, MQ-1, MQ-9, OC-135, RC-26, RC-135, RQ-4, U-2, WC-130

Helicopter: HH-60, H-1

Trainer: T-1, T-6, T-38, T-41, T-43, T-51, Gliders, UV-18

Strategic Missile: Minuteman III, Peacekeeper

Satellites: Meteorological, Communication, Global Positioning, Missile Warning

IV. Major Command Structure

Air Combat Command

Air Combat Command (ACC) was established June 1, 1992. Headquarters ACC is at Langley Air Force Base, VA. ACC is the primary force provider of combat airpower to America's warfighting commands. To support global implementation of national security strategy, ACC operates fighter, bomber, reconnaissance, battle-management, and electronic-combat aircraft. It also provides command, control, communications and intelligence systems, and conducts global information operations.

As a force provider, ACC organizes, trains, equips and maintains combat-ready forces for rapid deployment and employment while ensuring strategic air defense forces are ready to meet the challenges of peacetime air sovereignty and wartime air defense. ACC numbered air forces provide the air component to U.S. Central, Southern and Northern Commands, with Headquarters ACC serving as the air component to Joint Forces Command. ACC also augments forces to U.S. European, Pacific and Strategic Command.

Personnel and Resources
More than 67,000 active-duty members and 13,500 civilians make up ACC's workforce. When mobilized, more than 50,000 members of the Air National Guard and Air Force Reserve, along with about 675 aircraft, are assigned to ACC. In total, ACC and ACC-gained units fly more than 1,800 aircraft.

Organization
ACC's forces are organized under a direct reporting unit, two numbered air forces and one Air Force Reserve numbered air force. The command operates 13 major installations and supports tenant units on numerous non-ACC bases around the globe. ACC also has responsibility for inland search and rescue in the 48 contiguous states. The ACC commander is the component commander of U.S. Air Forces - Joint Forces Command and U.S. Strategic Command.

Numbered Air Forces

First Air Force, or **Air Forces Northern,** with headquarters at Tyndall AFB, FL, has responsibility for ensuring the air sovereignty and air defense of the continental United States, U.S. Virgin Islands and Puerto Rico. As the continental United States Region, or CONR, for the North American Aerospace Defense Command, or NORAD, First AF (AFNORTH) provides air defense in the form of airspace surveillance and airspace control. First AF is also the designated air component for U.S. Northern Command.

AFNORTH rapidly responds to non-military threats under the Defense Support to Civil Authorities, or DSCA, mission. The organization assists civilian agencies before and during emergencies, natural or man-made disasters, and other DOD-approved activities. Operating with the 601st Air and Space Operations Center, the Air Force Rescue Coordination Center serves as the U.S. inland search and rescue coordinator and is the single agency responsible for coordinating on-land federal searches. These search and rescue operations can be conducted anywhere in the 48 states, Mexico and Canada. The Civil Air Patrol is a significant partner in search and rescue and other DSCA missions.

Other First Air Force (AFNORTH) units include the 601st Air and Space Operations Center, the 702nd Computer Support Squadron and the Air Force Rescue Coordination Center at Tyndall AFB, the Northeast Air Defense Sector in Rome, NY; the Western Air Defense Sector at McChord AFB, WA; Det. 1, First AF, Winnipeg, Manitoba, Canada; and the 722nd Air Defense Squadron, North Bay, Canada.

Aligned wings:

119th Fighter Wing, Hector Field, Fargo, ND: MQ-1, C-21
Det. 1, 119th Fighter Wing, Langley AFB, VA: F-16C
120th Fighter Wing, Great Falls International Airport, MT: F-16
125th Fighter Wing, Jacksonville IAP, FL: F-15
Det. 1, 125th Fighter Wing, Homestead Air Reserve Station, FL
142nd Fighter Wing, Portland IAP, OR: F-15
144th Fighter Wing, Fresno Air National Guard Base, CA: F-16
Det. 1, 144th Fighter Wing, March Air Reserve Base, CA
147th Fighter Wing, Ellington ANG Base, TX: MQ-1, C-26
148th Fighter Wing, Duluth IAP, MN: F-16
158th Fighter Wing, Burlington IAP, VT: F-16
177th Fighter Wing, Atlantic City IAP, NJ: F-16
101st Information Operations Flight, Salt Lake City IAP, UT

Ninth Air Force, with headquarters at Shaw Air Force Base, SC, controls ACC fighter forces based on the East Coast of the United States, and serves as the air component for a 20-nation area within the U.S. Central Command area of responsibility.

Other Ninth Air Force units include: 33rd Fighter Wing (F-15C/D), Eglin AFB, FL; 18th Air Support Operations Group, Pope AFB, NC; 820th Security Forces Group, Moody AFB, GA; and 823rd RED HORSE Squadron, Hurlburt Field, FL.

Bases
Langley AFB, VA – Headquarters Air Combat Command, 1st Fighter Wing: F-22
Moody AFB, GA – 23rd Wing: A-10C, HC-130P, HH-60G
Seymour-Johnson AFB, NC – 4th Fighter Wing: F-15E. (The 23rd Fighter Group at Pope AFB (A-10/OA-10) is part of the 4th Fighter Wing.)
Shaw AFB, SC – Headquarters 9th Air Force; 20th Fighter Wing: F-16C/D

Tenth Air Force, located at Naval Air Station Joint Reserve Base, Fort Worth, TX, directs the activities of more than 13,300 reservists and 900 civilians located at 28 installations throughout the United States.

The mission of the Tenth Air Force is to exercise command supervision of its assigned Reserve units to ensure they maintain the highest combat capability to augment active forces in support of national objectives. Tenth Air Force currently commands Air Force Reserve Command units gained by five other major commands, including Air Combat Command. ACC-gained units consist of six fighter wings, three air rescue units, one bomber squadron, one combat operations squadron, and one airborne warning and control group when mobilized.

Twelfth Air Force, with headquarters at Davis-Monthan AFB, AZ, controls ACC's conventional fighter and bomber forces based in the western United States and has the warfighting responsibility for U.S. Southern Command as well as the U.S. Southern Air Forces.

Other 12th Air Force units include: 388th Fighter Wing (F-16C/D), Hill AFB, UT; 1st Air Support Operations Group, Fort Lewis, WA; and 820th RED HORSE Squadron, Nellis AFB, NV.

Bases
Beale AFB, CA – 9th Reconnaissance Wing: U-2, MC-12 , T-38, RQ-4B
Creech AFB, NV – 432nd Wing: MQ-1, MQ-9
Davis-Monthan AFB, AZ – Headquarters 12th Air Force; 355th Wing: A/OA-10
Dyess AFB, TX – 7th Bomb Wing: B-1
Ellsworth AFB, SD – 28th Bomb Wing: B-1
Hill AFB, UT – 388th Fighter Wing: F-16C/D
Holloman AFB, NM – 49th Fighter Wing: F-22, MQ-1, MQ-9, T-38
Mountain Home AFB, ID – 366th Fighter Wing: F-15C/D/E, F-16D, F-16C/J, and the Air Expeditionary Force Battlelab
Offutt AFB, NB – 55th Wing: E-4B, EC-130, OC-135B, RC-135S/U/V/W, TC-135S/W, WC-135C/W
Tinker AFB, OK – 552nd Air Control Wing: E3-B/C

Direct Reporting Unit
U.S. Air Force Warfare Center, at Nellis AFB, NV, conducts the Air Force's advanced weapons and tactics training, manages advanced pilot training and is responsible for the operational test and evaluation of ACC's combat weapons systems. The UAV Battlelab and

the Command and Control Training and Innovation Group located at Hurlburt Field, FL are assigned to the center.

Under the Air Warfare Center is the 57th Wing (A-10, F-15C/D/E, F-16C/D, HH-60G and RQ-1A/B Predator unmanned aircraft system), 99th Air Base Wing, 98th Range Wing, U.S. Air Force Air-Ground Operations School, U.S. Air Force Weapons School, U.S. Air Force Air Demonstration Squadron (the Thunderbirds), and the 414th Combat Training Squadron (Red Flag).

The 53rd Wing at Eglin AFB, FL is also assigned to the Air Warfare Center. The 53rd Wing's subordinate units include the 53rd Test and Evaluation Group (A-10, F-15A/C/E, F-16C/D, F-22, B-1, B-2, B-52, HH-60G, RQ-1 and RQ-4) at Nellis, the 53rd Electronic Warfare Group at Eglin, and the 53rd Weapons Evaluation Group (E-9) at Tyndall AFB, FL. The 53rd Test Management Group at Eglin coordinates the wing's test process, directing resources and priorities within the wing nationwide.

Air Education and Training Command

Air Education and Training Command (AETC), has its headquarters at Randolph Air Force Base near San Antonio, TX.

Mission
AETC's mission is to develop America's Airmen today ... for tomorrow.

Personnel and Resources
More than 56,000 active duty members, 4,000 Air National Guard and Air Force Reserve personnel, and 14,000 civilian personnel make up AETC. The command also has more than 11,700 contractors assigned. AETC is responsible for approximately 1,500 aircraft.

Organization
The command includes Air Force Recruiting Service, two numbered air forces and the Air University.

Air Force Recruiting Service
AETC's mission begins with the Air Force Recruiting Service, with headquarters at Randolph AFB, Texas. AFRS comprises three regional groups and 24 squadrons with more than 1,200 recruiters assigned throughout the United States, England, Germany, Japan, Puerto Rico and Guam. The AFRS mission is to recruit quality men and women with the right skills, at the right time, in the right numbers to sustain the combat capability of the U.S. Air Force. The Air Force brings in nearly 30,000 active duty enlisted accessions each year. The command is responsible for accessing 100 percent of the enlisted force, 90 percent of the service's medical officers, approximately 25 percent of the line officers (through Officer Training School) and 100 percent of Air Force chaplains.

2nd Air Force: Basic, Technical and Expeditionary Training
Second Air Force, with headquarters at Keesler AFB, Miss., is responsible for conducting

basic military and non-flying technical training for Air Force, joint and coalition enlisted members and support officers. Second Air Force also oversees Airmen training for Joint Sourcing Solutions taskings.

19th Air Force: Flying Training
Nineteenth Air Force, with headquarters at Randolph AFB, conducts AETC's flying training and is responsible for training aircrews and air battle managers. AETC conducts cadet airmanship programs at the United States Air Force Academy for more than 2,500 cadets per year.

In addition to pilot training, 19th Air Force provides Combat Systems Officer, or CSO, training. CSO training is conducted at Randolph AFB and NAS Pensacola, Fla. CSO training combines portions of navigator and electronic warfare training to produce an aviator skilled in advanced navigation systems, electronic warfare and weapons employment.

Nineteenth Air Force also provides follow-on training for most Air Force aircrew in their assigned aircraft.

Air University: Education
Air University, with headquarters at Maxwell AFB, Ala., conducts professional military education, or PME, graduate education and professional continuing education for officers, enlisted members and civilians throughout their careers.

AETC promotes values of civic responsibility among the civilian community through two Air University-sponsored programs. The Civil Air Patrol is a private, non-profit organization providing aerospace education, a cadet program and emergency services. The Air Force Junior ROTC program promotes citizenship values in young high school students at more than 790 locations worldwide.

Medical Services
The Air Force's two largest medical facilities belong to AETC. Wilford Hall Medical Center at Lackland AFB and Keesler Medical Center at Keesler AFB provide most of the Air Force's graduate medical and dental education, as well as enlisted medical training.

Security Assistance Training
AETC is the executive agent for all Air Force sponsored international training and education. The command implements and approves Air Force sponsored security assistance training, monitors the progress of training and the welfare of USAF-sponsored international students, and provides guidance for implementation of the DOD Informational Program. Each year AETC members train or facilitate training for more than 4,400 students from more than 130 countries attending flying, technical, medical and professional education and training.

Air Force Material Command

With headquarters at Wright-Patterson Air Force Base, Ohio, Air Force Materiel Command

conducts research, development, test and evaluation, and provides acquisition management services and logistics support necessary to keep Air Force weapon systems ready for war. AFMC delivers war-winning expeditionary capabilities to the warfighter through development and transition of technology, professional acquisition management, exacting test and evaluation, and world-class sustainment of all Air Force weapon systems. From cradle-to-grave, AFMC provides the work force and infrastructure necessary to ensure the United States remains the world's most respected Air and Space Force.

Goals

- Continue to strengthen the nuclear enterprise
- Implement effective and efficient integrated life cycle management to support the warfighter
- Support the Air Force by recruiting, training and retaining a high-performing work force
- Nurture and protect our people and families
- Be good stewards of government resources

Vision

War-winning capabilities -- on time, on cost.

People and Resources

AFMC employs a highly professional and skilled command work force of more than 79,000 military and civilian employees.

Organization

AFMC fulfills its mission of equipping the Air Force with the best weapon systems through the Air Force Research Laboratory and several unique centers which are responsible for the "cradle-to-grave" oversight for aircraft, electronic systems, missiles and munitions. For instance, weapon systems, such as aircraft and missiles, are developed and acquired through three product centers, using science and technology from the laboratory research sites. The systems are then tested at AFMC's two test centers. Over the system's lifetime, it may be serviced, upgraded or repaired at the three air logistics centers. The command's specialized units perform many other development and logistics functions, including scientific research and the retirement or sale of older systems.

The AFMC headquarters is a major unit located at Wright-Patterson AFB, Ohio. There are 10 AFMC host bases: Arnold AFB, Tenn.; Brooks City-Base, Texas; Edwards AFB, Calif.; Eglin AFB, Fla.; Hanscom AFB, Mass.; Hill AFB, Utah; Kirtland AFB, N.M.; Robins AFB, Ga.; Tinker AFB, Okla.; and Wright-Patterson AFB, Ohio. In addition, the command operates associate units on several non-AFMC bases.

Air Force Space Command

Air Force Space Command, created Sept. 1, 1982, is a major command with headquarters at Peterson Air Force Base, Co. AFSPC provides military focused space and cyberspace capabilities with a global perspective to the joint warfighting team.

Mission
AFSPC's mission is to provide an integrated constellation of space and cyberspace capabilities at the speed of need.

Vision
The leading source of emerging and integrated space and cyberspace capabilities to deliver responsive, assured and decisive power to America and its warfighting commands.

The organization has five strategic priorities:

Guarantee a safe, credible, ready nuclear deterrent force with perfection as the standard
Deliver assured combat power to the joint fight
Forge a battle-ready team by attracting, developing and retaining America's best
Modernize and sustain AFSPC's enduring missions and mature emerging missions
Re-engineer acquisitions to deliver capability at the speed of need

People
Approximately 47,000 professionals, assigned to 88 locations worldwide and deployed to an additional 35 global locations, perform the AFSPC missions.

Organization
Fourteenth Air Force is located at Vandenberg AFB, Calif. Fourteenth Air Force manages the generation and employment of space forces to support U.S. Strategic Command and North American Aerospace Defense Command operational plans and missions.

Twenty-fourth Air Force is located at Lackland AFB, Texas. Twenty-fourth Air Force is the Air Force's warfighting organization that establishes, operates, maintains and defends Air Force networks to assure our missions while presenting a full spectrum of cyber capabilities to combatant commanders.

The **Space and Missile Systems Center** at Los Angeles AFB, Calif., designs and acquires all Air Force and most Department of Defense space systems. It oversees launches, completes on-orbit checkouts and then turns systems over to user agencies. It supports the Program Executive Office for Space on the Global Positioning, Defense Satellite Communications and MILSTAR systems. SMC also supports the Evolved Expendable Launch Vehicle, Defense Meteorological Satellite and Defense Support programs, and the Space Based Infrared System.

The **Space Innovation and Development Center** at Schriever AFB, Colo., is responsible for integrating space systems into the operational Air Force. The mission is to advance full-spectrum warfare through rapid innovation, integration, training testing, and experimentation.

The **Air Force Network Integration Center** at Scott AFB, Ill., is the Air Force focal point for shaping, provisioning, sustaining and integrating the Enterprise Network and enabling assured core cyber capabilities to achieve warfighting advantage. AFNIC's vision is to

integrate the evolving Enterprise Network environment at the speed of need to achieve information dominance and peerless cyberspace warfighting capabilities.

The **Air Force Spectrum Management Office**, located in Alexandria, Va., is responsible for planning, providing, and preserving access to the electromagnetic spectrum for the Air Force and selected DOD activities in support of national policy objectives, systems development, and global operations. The office represents, advocates, and defends Air Force spectrum management interests in DOD, national, and international bodies. AFSMO is the Air Force office of primary responsibility for spectrum, including policy, procedures and guidance, oversight of the electromagnetic spectrum management career field, and payment of the Air Force's annual federal spectrum fee.
AFSPC **major installations** include: Schriever, Peterson and Buckley Air Force bases in Colorado; Los Angeles and Vandenberg Air Force bases in California and Patrick AFB in Florida. Major AFSPC units also reside on bases managed by other commands in New Mexico, Texas, Illinois, Virginia and Georgia. AFSPC manages many smaller installations and geographically separated units in North Dakota, Alaska, Hawaii and across the globe.

Space Capabilities
Spacelift operations at the East and West Coast launch bases provide services, facilities and range safety control for the conduct of DOD, NASA and commercial launches. Through the command and control of all DOD satellites, satellite operators provide force-multiplying effects -- continuous global coverage, low vulnerability and autonomous operations. Satellites provide essential in-theater secure communications, weather and navigational data for ground, air and fleet operations and threat warning.

Ground-based radar and Defense Support Program satellites monitor ballistic missile launches around the world to guard against a surprise missile attack on North America. Space surveillance radars provide vital information on the location of satellites and space debris for the nation and the world. Maintaining space superiority is an emerging capability required to protect our space assets.

Cyberspace Capabilities
Cyberspace operations is all about mission assurance on the network. Cyberspace is a vital domain, critical to military operations that must be protected. AFSPC conducts cyber operations through its subordinate units 24th Air Force, 67th Network Warfare Wing and the 688th Information Operations Wing at Lackland AFB, Texas, as well as the 689th Combat Communications Wing at Robins AFB, Georgia.

Collectively these units are the warfighting organizations that establish, operate, maintain and defend Air Force networks and exploit and monitor other threat networks. These organizations ensure the warfighters maintain an information advantage as the Air Force prosecutes military operations in the joint environment. More than 5,400 men and women conduct or support 24-hour cyberspace operations for 24th Air Force units. In addition, more than 10,000 Air National Guard and Air Force Reserve personnel directly support the AFSPC cyber mission.

Resources
AFSPC acquires, operates and supports the Global Positioning System, Defense Satellite Communications Systems, Defense Meteorological Satellite Program, Defense Support Program, Wideband Global SATCOM Satellite systems and the Space-Based Infrared System Program. AFSPC currently operates the Delta IV and Atlas V launch vehicles. The Atlas V and Delta IV launch vehicles comprise the Evolved Expendable Launch Vehicle program, which is the future of assured access to space. AFSPC's launch operations include the Eastern and Western ranges and range support for all launches, including the space shuttle on the Eastern Range. The command maintains and operates a worldwide network of satellite tracking stations, called the Air Force Satellite Control Network, to provide communications links to satellites.

Ground-based radars used primarily for ballistic missile warning include the Ballistic Missile Early Warning System, PAVE Phased Array Warning System and Perimeter Acquisition Radar Attack radars. The Maui Optical Tracking Identification Facility, Ground-based Electro-Optical Deep Space Surveillance System, Passive Space Surveillance System, phased-array and mechanical radars provide primary space surveillance coverage. New transformational space programs are continuously being researched and developed to enable AFSPC to stay on the leading-edge of technology.

Air Force Global Strike Command

Air Force Global Strike Command is a major command with headquarters at Barksdale Air Force Base, La., in the Shreveport - Bossier City community. AFGSC is responsible for the nation's three intercontinental ballistic missile wings, two B-52 Stratofortress wings and the only B-2 Spirit wing. It is the Air Force's newest command, activated Aug. 7, 2009.

Mission
Develop and provide combat-ready forces for nuclear deterrence and global strike operations -- safe, secure, effective -- to support the president of the United States and combatant commanders.

Vision
American Airmen with special trust and responsibility for the most powerful weapons in our nation's arsenal ... an elite, highly disciplined team ... building a model command.

Personnel
Approximately 23,000 professionals are assigned to the command and deployed to locations around the globe.

Organization
AFGSC has six wings, two geographically-separated squadrons and one detachment in the continental United States. Major units and bases include:

Eighth Air Force, with headquarters at Barksdale AFB, in the Bossier City - Shreveport, La. metro area, supports U.S. Joint Forces Command, and is designated as U.S. Strategic

Command's Task Force 204, providing on-alert, combat-ready forces to the president. The mission of "The Mighty Eighth" is to safeguard America's interests through strategic deterrence and global combat power. Eighth Air Force controls long-range nuclear-capable bomber assets throughout the United States and overseas locations. Its flexible, conventional and nuclear deterrence mission provides the capability to deploy forces and engage enemy threats from home station or forward positioned, anywhere, any time. The 8th Air Force motto is "Deterrence through strength, global strike on demand."

Eighth Air Force has three bomber wings -- the 509th Bomb Wing at Whiteman AFB, Mo.; the 2nd Bomb Wing at Barksdale AFB, La.; and the 5th Bomb Wing at Minot AFB, N.D.

Twentieth Air Force, headquartered at F.E. Warren AFB, Wyo., also supports U.S. Strategic Command. Twentieth Air Force is responsible for maintaining and operating the Air Force's ICBM force. Designated as STRATCOM's Task Force 214, 20th Air Force provides on-alert, combat-ready ICBMs to the president.

Twentieth Air Force has three ICBM wings -- the 90th Missile Wing at F.E. Warren AFB, Wyo.; the 341st Missile Wing at Malmstrom AFB, Mont.; and the 91st Missile at Minot AFB, N.D.

Other units
In addition, two squadrons, the 576th Flight Test Squadron at Vandenberg AFB, Calif., and the 625th Strategic Operations Squadron at Offutt AFB, Neb., fall under the command as well an Air Operations Group at Otis Air National Guard Base in Mass., and a detachment at Langley AFB, Va.

ICBM Capabilities
America's alert ICBMs are ready to launch on any given day, and America's ICBM team plays a critical role in maintaining global stability and ensuring the nation's safety and security. Approximately 450 Minuteman III missiles provide a critical component of America's on-alert strategic forces. As the nation's "silent sentinels," ICBMs, and the people who operate them, have remained on continuous, around-the-clock alert since 1959.

AFGSC is the Air Force's lead command for and largest operator of UH-1N Iroquois helicopters. The UH-1N supports ICBM operations in missile fields controlled by F.E. Warren AFB, Malmstrom AFB and Minot AFB.

Bomber Capabilities
The B-2 Spirit is a long-range nuclear and conventional stealthy bomber. The bomber can fly at high subsonic speeds at altitudes that can reach 50,000 feet. Its unrefueled range is at least 6,000 nautical miles. The B-2 brings massive firepower, in a short time, anywhere on the globe through the most challenging defenses.

The B-52 Stratofortress is a long-range, nuclear and conventional heavy bomber that can perform a variety of missions. The bomber can fly at high subsonic speeds at altitudes reaching 50,000 feet. It has an unrefueled combat range in excess of 8,800 miles. It can

carry precision-guided ordnance with worldwide precision navigation.

Air Force Special Operations Command

Air Force Special Operations Command was established May 22, 1990, with headquarters at Hurlburt Field, Fla. AFSOC is the Air Force component of U.S. Special Operations Command, a unified command located at MacDill Air Force Base, Fla.

Mission

AFSOC provides Air Force special operations forces for worldwide deployment and assignment to regional unified commands. The command's SOF are composed of highly trained, rapidly deployable Airmen. These forces conduct global special operations missions ranging from precision application of firepower, to infiltration, exfiltration, resupply and refueling of SOF operational elements.

AFSOC's unique capabilities include airborne radio and television broadcast for psychological operations, as well as aviation foreign internal defense instructors to provide other governments military expertise for their internal development. The command's special tactics squadrons combine combat controllers, special operations weathermen and pararescuemen with other service SOF to form versatile joint special operations teams. The command's core missions include battlefield air operations; agile combat support; aviation foreign internal defense; information operations; precision aerospace fires; psychological operations; specialized air mobility; specialized refueling; and intelligence, surveillance and reconnaissance.

Vision

America's specialized airpower...a step ahead in a changing world, delivering special operations power anytime, anywhere.

Personnel and Resources

AFSOC has approximately 12,900 active-duty, Air Force Reserve, Air National Guard and civilian personnel. The command's active duty and reserve component flying units operate fixed and rotary-wing aircraft, including the CV-22, AC-130H/U, C-130, EC-130, MC-130, U-28A and PC-12.

Organization

The command's forces are organized under two active-duty wings, a numbered air force, one reserve wing, one ANG wing, two overseas groups, and several direct reporting units.

Numbered Air Force

23rd Air Force, at Hurlburt Field, was established on Jan. 25, 2008, to provide worldwide Air Force special operations command and control support to combatant commanders. Twenty-third AF is designated as the air component's unit of execution to U.S. Special Operations Command, providing a special operations liaison element to regional air operations centers and a forward command and control team to be the air component to a joint special operations task force commander.

Wings
The **1st Special Operations Wing,** at Hurlburt Field, and the **27th Special Operations Wing,** at Cannon Air Force Base, N.M., are composed of a variety of specialized aircraft to support special operations worldwide.

Groups
The **352nd Special Operations Group,** at Royal Air Force Mildenhall, England, is the Air Force component for Special Operations Command Europe.

The **353rd Special Operations Group,** at Kadena Air Base, Japan, is the Air Force component for Special Operations Command Pacific.

The **720th Special Tactics Group** at Hurlburt Field trains, organizes, and equips more than 800 combat controllers, special operations weathermen, and pararescuemen for assignment to special tactics squadrons.

Other Subordinate Units
The **U.S. Air Force Special Operations School** at Hurlburt Field provides special operations-related education to Department of Defense personnel, government agencies and allied nations.
The **18th Flight Test Squadron,** at Hurlburt Field and with detachments at Edwards AFB, Calif., and Marine Corps Air Station New River, N.C., conducts operational and maintenance suitability tests and evaluations for aircraft, equipment, concepts, tactics and procedures for employment of special operations forces.

Gained Air Reserve Component
919th Special Operations Wing, at Duke Field, Fla., is the command's Reserve special operations wing. It provides MC-130E and MC-130P aircraft that support helicopter refueling requirements to USSOCOM.

Gained Air National Guard Units
193rd Special Operations Wing, at Harrisburg International Airport, Pa., provides the only airborne psychological operations platform in the Department of Defense with the EC-130 Commando Solo.

123rd Special Tactics Squadron at Standiford Field, Ky., provides combat controllers and pararescuemen for worldwide operational needs.

209th Civil Engineer Squadron located at Gulfport, Miss., is AFSOC's only Guard civil engineer squadron supporting the command's transportable collective protection system mission.

227th Special Operations Flight at McGuire Air Force Base, N.J., provides modified C-32B aircraft supporting worldwide airlift operations.

280th Combat Communications Squadron at Dothan, Ala., is AFSOC's only Guard

communications squadron.

107th Weather Flight at Selfridge Air National Guard Base, Mich.; **146th Weather Flight** at GTR Pittsburgh Air Guard Station; and the **181st Weather Flight** at Dallas Naval Air Station, are the command's three National Guard weather units.

Air Mobility Command

Air Mobility Command, a major command with headquarters at Scott Air Force Base, Ill., was created June 1, 1992. AMC provides America's Global Reach. This rapid, flexible and responsive air mobility promotes stability in regions by keeping America's capability and character highly visible.

Mission

Air Mobility Command's is to provide global air mobility ... right effects, right place, right time. The command also plays a crucial role in providing humanitarian support at home and around the world. AMC Airmen -- active duty, Air National Guard, Air Force Reserve and civilians -- provide airlift and aerial refueling for all of America's armed forces. Many special duty and operational support aircraft and stateside aeromedical evacuation missions are also assigned to AMC.

U.S. forces must be able to provide a rapid, tailored response with a capability to intervene against a well-equipped foe, hit hard and terminate quickly. Rapid global mobility lies at the heart of U.S. strategy in this environment, without the capability to project forces, there is no conventional deterrent. As U.S. forces stationed overseas continue to decline, global interests remain, making the unique capabilities only AMC can provide even more in demand.

Global Reach Capabilities

As the air component of the U.S. Transportation Command, AMC serves many customers and, as the single manager for air mobility, AMC's customers have only one number to call for Global Reach.

Airlifters provide the capability to deploy our armed forces anywhere in the world and help sustain them in a conflict. Air refuelers are the lifeline of Global Reach, increasing range, payloads and flexibility. Since Air Force tankers can also refuel Navy, Marine and many allied aircraft, they leverage all service capabilities on land, sea and in the air. Refuelers also have an inherent cargo-carrying capability, maximizing AMC's lift options.

Personnel

AMC has nearly 136,000 active-duty and Air Reserve Component military and civilian personnel.

Resources

AMC's mobility aircraft include the C-5 Galaxy, KC-10 Extender, C-17 Globemaster III, C-130 Hercules and KC-135 Stratotanker. Operational support aircraft are the VC-25 (Air

Force One), C-9, C-20, C-21, C-32, C-37, C-40 and UH-1.

Organization
AMC has one numbered Air Force, the 18th Air Force, headquartered at Scott AFB and tasked with tasking and executing all air mobility missions. Units reporting to 18th Air Force include all AMC wings and groups based in the continental United States, as well as two expeditionary mobility task forces, the 15th EMTF at Travis AFB, Calif. and the 21st EMTF at McGuire AFB, N.J. The 15th and 21st EMTFs serve as lead agencies for conducting mobility operations worldwide.

The 618th Tanker Airlift Control Center, located at Scott AFB, also reports to 18th Air Force and serves as the organization's air operations hub, planning and directing tanker and transport aircraft operations around the world.

AMC's active-duty bases are: Charleston AFB, S.C.; Dover AFB, Del.; Fairchild AFB, Wash.; Grand Forks AFB, N.D.; Little Rock AFB, Ark.; MacDill AFB, Fla.; McChord AFB, Wash.; McConnell AFB, Kan.; McGuire AFB; Pope AFB, N.C.; Scott AFB; and Travis AFB. In addition, the 89th Airlift Wing at Andrews AFB, Md.; the 19th Air Refueling Group at Robins AFB, Ga.; and the 317th Airlift Group at Dyess AFB, Texas, are assigned to AMC.

AMC also has one major direct reporting unit, the USAF Expeditionary Center located at Fort Dix, N.J., which serves as the Air Force's premier organization for expeditionary innovation, education, training and exercises.

Pacific Air Forces

Pacific Air Forces (PACAF), with headquarters at Hickam Air Force Base, Hawaii, is the air component of the U.S. Pacific Command.

Mission
PACAF's primary mission is to provide U.S. Pacific Command integrated expeditionary Air Force capabilities to defend the homeland, promote stability, dissuade/deter aggression, and swiftly defeat enemies.

The command's vision is to bring the full power of America's Air Force and the skill of its Airmen to promote peace and stability in the Asia-Pacific region.

PACAF's area of responsibility extends from the west coast of the United States to the east coast of Africa and from the Arctic to the Antarctic, covering more than 100 million square miles. The area is home to 50 percent of the world's population in 36 nations and over one-third of the global economic output. The unique location of the Strategic Triangle (Hawaii-Guam-Alaska) gives our nation persistent presence and options to project U.S. airpower from sovereign territory.

Personnel and Resources
PACAF has approximately 43,000 military and civilian personnel serving in nine strategic

locations and numerous smaller facilities, primarily in Hawaii, Alaska, Japan, Guam and South Korea. Approximately 340 fighter and attack aircraft are assigned to the command with about 100 deployed aircraft rotating on Guam. PACAF will be home to three of the seven F-22 Raptor fighter squadrons, and is already home to the only two C-17 Globemaster III units based outside the continental United States.

Organization
PACAF's major units are 5th Air Force, Yokota Air Base, Japan; 7th Air Force, Osan AB, South Korea; 11th Air Force, Elmendorf Air Force Base, Alaska; and 13th Air Force, Hickam AFB, Hawaii.

Major units also include 3rd Wing, Elmendorf AFB; 8th Fighter Wing, Kunsan AB, South Korea; 15th Airlift Wing, Hickam AFB; 18th Wing, Kadena AB, Japan (Okinawa); 35th Fighter Wing, Misawa AB, Japan; 36th Wing, Andersen AFB, Guam; 51st Fighter Wing, Osan AB; 354th Fighter Wing, Eielson AFB, Alaska; and 374th Airlift Wing, Yokota AB, Japan.

United States Air Forces in Europe

U.S. Air Forces in Europe (USAFE), headquartered at Ramstein Air Base, Germany, is a major command of the U.S. Air Force. It is also the air component for U.S. European Command, a Department of Defense unified command.

Mission
As the air component for USEUCOM, USAFE directs air operations in a theater spanning three continents, covering more than eight million square miles, containing 51 independent states, and possessing one-eighth of the world's population and about one-fourth of the world's Gross Domestic Product.

During the Cold War, USAFE was a fight-in-place force postured for a large-scale conflict. Since the fall of the Soviet Union, it has transitioned to an Air Expeditionary Force with a mobile and deployable mix of people and resources that can simultaneously operate in multiple locations. Its role includes warfighting as well as humanitarian and peacekeeping operations, and other non-traditional contingencies throughout its area of responsibility

USAFE’s peacetime mission is to train and equip Air Force units pledged to NATO. In fulfilling its NATO responsibilities, USAFE maintains combat-ready wings based from the United Kingdom to Turkey. USAFE plans, conducts, controls, coordinates and supports air and space operations in Europe and Asia to achieve U.S. national and NATO objectives based on taskings by the USEUCOM commander.

USAFE assets stand ready to perform close air support, air interdiction, air defense, in-flight refueling, long-range transport and support of maritime operations. The command maintains a formidable force despite a rapid drawdown that saw its main operating bases cut by 67 percent following the end of the Cold War. USAFE

remains a highly responsive and capable combat force, as witnessed in the command's support of contingency and humanitarian operations throughout Europe and parts of Africa.

Personnel and Resources
More than 39,000 active-duty, Reserve, Air National Guard and civilian employees are assigned to USAFE. Equipment assets include about 225 fighter, attack, rotary wing, tanker, and transport aircraft, and a full complement of conventional weapons.

Organization
USAFE consists of two Numbered Air Forces, seven main operating bases and 114 geographically separated locations.

Third Air Force (Air Forces Europe) supports USEUCOM. It is USAFE's Component Numbered Air Force responsible for maintaining a continuous theater-wide situational awareness and providing the commander of Air Force forces here the capability to command and control assigned and attached Airmen.

Seventeenth Air Force (Air Forces Africa) supports U.S. Africa Command via command and control of air forces to conduct sustained security engagement and operations as directed to promote air domain safety, security and development. It operates as a functional staff, while its 617th Air and Space Operations Center at oversees air operations on the continent.

The command's main operating bases are: RAF Lakenheath and Mildenhall in England; Ramstein and Spangdahlem Air Bases in Germany, Aviano Air Base in Italy, Lajes Air Base in the Azores, and Incirlik Air Base in Turkey. These bases report to Ramstein's Third Air Force for day-to-day and contingency operations.

Air Force Reserve Command

The Air Force Reserve Command, with headquarters at Robins Air Force Base, Ga., became the ninth major command of the Air Force on Feb. 17, 1997, as a result of Title XII - Reserve Forces Revitalization - in Public Law 104-201, the National Defense Authorization Act of Fiscal Year 1997. Before this act, the Air Force Reserve was a field operating agency of the Air Force established on April 14, 1948.

Mission
The Air Force Reserve Command supports the Air Force mission to defend the United States through control and exploitation of air and space by supporting Global Engagement. The AFRC plays an integral role in the day-to-day Air Force mission and is not a force held in reserve for possible war or contingency operations.

Resources
AFRC has 35 flying wings equipped with their own aircraft and nine associate units that share aircraft with an active-duty unit. Four space operations squadrons share satellite control

mission with the active force. There also are more than 620 mission support units in the AFRC, equipped and trained to provide a wide range of services, including medical and aeromedical evacuation, aerial port, civil engineer, security force, intelligence, communications, mobility support, logistics and transportation operations among others.

The AFRC has 447 aircraft assigned to it. The inventory includes the latest, most capable models of the F-16 Fighting Falcon, O/A-10 Thunderbolt II, C-5 Galaxy, C-141 Starlifter, C-130 Hercules, MC-130 Combat Talon I, HC-130, WC-130, KC-135 Stratotanker, B-52 Stratofortress and HH-60 Pave Hawk helicopter. On any given day, 99 percent of these aircraft are mission ready and able to deploy within 72 hours. These aircraft and support personnel are gained by Air Combat Command, Air Mobility Command and Air Force Special Operations Command if mobilized. The aircraft and their crews are immediately deployable without need for additional training.

Organization

Office of the Air Force Reserve

The Office of Air Force Reserve, located in the Pentagon, Washington, D.C., is headed by the Chief of Air Force Reserve, a Reserve Lieutenant General, who is the principal adviser to the Chief of Staff of the Air Force for all Reserve matters. Consistent with Air Force policy, the Chief of Air Force Reserve establishes Reserve policy and initiates plans and programs. In addition to being a senior member of the Air Staff, he is also commander of the Air Force Reserve Command.

Headquarters Air Force Reserve Command

Headquarters AFRC supervises the unit training program, provides logistics support, reviews unit training and ensures combat readiness. Within the headquarters element are directorates for operations, logistics, comptroller, administration and personnel support.

Fourth Air Force at March Air Reserve Base, Calif.; 10th Air Force at Carswell Air Reserve Station, Texas and 22nd Air Force at Dobbins ARB, Ga., report to Headquarters AFRC. They act as operational headquarters for their subordinate units, providing training, operational, logistical and safety support, and regional support for geographically separated units.

Air Reserve Personnel Center

Air Reserve Personnel Center, a direct reporting unit located in Denver, Colo., provides personnel services to all members of the AFRC and Air National Guard. Services include assignments, promotions, career counseling and development, and separation actions. Air Reserve Personnel Center also manages the individual mobilization augmentee (IMA) program for the Ready Reserve, and maintains master personnel records for all Guard and Reserve members not on extended active duty. In times of national need, the center would mobilize IMAs and certain categories of Air Force retirees.

Reserve Categories

Reservists are categorized by several criteria in the Ready Reserve, Standby Reserve or Retired Reserve. Numbers shown reflect actual numbers, not authorizations.

Ready Reserve
(Note: Counted Unit Program, Individual Ready Reserve, IMA and Selected Reserve)
The Ready Reserve is made up of 193,042 trained reservists who may be recalled to active duty to augment active forces in time of war or national emergency. Of this number, 72,195 reservists are members of the Selected Reserve who train regularly and are paid for their participation in unit or individual programs.

These reservists are combat ready and can deploy to anywhere in the world in 72 hours. Additionally, 48,981 are part of the Individual Ready Reserve. Members of the IRR continue to have a service obligation, but do not train and are not paid. They are subject to recall if needed. The president may recall Ready Reserve personnel from all Department of Defense components for up to 270 days if necessary. Some 24,000 Air Force reservists from 220 units were activated during the Persian Gulf War to work side-by-side with their active-duty counterparts.

Standby Reserve
The Standby Reserve includes reservists whose civilian jobs are considered key to national defense, or who have temporary disability or personal hardship. Most standby reservists do not train and are not assigned to units. There are 16,858 reservists in this category.

Retired Reserve
The Retired Reserve is made up of officers and enlisted personnel who receive pay after retiring from active duty or from the Reserve, or are reservists awaiting retirement pay at age 60.

Training
Selected reservists train to active-duty standards through the unit training or IMA training programs. Mission readiness is verified periodically, using active-force inspection criteria. Reserve training often is scheduled to coincide with Air Force mission support needs. Since most AFRC skills are the same needed in peace or war, training often results in the accomplishment of real-world mission requirements. This mission support is referred to as a by-product of training and benefits both the AFRC and the active force.

Unit Training Program
More than 60,100 reservists are assigned to specific Reserve units. These are the people who are obligated to report for duty one weekend each month and two weeks of annual training a year. Most work many additional days. Reserve aircrews, for example, average more than 100 duty days a year, often flying in support of national objectives at home and around the world.

Air reserve technicians (ART) are a special group of reservists who work as civil service employees during the week in the same jobs they hold as reservists on drill weekends. ARTs are the full-time backbone of the unit training program, providing day-to-day leadership, administrative and logistical support, and operational continuity for their units. More than 9,500 reservists, more than 15 percent of the force, are ARTs.

IMA Training Program
The IMA training program is made up of approximately 13,144 individual mobilization augmentees. IMAs are assigned to active-duty units in specific wartime positions and train on an individual basis. Their mission is to augment active-duty manning by filling wartime surge requirements. IMAs were used extensively during operations Desert Storm and Iraqi Freedom and can be found in nearly every career field.

Reserve Associate Program
The AFRC Associate Program provides trained crews and maintenance personnel for active-duty owned aircraft and space operations. This unique program pairs a Reserve unit with an active-duty unit to share a single set of aircraft. The result is a more cost-effective way to meet increasing mission requirements. Associate aircrews fly C-5 Galaxies, C-141 Starlifters, C-17 Globemaster IIIs, KC-10 Extenders, KC-135 Stratotanker, T-1 Jayhawks, T-37 Tweets, T-38 Talons, F-16 Fighting Falcons, MC-130P Combat Shadows and MC-130 Talon I (Reserve Associate Unit), and E-3 Sentry Airborne Warning and Control System aircraft. Space Operations associate units operate Defense Meteorological, Defense Support Program and Global Positioning System satellites.

Real-World Missions
Air Force reservists are on duty today around the world carrying out the Air Force vision of global vigilance, reach and power. A proven and respected combat force, AFRC also is quick to lend a helping hand. Humanitarian relief missions may involve anything from repairing roads and schools in a small village in Central America, to airlifting badly needed supplies into a devastated area to rescuing the victims of nature's worst disasters.

At the request of local, state or federal agencies, AFRC conducts aerial spray missions using specially equipped C-130s. With the only fixed-wing capability in the Department of Defense, these missions range from spraying pesticides to control insects to spraying compounds used in the control of oil spills. Other specially equipped C-130s check the spread of forest fires by dropping fire retardant chemicals. Real-world missions also include weather reconnaissance, rescue, international missions in support of U.S. Southern Command and aeromedical evacuation.

The AFRC also takes an active role in the nation's counternarcotic effort. Reservists offer a cost-effective way to provide specialized training, airlift, analysis and other unique capabilities to local, state and federal law enforcement officials.

V. Air National Guard[4]

The Air National Guard is administered by the National Guard Bureau, a joint bureau of the departments of the Army and Air Force, located in the Pentagon, Washington, D.C. It is one of the seven Reserve components of the United States armed forces that augments the active components in the performance of their missions.

[4] The source of this data is http://www.af.mil/factsheets, or for further information go to the National Guard Bureau web site at http://www.ang.af.mil.

Mission
The Air National Guard has both a federal and state mission. The dual mission, a provision of the U. S. Constitution, results in each guardsman holding membership in the National Guard of his or her state and in the National Guard of the United States.

Federal Mission
The Air National Guard's federal mission is to maintain well-trained, well-equipped units available for prompt mobilization during war and provide assistance during national emergencies (such as natural disasters or civil disturbances). During peacetime, the combat-ready units and support units are assigned to most Air Force major commands to carry out missions compatible with training, mobilization readiness, humanitarian and contingency operations such as Operation Enduring Freedom in Afghanistan. Air National Guard units may be activated in a number of ways as prescribed by public law. Most of the laws may be found in Title 10 of the U.S. Code.

The Air National Guard provides almost half of the Air Force's tactical airlift support, combat communications functions, aeromedical evacuations and aerial refueling. In addition, the Air National Guard has total responsibility for air defense of the entire United States.

State Mission
When Air National Guard units are not mobilized or under federal control, they report to the governor of their respective state, territory (Puerto Rico, Guam, Virgin Islands) or the commanding general of the District of Columbia National Guard. Each of the 54 National Guard organizations is supervised by the adjutant general of the state or territory. Under state law, the Air National Guard provides protection of life, property and preserves peace, order and public safety. These missions are accomplished through emergency relief support during natural disasters such as floods, earthquakes and forest fires; search and rescue operations; support to civil defense authorities; maintenance of vital public services and counterdrug operations.

Force Structure
The primary sources of full-time support for Air National Guard units are the dual-status military technician and guardsmen on active duty. These people perform day-to-day management, administration and maintenance. By law, dual-status military technicians are civil service employees of the federal government who must be military members of the unit that employs them. Technicians train with the unit and are mobilized with it when it's activated. Active-duty members serve under the command authority of their respective state or territorial governors until mobilized for federal duty. The Air National Guard has more than 106,000 officers and enlisted people who serve in 89 flying units and 579 mission support units.

The National Guard Bureau, both a staff and operating agency, administers the federal functions of the Army and the Air National Guard. As a staff agency, the National Guard Bureau participates with the Army and Air staffs in developing and coordinating programs that directly affect the National Guard. As an operating agency, the National Guard Bureau

formulates and administers the programs for training, development and maintenance of the Army National Guard and Air National Guard and acts as the channel of communication between the Army, Air Force and the 54 states and territories where National Guard units are located.

Personnel and Resources
The authorized strength for the Air National Guard for the current fiscal year is 106,700. The operating budget for this fiscal year is $3,022 million for personnel, $6,182 million for operation and maintenance, for a total of $9,204 million.

Flying Units/Functions and Capabilities
Besides maintaining 94 percent of the U.S. alert sites for air defense, the Air National Guard flew more than 1,300 sorties in fiscal 2010 to protect U.S. air sovereignty while still performing many other Air Force-related roles and missions.

The Air National Guard provides tactical airlift, air refueling tankers, general purpose fighters, rescue and recovery capabilities, tactical air support, weather flights, strategic airlift, special operations capabilities and aeromedical evacuation units.

Airlift squadrons fly C-130 Hercules, C-5 Galaxy, and C-17 Globemaster III aircraft that transport people, equipment and supplies. Air refueling units, flying KC-135 Stratotankers, provide air-to-air refueling for strategic and tactical aircraft.

The Air National Guard has three rescue and recovery squadrons that fly HH-60 helicopters and HC-130 aircraft. These units provide important lifesaving capabilities and services to civilian and military agencies. Air support units that fly A-10C Thunderbolt IIs provide forward air control support of close-air support missions. The general-purpose fighter force is equipped with F-22 Raptor, F-15 Eagle, F-16 Fighting Falcon and A-10 aircraft.

Support Unit Functions and Capabilities
Support units are essential to the Air Force mission. In the Air National Guard they include air traffic control units, combat communications squadrons, civil engineering and communication flights and squadrons. Support units also include weather flights, aircraft control and warning squadrons, a range control squadron and an electronic security unit.

Air National Guard weather flights provide weather support to Air Force and Army National Guard and Army Reserve divisions and brigades. During mobilization or federal call up, weather flight units are under the Air Combat Command, except for one, which falls under Pacific Air Forces.

Civil engineer squadrons provide engineer and firefighter forces trained and equipped to deploy on short notice. Other civil engineer squadrons provide self-sufficient, deployable civil engineer teams to perform heavy repair and maintenance on air bases and remote sites.

Aerial port units provide trained people to support Air Mobility Command's two major theater war commitments. They deploy to 20 active-duty aerial port locations worldwide for

annual tour training.

Medical units located with parent flying organizations provide day-to-day health care for flying and non-flying people during their two-week annual training or during monthly two-day unit training assemblies.

VI. The Air and Space Expeditionary Force

The Air and Space Expeditionary Force (AEF) is the Air Force's deployment concept designed to provide Combatant Commanders with rapid, responsive and reliable air and space power to meet specific theater needs across the spectrum of response options from humanitarian relief to combat operations. It is designed to be tailored to meet the needs of Regional Combatant Commanders and Joint Task Force commanders. When deployed, the AEF is called an Air and Space Expeditionary *Task* Force (AETF). The AETF can act as the JFACC for a Joint Task Force if there is not a mature C2 system already in the theater. The AETF also maximizes integration of our Total Force and joins the Army and other services in an Expeditionary culture.

The Air Force has incorporated on call forces into the standard AEF rotation. During each deployment period, a designated pair of AEFs is prepared for immediate deployment (more than two AEFs can be deployed at one time, as was the case during Operation IRAQI FREEDOM). Each AEF comprises combat air forces (CAF), mobility air forces (MAF), and low density, high demand (LD/HD) forces consisting of various units. The USAF's LD/HD forces include battle management, combat search and rescue, and reconnaissance assets. They are in near constant use and, consequently, rotate more frequently than most CAF or MAF elements.

Due to continuous deployment requirements, the Air Force recently introduced a tempo-based Global AEF force-generation construct. This synchronizes the AEF with the joint-planning process and allows the Air Force to more efficiently meet combatant-commander requirements. The new construct uses a tempo-based rule set which assigns functional area unit type codes (attack aircraft, bomber aircraft, civil engineering, medical units, etc) to one of five tempo bands. The baseline, tempo band "A," matches the current AEF construct with five 120-day AEF pairs operating on a 1:4 deploy-to-dwell tempo. Tempo bands "B" through "E" have been added to provide predictability, structure and rule sets for the nearly 50 percent of functional areas currently operating at a tempo greater than 1:4 or for a duration greater than 120 days. UTCs will be postured in bands "B" through "E" in six month blocks, at a 1:4, 1:3, 1:2 and 1:1 deploy-to-dwell respectively. This means, for example, that an Airman aligned in Band "C" with a 1:3 deploy-to-dwell tempo can expect to deploy for six months (179 days), and then spend 18 months in dwell before becoming vulnerable to deploy again.
The bands are as follows:

Band A/B (1:4)
Financial management (enlisted, O-1 to O-3)
Legal

Chaplain (except Catholic, Islamic and Orthodox)

Band C (1:3)
Logistics and plans
Materiel management
Public affairs (enlisted)
Medical (critical care and surgical)
Weather (Air Force support)
Chaplain (Catholic and Orthodox)

Band D (1:2)
PA (officers)
Office of Special Investigation (except counter-intelligence operations)
FM (O-4 and up)
Logistics readiness officers
Aerial port
Traffic management
Vehicle operations
Medical (behavioral health)
Vehicle management
Civil engineering (Prime BEEF and explosive ordnance disposal)

Band E (1:1)
Chaplain (Islamic)
Intelligence
Contracting
OSI (CI ops)
Security forces

VII. Aircraft Capabilities

Only summary data for major fighter, bomber, airlift, and support aircraft will be listed here. The USAF flies several other aircraft as well. Go to Air Force Link http://www.af.mil, select Library, and then Fact Sheets to view the individual capabilities of these and other aircraft. All data in this section are drawn from these same Fact Sheets.

A-10 THUNDERBOLT II

Primary Function: A-10 -- close air support, OA-10 - airborne forward air control
Speed: 420 miles per hour (Mach 0.56)
Range: 800 miles (695 nautical miles)
Armament: One 30 mm GAU-8/A seven-barrel Gatling gun; up to 16,000 pounds (7,200 kilograms) of mixed ordnance on eight under-wing and three under-fuselage pylon stations, including 500 pounds (225 kilograms) of Mk-82 and 2,000 pounds (900 kilograms) of Mk-84 series low/high drag bombs, incendiary cluster bombs, combined effects munitions, mine dispensing munitions, AGM-65 Maverick missiles and laser-guided/electro-optically guided bombs; infrared countermeasure flares; electronic countermeasure chaff; jammer pods; 2.75-

inch (6.99 centimeters) rockets; illumination flares and AIM-9 Sidewinder missiles.
Crew: One

AC-130H/U GUNSHIP
Primary Function: Close air support, air interdiction and force protection
Speed: 300 mph (Mach .4) (at sea level)
Range: Approximately 1,300 nautical miles; global with air refueling.
Armament: AC-130H/U: 40mm cannon and 105mm cannon; **AC-130U:** 25mm gun
Crew: AC-130U - Five officers (pilot, co-pilot, navigator, fire control officer, electronic warfare officer) and eight enlisted (flight engineer, TV operator, infrared detection set operator, loadmaster, four aerial gunners)

B-1B LANCER
Primary Function: Long-range, multi-role, heavy bomber
Speed: 900-plus mph
Range: Intercontinental
Crew: Four (aircraft commander, copilot, and 2 Weapon System Officers (WSO)
Armament: 84 500-pound Mk-82 or 24 2,000-pound Mk-84 general purpose bombs; up to 84 500-pound Mk-62 or 8 2,000-pound Mk-65 Quick Strike naval mines; 30 cluster munitions (CBU-87, -89, -97) or 30 Wind-Corrected Munitions Dispensers (CBU-103, -104, -105); up to 24 2,000-pound GBU-31 or 15 500-pound GBU-38 Joint Direct Attack Munitions; up to 24 AGM-158A Joint Air-to-Surface Standoff Missiles

B-2 SPIRIT
Primary function: Multi-role heavy bomber
Speed: High subsonic
Range: Intercontinental
Armament: Conventional or nuclear weapons
Payload: 40,000 pounds (18,144 kilograms)
Crew: Two pilots

B-52 STRATOFORTRESS
Primary Function: Heavy bomber
Speed: 650 miles per hour (Mach 0.86)
Range: Unrefueled 8,800 miles (7,652 nautical miles)
Armament: Approximately 70,000 pounds (31,500 kilograms) mixed ordnance -- bombs, mines and missiles. (Modified to carry air-launched cruise missiles)
Crew: Five (aircraft commander, pilot, radar navigator, navigator and electronic warfare officer)

C-5 GALAXY
Primary Function: Outsize cargo transport
Cargo Compartment: height , 13.5 feet (4.11 meters); width, 19 feet (5.79 meters); length, 143 feet, 9 in (43.8 meters)
Pallet Positions: 36
Maximum Cargo: 270,000 pounds (122,472 kilograms)

Speed: 518 mph (.77 Mach)
Range: 6,320 nautical miles without refueling; global with air refueling
Crew: 7 (pilot, co-pilot, two flight engineers and three loadmasters)

C-17 GLOBEMASTER III
Primary Function: Cargo and troop transport
Cargo Compartment: length, 88 feet (26.82 meters); **width**, 18 feet (5.48 meters); **height**, 12 feet 4 inches (3.76 meters)
Speed: 450 knots at 28,000 feet (8,534 meters) (Mach .74)
Range: Global with in-flight refueling
Crew: Three (two pilots and one loadmaster)
Load: 102 troops/paratroops; 36 litter and 54 ambulatory patients and attendants; 170,900 pounds (77,519 kilograms) of cargo (18 pallet positions)

C-130 HERCULES
Primary Function: Global airlift
Cargo Compartment: C-130E/H/J/J-30: length, 40 feet (**J-30** variant 55 feet) (12.31 meters); width, 119 inches (3.12 meters); height, 9 feet (2.74 meters). Rear ramp: length, 123 inches (3.12 meters); width, 119 inches (3.02 meters)
Speed: C-130E/H/J/J-30: 345 – 417mph
Maximum Allowable Payload: C-130E/H/J/J-30: 42,000 – 44,000 pounds
Maximum Normal Payload: C-130E/H/J/J-30: 34,000 - 36,500 pounds
Range at Maximum Normal Payload: C-130E, 1,150 miles (1000 nautical miles); **C-130H**, 1208 miles (1,050 nautical miles); **C-130J**, 2,071 miles (1,800 nautical miles); **C-130J-30**, 1,956 miles (1,700 nautical miles)
Range with 35,000 pounds of Payload: C-130E, 1,438 miles (1,250 nautical miles); **C-130H,** 1,496 miles (1,300 nautical miles); **C-130J,** 1,841 miles (1,600 nautical miles); **C-130J-30,** 2,417 miles (2,100 nautical miles)
Maximum Load: C-130E/H/J: 6 pallets or 74 litters or 16 CDS bundles or 92 combat troops or 64 paratroopers, or a combination of any of these up to the cargo compartment capacity or maximum allowable weight.
C-130J-30: 8 pallets or 97 litters or 24 CDS bundles or 128 combat troops or 92 paratroopers, or a combination of any of these up to the cargo compartment capacity or maximum allowable weight.
Crew: C-130E/H: Five (two pilots, navigator, flight engineer and loadmaster)
C-130J/J-30: Three (two pilots and loadmaster)
Aeromedical Evacuation Role: Minimum medical crew of three is added (one flight nurse and two medical technicians). Medical crew may be increased to two flight nurses and four medical technicians as required by the needs of the patients.

CV-22 OSPREY
Primary function: Special operations forces long-range infiltration, exfiltration, and resupply
Speed: 277 miles per hour (241 knots) (cruising speed)
Ceiling: 25,000 feet (7,620 meters)
Maximum Vertical Takeoff Weight: 52,870 pounds (23,982 kilograms)

Maximum Rolling Takeoff Weight: 60,500 pounds (27,443 kilograms)
Range: 2,100 nautical miles with internal auxiliary fuel tanks
Payload: 24 troops (seated), 32 troops (floor loaded) or 10,000 pounds of cargo
Crew: Four (pilot, copilot and two enlisted flight engineers)

E-3 SENTRY (AWACS)
Primary Function: Airborne battle management, command and control
Speed: Optimum cruise 360 mph (Mach 0.48)
Range: more than 5,000 nautical miles (9,250 km)
Crew: Flight crew of four plus mission crew of 13-19 specialists (mission crew size varies according to mission)

EC-130H COMPASS CALL
Primary Function: Electronic warfare, suppression of enemy air defenses and offensive counter information
Speed: 300 mph (Mach 0.52) at 20,000 feet (6,060 meters)
Maximum Takeoff Weight: 155,000 pounds (69,750 kilograms)
Crew: Thirteen (two pilots, navigator, flight engineer, electronic warfare officer, mission crew supervisor, four cryptologic linguists, high band operator, acquisition operator and an airborne maintenance technician)

EC-130J COMMANDO SOLO
Primary Function: Psychological and information operations
Cruise speed: 335 mph
Ceiling: 28,000 feet (8,534 meters)
Maximum Takeoff Weight: 164,000 pounds
Range: 2,300 nautical miles unrefueled
Crew: pilot, copilot, flight systems officer, mission systems officer; two loadmasters and five electronic communications systems operators

E-8C JOINT STARS
Primary Function: Airborne battle management
Speed: Optimum orbit speed 449 - 587 mph (Mach 0.52 - 0.65)
Range: 9 hours
Crew: Flight crew of four plus 15 Air Force and three Army specialists (crew size varies according to mission)

F-15 EAGLE
Primary function: Tactical fighter
Speed: 1,875 mph (Mach 2 class)
Range: 3,450 miles (3,000 nautical miles) ferry range with conformal fuel tanks and three external fuel tanks
Crew: F-15A/C: one. F-15B/D/E: two
Armament: One internally mounted M-61A1 20mm, six-barrel cannon with 940 rounds of ammunition; four AIM-9L/M Sidewinder and four AIM-7F/M Sparrow air-to-air missiles, or

eight AIM-120 AMRAAMs, carried externally.

F-15E STRIKE EAGLE
Primary function: Air-to-ground attack aircraft
Speed: 1,875 mph (Mach 2.5 plus)
Range: 3,450 miles (3,000 nautical miles) ferry range with conformal fuel tanks and three external fuel tanks
Armament: One 20mm multi-barrel gun mounted internally with 500 rounds of ammunition. Four AIM-7F/M Sparrow missiles and four AIM-9L/M Sidewinder missiles, or eight AIM-120 AMRAAM missiles. Any air-to-surface weapon in the Air Force inventory (nuclear and conventional)
Crew: Pilot and weapon systems officer

F-16 FIGHTING FALCON
Primary Function: Multirole fighter
Speed: 1,500 mph (Mach 2 at altitude)
Range: More than 2,000 miles ferry range (1,740 nautical miles)
Armament: One M-61A1 20mm multi-barrel cannon with 500 rounds; external stations can carry up to six air-to-air missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods
Crew: F-16C, one; F-16D, one or two

F-22 RAPTOR
Primary Function: Air dominance, multi-role fighter
Speed: Mach 2 class with supercruise capability
Range: More than 1,850 miles ferry range with 2 external wing fuel tanks (1,600 nautical miles)
Armament: One M61A2 20-millimeter cannon with 480 rounds, internal side weapon bays carriage of two AIM-9 infrared (heat seeking) air-to-air missiles and internal main weapon bays carriage of six AIM-120 radar-guided air-to-air missiles (air-to-air loadout) or two 1,000-pound GBU-32 JDAMs and two AIM-120 radar-guided air-to-air missiles (air-to-ground loadout)
Crew: One

HC-130P/N King
Primary function: Rescue platform
Speed: 289 miles per hour (464 kilometers per hour) at sea level
Ceiling: 33,000 feet (10,000 meters)
Range: Beyond 4,000 miles (3,478 nautical miles)
Crew: Three officers (pilot, co-pilot, navigator) and seven enlisted (flight engineer, airborne communications specialist, two loadmasters and three pararescuemen)

HH-60G PAVE HAWK
Primary Function: personnel recovery in hostile conditions and military operations other than war in day, night or marginal weather conditions
Speed: 184 mph (294.4 kph)

Range: 504 nautical miles (unlimited with air refueling)
Armament: Two 7.62mm or .50 caliber machineguns
Crew: Two pilots, one flight engineer and one gunner

KC-10 EXTENDER
Primary Function: Aerial tanker and transport
Speed: 619 mph (Mach 0.825)
Range: 4,400 miles (3,800 nautical miles) with cargo; 11,500 miles (10,000 nautical miles) without cargo
Maximum Cargo Payload: 170,000 pounds (76,560 kilograms)
Pallet Positions: 27
Maximum Fuel Load: 356,000 pounds (160,200 kilograms)
Crew: Four (pilot, co-pilot, flight engineer and boom operator)

KC-135 STRATOTANKER
Primary Function: Aerial refueling and airlift
Range: 1,500 miles (2,419 kilometers) with 150,000 pounds (68,039 kilograms) of transfer fuel; ferry mission, up to 11,015 miles (17,766 kilometers)
Maximum Transfer Fuel Load: 200,000 pounds (90,719 kilograms)
Maximum Cargo Capability: 83,000 pounds (37,648 kilograms), 37 passengers
Pallet Positions: 6
Crew: Three: pilot, co-pilot, and boom operator. Some KC-135 missions require the addition of a navigator. The Air Force has a limited number of navigator suites that can be installed for unique missions.

MC-130E/H COMBAT TALON I/II
Primary Function: Infiltration, exfiltration and resupply of special operations forces
Speed: 300 mph
Load: MC-130E: 53 troops, 26 paratroopers
MC-130H: 77 troops, 52 paratroopers or 57 litter patients
Range: 2,700 nautical miles (4,344 kilometers) Inflight refueling extends this to unlimited range
Crew: MC-130E: Officers - two pilots, two navigators and an electronic warfare officer; enlisted - flight engineer, radio operator and two loadmasters
MC-130H: Officers - two pilots, navigator and electronic warfare officer; enlisted - flight engineer, two loadmasters

MC-130P COMBAT SHADOW
Primary Function: Air refueling for special operation forces helicopters
Speed: 289 mph (at sea level)
Ceiling: 33,000 feet (10,000 meters)
Range: Beyond 4,000 miles
Crew: Officers – two pilots and two navigators; enlisted - flight engineer, communications systems operator and two loadmasters

MC-130W COMBAT SPEAR
Primary Function: Infiltration, exfiltration and resupply of special operations forces; in-flight refueling of special operations vertical lift assets
Maximum Takeoff Weight: 155,000 pounds (69,750 kilograms)
Speed: 300 mph
Range: 1,208 miles (1,944 kilometers); in-flight refueling extends to unlimited range
Crew: pilot, copilot, two navigators (officers), flight engineer and two loadmasters (enlisted)

RC-135U COMBAT SENT
Primary function: Electronic intelligence reconnaissance and surveillance
Speed: 500+ miles per hour (Mach 0.66)
Range: 4,000 nautical miles
Crew: Two pilots, two navigators, two airborne systems engineers, and a minimum of 10 electronic warfare officers (flight crew from 45th RS) and six or more mission area specialists (mission crew from 97th IS)

RC-135V/W RIVET JOINT
Primary Function: Reconnaissance
Range: 3,900 miles (6,500 kilometers)
Speed: 500+ miles per hour (Mach.66)
Flight Crew: Five (augmented) - three pilots, two navigators
Mission flight crew: 21-27, depending on mission requirements, minimum consisting of three electronic warfare officers, 14 intelligence operators and four inflight/airborne maintenance technicians

MQ-1 PREDATOR UNMANNED AERIAL VEHICLE
Mission: The MQ-1B Predator is a medium-altitude, long-endurance, unmanned aircraft system. The Predator's primary missions are close air support, air interdiction, and intelligence, surveillance and reconnaissance, or ISR. It acts as a Joint Forces Air Component Commander-owned theater asset for reconnaissance, surveillance and target acquisition in support of the Joint Forces Commander.
Primary Function: Armed reconnaissance, airborne surveillance and target acquisition
Speed: Cruise speed around 84 mph (70 knots), up to 135 mph
Range: up to 770 miles
Ceiling: up to 25,000 feet (7,620 meters)
Fuel Capacity: 665 pounds (100 gallons)
Payload: 450 pounds (204 kilograms)

MQ-9 REAPER
Mission: The MQ-9 Reaper is a medium-to-high altitude, long endurance unmanned aircraft system. The Reaper's primary missions are close air support, air interdiction, and intelligence, surveillance and reconnaissance, or ISR. It acts as a Joint Forces Air Component Commander-owned theater asset for reconnaissance, surveillance and target acquisition in support of the Joint Forces Commander.
Primary Function: Unmanned hunter/killer weapon system
Maximum takeoff weight: 10,500 pounds (4,760 kilograms)

Fuel Capacity: 4,000 pounds (602 gallons)
Payload: 3,750 pounds (1,701 kilograms)
Speed: Cruise speed around 230 miles per hour (200 knots)
Range: 1,150 miles (1,000 nautical miles)
Ceiling: Up to 50,000 feet (15,240 meters)
Armament: Combination of AGM-114 Hellfire missiles, GBU-12 Paveway II and GBU-38 Joint Direct Attack Munitions

RQ-4 GLOBAL HAWK
Mission: The RQ-4 Global Hawk is a high-altitude, long-endurance unmanned aircraft system with an integrated sensor suite that provides intelligence, surveillance and reconnaissance, or ISR, capability worldwide. Global Hawk's mission is to provide a broad spectrum of ISR collection capability to support joint combatant forces in worldwide peacetime, contingency and wartime operations. The Global Hawk complements manned and space reconnaissance systems by providing near-real-time coverage using imagery intelligence or IMINT, sensors.
Primary function: High-altitude, long-endurance ISR
Fuel Capacity: RQ-4A, 15,400 pounds (6,985 kilograms); **RQ-4B**, 17,300 pounds (7847 kilograms)
Payload: RQ-4A, 2,000 pounds (907 kilograms); **RQ-4B**, 3,000 pounds (1,360 kilograms)
Speed: RQ-4A, 340 knots (391 mph); **RQ-4B**, 310 knots (357 mph)
Range: RQ-4A, 9,500 nautical miles; **RQ-4B**, 8,700 nautical miles
Ceiling: 60,000 feet (18,288 meters)
Armament: None

VIII. Space Capabilities

DEFENSE METEOROLOGICAL SATELLITE PROGRAM
Primary Function: Collect terrestrial, space environment and Earth surface data
Orbit altitude: Approximately 450 nautical miles (nominal)

DEFENSE SATELLITE COMMUNICATIONS SYSTEM
Primary Function: Worldwide, long-haul communications
Orbit Altitude: 22,230 miles (35,887 kilometers)

DEFENSE SUPPORT PROGRAM SATELLITES
Primary mission: Strategic and tactical missile launch detection
Orbit altitude: 22,300 miles (35,970 kilometers)

GLOBAL POSITIONING SYSTEM
Primary Function: Positioning, navigation, timing, and velocity information worldwide
Orbit altitude: approx. 11,000 nm

GROUND-BASED ELECTRO-OPTICAL DEEP SPACE SURVEILLANCE (GEODSS)

The Ground-Based Electro-Optical Deep Space Surveillance System, or GEODSS, plays a vital role in tracking deep space objects. More than 2,500 objects, including geostationary communication satellites, are in deep space orbits varying in altitude from 10,000 to 45,000 kilometers from Earth.

MILSTAR SATELLITE COMMUNICATIONS

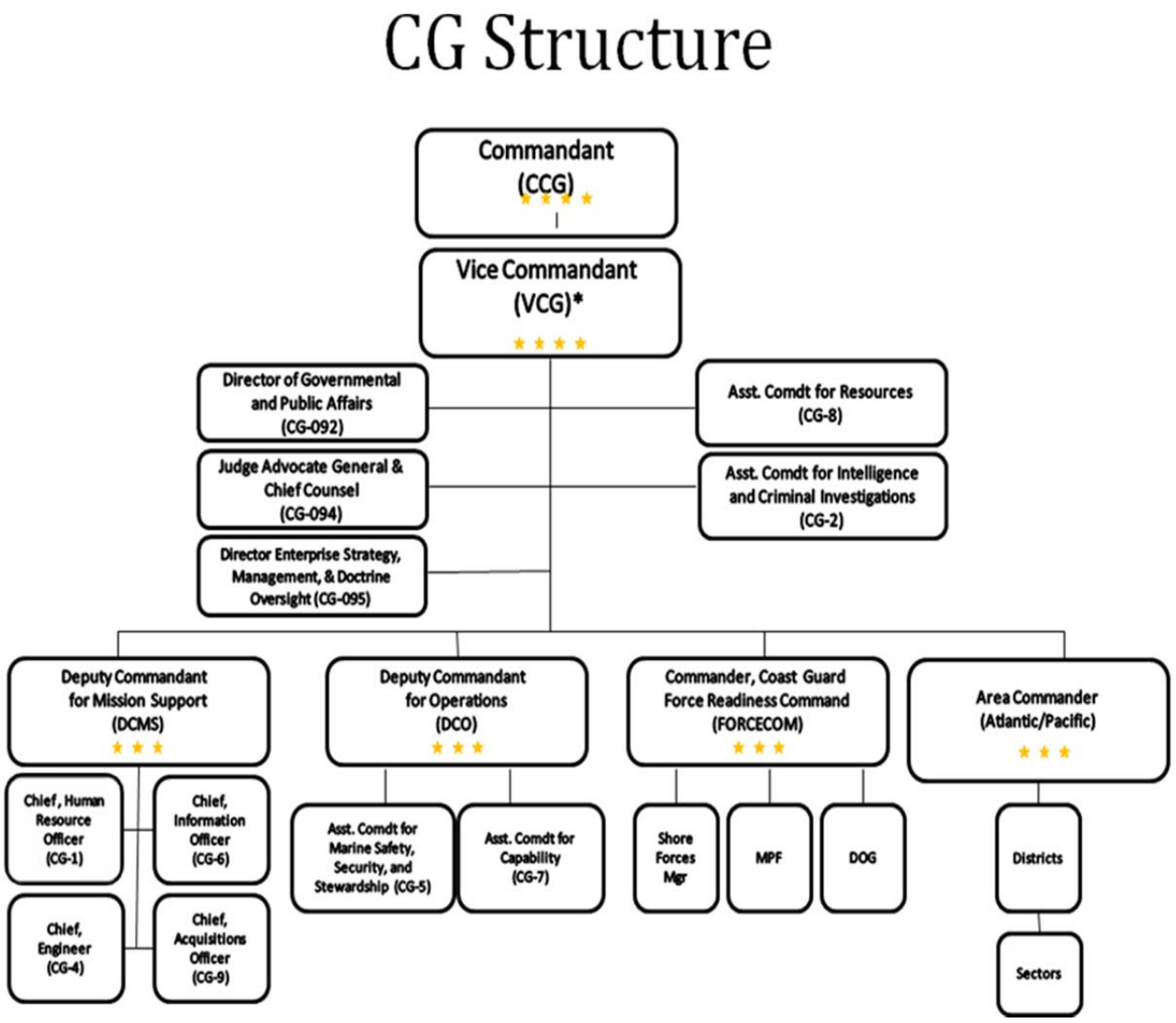
Primary function: Global military communications system
Orbit altitude: 22,250 nautical miles (geosynchronous orbit)
Payload: Low data rate communications (voice, data, teletype and facsimile) at 75 bps to 2,400 bps (All satellites)
Medium data rate communications (voice, data, teletype, facsimile) at 4.8 kbps to 1.544 Mbps (Satellites 4 through 6 only)

PAVE PAWS RADAR SYSTEM

Mission: PAVE PAWS is an Air Force Space Command radar system operated by two 21st Space Wing squadrons for missile warning and space surveillance. PAVE PAWS radars are located at Cape Cod Air Force Station, MA, and Beale AFB, CA. PAVE is an Air Force program name, while PAWS stands for Phased Array Warning System. The radar is used primarily to detect and track sea-launched (SLBM) and intercontinental ballistic missiles (ICBMs), and to support space situational awareness. The system also has a secondary mission of Earth-orbiting satellite detection and tracking.

U.S. COAST GUARD

I. Organization



- MPF – Maritime Patrol Forces (Ships, Planes, Patrol Boats)
- DOG – Deployable Operations Group – MSRT, MSST, TACLET/LEDET, PSUs, National Strike Force

II. Concept of Operations

The Coast Guard is one of the five military services which make up the Armed Forces of the United States of America. As such, we exist to defend and preserve the United States as a free nation. We also protect important interests of the United States— the personal safety and security of our population; the marine transportation system and critical infrastructure; our natural and economic resources; and the territorial integrity of our nation— from both internal and external threats, natural and man-made. We protect these interests in U.S. ports

and inland waterways, along the coasts, on international waters, and in any other maritime region where they may be at risk.

In October 2007, the Navy, Marine Corps, and Coast Guard marked an historical first, signing a unified maritime strategy entitled "A Cooperative Strategy for 21st Century Seapower." This strategy commits U.S. maritime forces to the full spectrum of operations that advance peace and order, and thus the prosperity and security of our Nation.

Today, the Coast Guard is assisting Sailors and Marines in the U.S. Navy-led African Partnership Station, to improve the maritime governance of African nations and foster cooperation among their countries and with the United States. While deployed with the U.S. Navy Sixth Fleet in 2008, the *USCGC Dallas* conducted theater security cooperation with maritime law enforcement officers from Cape Verde, Sao Tome and Principe, Gabon, Equatorial Guinea, Ghana, and Senegal. These efforts included the first ever joint law enforcement activities in western Africa when the *Dallas* embarked a law enforcement team from Cape Verde to enforce fisheries regulations within their EEZ. The Coast Guard was also closely involved in international efforts to combat piracy off the Horn of Africa in 2008 and 2009, working with the Navy in both international engagement and tactical law enforcement. Our national security and prosperity require a close bond among the sea services, now and into the future. Over two centuries of growth, evolution, and experience have prepared the Coast Guard to provide its unique contribution to this team.

Coast Guard Roles and Missions

Since 1915, when the Coast Guard was established by law as an armed force, we have been a military, multi-mission, maritime force offering a unique blend of military, law enforcement, humanitarian, regulatory, and diplomatic capabilities. These capabilities underpin our three broad roles: **maritime safety, maritime security, and maritime stewardship.**



Figure 1

Each Coast Guard role is composed of several missions. The 11 missions shown above (**Search and Rescue; Marine Safety; Marine Environmental Protection; Ports, Waterways, and Coastal Security; Defense Readiness; Illegal Drug Interdiction; Undocumented Migrant Interdiction; Living Marine Resources Law Enforcement; Protection of the U.S. EEZ (Other Law Enforcement); Aids to Navigation; Ice Operations)** have been statutorily assigned by Congress, acting on behalf of the American people. However, most Coast Guard missions support more than one role. For example, the aid to navigation mission primarily supports the maritime stewardship role by preventing pollution from vessel groundings and collisions, while facilitating the movement of people and goods. This mission also supports the maritime safety role by preventing accidents, injuries, and deaths. These interwoven roles and complementary missions call for Coast Guard personnel and resources that are similarly multi-mission capable. This characteristic of our people and our platforms—their ability to perform multiple missions—brings greater effectiveness, insight, and agility to bear in any situation. It is a fundamental source of the Coast Guard's strength.

Search and Rescue
The Coast Guard's Search and Rescue (SAR) program is critical to the safety and security of U.S. waterways and to the maritime public. The SAR program's goal is to minimize loss of life, injury, and property damage in the maritime environment; minimize crew risk during SAR missions; optimize use of resources in conducting SAR; and maintain a world leadership position in maritime SAR.

In 2008, the Coast Guard responded to 24,229 SAR cases, saved 4,044 lives, and recovered nearly $158M in property.

Marine Safety
The Coast Guard's Marine Safety program ensures the safe operation and navigation of over 20,000 U.S. and foreign flagged vessels, inspects over 70,000 domestic vessels annually, and carries out over 11,000 port state control (foreign vessel) examinations annually. The Coast Guard is also the primary agency responsible for developing and enforcing Federal marine safety regulations, certifying and licensing over 200,000 mariners, and promoting safe practices by investigating commercial marine casualties and sharing the findings.

In 2008, the Coast Guard issued over $122M in state boating safety grants. The Coast Guard also opened the National Maritime Center, a 60,000 square foot facility that provides centralized processing and streamlined issuance of mariner licenses, documents, and credentials.

Marine Environmental Protection
The Marine Environmental Protection program develops and enforces regulations to avert the introduction of invasive species into the maritime environment, stop unauthorized ocean dumping, and prevent oil and chemical spills. This program is complemented by the Marine Safety program's pollution prevention activities.

In 2008, the Coast Guard refined its planning to support implementation of the National Response Framework, the national all hazards, incident management, and emergency response architecture. The Coast Guard also incorporated lessons learned from the motor vessel (M/V) COSCO BUSAN Incident Specific Preparedness Report into an improved policy that better aligns response planning at local, state, and Federal levels.

Ports, Waterways, and Coastal Security

The goal of the Ports, Waterways, and Coastal Security (PWCS) program is to reduce the risk of maritime terrorism. Primary activities include improving Maritime Domain Awareness (MDA), conducting maritime security and response operations, and developing maritime security regimes.

In 2008, the Coast Guard's International Port Security program helped reduce the risk to U.S. ports by verifying antiterrorism measures were in place in foreign ports. Conditions of entry were placed on foreign ports where certain measures were deficient. The Coast Guard also updated the Maritime Security Risk Assessment Model to include maritime critical infrastructure and key resource information, which improved the effectiveness of patrol and inspection activities to counter threats to the Maritime Transportation System (MTS).

Defense Readiness

DOD's combatant commanders continue to request Coast Guard forces to support security cooperation and capacity building in their various areas of responsibility. As one of the Nation's five Armed Services, the Coast Guard contributes WHECs, 110-foot Island-class Patrol Boats (WPBs), Law Enforcement Detachments (LEDETs), Port Security Units (PSUs), and other specialized units to support the National Security Strategy and defense imperatives.

In 2008, Coast Guard PSU 309 trained and deployed to the Middle East with the Navy's Maritime Security Squadron 4 to support Operation Iraqi Freedom point defense and harbor security operations in Kuwait. Six Coast Guard WPBs are currently forward deployed in Bahrain in support of Operation Iraqi Freedom, conducting maritime critical infrastructure protection and security operations. Additionally, the Coast Guard Cutter DALLAS deployed in support of Naval Forces Europe, conducting theater security cooperation with African, Mediterranean, and Black Sea nations.

Illegal Drug Interdiction

As the lead Federal agency for maritime drug interdiction, the Coast Guard is a full partner in international efforts to combat the flow of illegal drugs to the United States. The Coast Guard strives to reduce the supply of drugs from the source by denying smugglers the use of air and maritime routes in the Transit Zone, a six million square mile area comprised of the Caribbean, the Gulf of Mexico, and the Eastern Pacific Ocean.

In 2008, the Coast Guard removed a total of 367,926 lbs. of cocaine and 22,173 lbs. of marijuana from the Transit Zone. In the fourth quarter alone, the Coast Guard disrupted 20 cocaine smuggling events and intercepted two self-propelled semi-submersible (SPSS) vessels.

Undocumented Migrant Interdiction
As the lead Federal agency for maritime law enforcement, the Coast Guard is responsible for enforcing immigration laws at sea. The Coast Guard conducts patrols and coordinates with other Federal agencies and foreign countries to interdict undocumented migrants at sea, denying them illegal entry to the United States via maritime routes.
In 2008, the Coast Guard interdicted nearly 5,000 undocumented migrants attempting to illegally enter the United States. The Coast Guard also coordinated highly successful interagency operations against go-fast smuggling vessels in the Florida Straits, which resulted in 40 at-sea interdictions involving 718 migrants and 31 migrant smugglers—all in a two-month period.

Living Marine Resources (LMR) Law Enforcement
As the lead Federal agency for at-sea enforcement of U.S. fisheries, marine mammals, and protected species regulations, the Coast Guard safeguards the U.S. Exclusive Economic Zones (EEZ) by enforcing domestic fisheries laws. Coast Guard enforcement efforts advance national goals to conserve and manage living marine resources.

In 2008, the Coast Guard conducted 5,623 living marine resource boardings, with an observed at-sea compliance rate of 95.3 percent.

Protection of U.S. EEZ from Foreign Encroachment (Other Law Enforcement)
Preventing illegal foreign fishing vessel encroachment in the EEZ is a primary Coast Guard role vital to protecting the integrity of the Nation's maritime borders and ensuring the health of U.S. fisheries. The Coast Guard also enforces international agreements to suppress damaging illegal, unreported, and unregulated (IUU) fishing activity on the high seas.

In 2008, the Coast Guard detected 81 incursions by foreign fishing vessels into the U.S. EEZ. The Coast Guard also participated in the 2008 multi-national high seas drift net (HSDN) enforcement campaign, Operation North Pacific Watch. Through this campaign, the Coast Guard interdicted two Chinese-flagged HSDN vessels, facilitating their seizure by Chinese officials.

Aids to Navigation
The Coast Guard's system of 51,000 visual aids to navigation (ATON), Vessel Traffic Services, and marine information services facilitates the flow of commerce through the MTS and minimizes disruptive incidents in the maritime environment. The Coast Guard also prevents disruptions to maritime commerce by establishing regulated navigation areas and regulating bridges over navigable waters.

In 2008, the Coast Guard achieved a 98.3 percent Federal short-range ATON signal availability rate, exceeding the international standard of 95 percent for reliable visual ATON systems. The Coast Guard also played a critical role in responding to major flooding events throughout the Mississippi River System that disturbed over 2,200 miles of Federal waterways, displaced more than 3,500 buoys, and destroyed over 330 fixed ATON structures.

Ice Operations
The Coast Guard conducts icebreaking services to assist vessels and communities in emergency situations and facilitate essential commercial maritime activities in the Great Lakes and Northeast regions. In 2008, the Coast Guard, in concert with the Government of Canada and the commercial icebreaking industry, sustained navigable waterways for commercial traffic and assisted with 680 ice transits, representing the transport of over $2B (U.S.) of cargo.

Beyond domestic operations, the Coast Guard operates the only U.S.-flagged heavy icebreakers capable of providing year-round access to the Polar regions. In 2008, the busiest iceberg season in a decade, the International Ice Patrol facilitated commerce by broadcasting position information on 1,029 icebergs crossing south of 48 degrees north latitude.

III. General Information

Military, Maritime, Multi-Mission

- Established in 1790 as the Revenue Marine, later known as the Revenue Cutter Service. Became the Coast Guard with the merger of the Revenue Cutter Service and the Life Saving Service in 1915.
- Absorbed the Federal Lighthouse Service in 1939, then the Bureau of Navigation and Steamboat Inspection in 1946.
- Transferred from Department Treasury to Department of Transportation in 1967.
- Transferred from Department of Transportation to Department of Homeland Security in 2003.
- The only armed force not located within the Department of Defense, but a full time military service subject to the UCMJ and with the same rank and pay structure as the Navy.
- Becomes a "specialized service" within the Navy upon declaration of war, or at the direction of the President. (This has happened twice: WWI and WWII.)
- At the direction of the President or with the concurrence of the Secretaries of Defense and Homeland Security, may provide forces to the Navy for operations (e.g., Vietnam, Grenada, Desert Shield/Desert Storm, Iraqi Freedom).
- Trains regularly with the Navy and other Services.
- Primary forces for Maritime Homeland Defense operations under Geographic Combatant Commanders (NORTHCOM, PACOM and SOUTHCOM) and maritime component commanders.
- An important asset for national policy because, in many international situations, the presence of a Coast Guard vessel may be less provocative, and thus more advantageous, than a Navy warship (e.g., 2005 support by USCGC BEAR for EUCOM TSCP through operations with Gulf of Guinea nations, especially Nigeria; and 2006 support by USCGC SEQUOIA for PACOM TSCP through China visit, 2008 USCGC DALLAS relief delivery to Republic of Georgia.)
- Personnel:
  - 42,000 Active Duty
  - 7,000 Reserves
  - 7,600 Civilians

- 30,000 Coast Guard Auxiliary (Civilian volunteers)

IV. Coast Guard Forces

The Coast Guard's roles and missions are accomplished by its forces. Coast Guard forces have evolved as we have grown and today reflect the uniqueness of the Service.

Workforce

Mission success is made possible by the combined activities of Coast Guard operational and support personnel. This teamwork is essential to ensure Coast Guard readiness, agility, and operational excellence. We cannot succeed without the skilled contributions, direct and indirect, of our active duty and civilian full-time employees, part-time reservists, and auxiliary volunteers. When appropriate or necessary, we also rely on the help of our many federal, state, local, tribal, and private sector partners.

The Coast Guard Reserve offers citizens the opportunity to serve in the military part-time while maintaining a separate civilian career. The Reserve provides the Coast Guard highly trained and well qualified personnel for active duty in time of war and national emergency, and for augmentation of Coast Guard forces during natural or man-made disasters or accidents. The Coast Guard Reserve, provides the Coast Guard surge capacity and flexibility to respond to all threats and all hazards.

Nearly 30,000 strong, the men and women of the uniformed all-volunteer U.S. Coast Guard Auxiliary spend thousands of hours each year, often on their personal vessels and aircraft, helping to carry out Coast Guard missions. On some waterways, Auxiliaries are the principal Coast Guard personnel serving the public. They are probably best known for their boating safety classes and courtesy vessel safety checks. However, since 1997 they have supported all Coast Guard missions except those involving military operations or law enforcement. The Coast Guard Auxiliary is the only all-volunteer component within the Department of Homeland Security. Altogether, this small service with a very big job numbers only about 87,000 personnel. By comparison, the next smallest U.S. armed force is the Marine Corps with over 198,000 active duty members alone.

Operational Force Structure

To understand our operational structure today, it is helpful to categorize Coast Guard field operational units according to three types of forces. These are:

Multi-Mission Shore-Based Forces

Coast Guard Sector commands focus service delivery on major port regions within the United States and its territories. Sector commands are a consolidation of Coast Guard shore-based field operational units. These include boat stations, aids to navigation teams, and prevention and response forces such as vessel inspectors, port operations forces, communications centers, and mission controllers.

Sector Commanders possess specific legal authorities for statutorily defined areas. The most important of these are:

- Captain of the Port (COTP), with authority over maritime commerce;
- Federal Maritime Security Coordinator (FMSC), with authority over maritime security;
- Officer in Charge of Marine Inspection (OCMI), with authority over vessel standards compliance;
- Search and Rescue Mission Coordinator (SMC), with authority over rescue operations; and
- Federal On-Scene Coordinator (FOSC), with authority over oil and hazardous material spill response and preparedness.

Coast Guard Sector commands are the principal enforcers of ports, waterways, and coastal laws and regulations. As such, they are the Coast Guard's key operational link to federal, state, local, tribal, and private sector partners.

Maritime Patrol and Interdiction Forces
Coast Guard cutters, aircraft, and their crews make up the second type of forces. These multi-mission platforms are assigned operations domestically or globally, and enable maritime presence, patrol, response, and interdiction throughout the maritime domain. With their military command, control, and communications networks, they allow the Coast Guard to deter criminal activity and respond to threats and natural or man-made emergencies.

The Coast Guard can also provide these uniquely capable forces to the Department of Defense for national security contingencies. Our newest cutters and aircraft are highly adaptable and capable of meeting current and future homeland and national security needs around the world. Networked and mobile, cutters and aircraft provide domain awareness and coordinate multi-mission, interagency operations. Although maritime patrol and interdiction forces work principally in the offshore and international environments, they can also operate near shore or within ports. This is critical following a disaster or major disruption to local command, control, and communications capabilities. As the Nation's only provider of Polar icebreaking capabilities, the Coast Guard enables unique access and capabilities in the Polar Regions.

Deployable Specialized Forces
Deployable Specialized Forces (DSFs) are rapidly transportable elements with specialized skills in law enforcement, military port security, hazardous spill response, and other such missions. These specialized teams provide the Coast Guard with surge capability and flexibility. The Deployable Operations Group (DOG) oversees, coordinates, and integrates Coast Guard DSFs, which include some reserve-based units. The DOG also works with other DHS components and government agencies to develop integrated, multi-agency, force packages to address maritime threats and hazards.

Forces within the DOG include:

- Maritime Safety and Security Teams (MSSTs) - include security and boat forces;
- Maritime Security Response Team (MSRT) - specialized capabilities for law enforcement;
- Tactical Law Enforcement Teams (TACLETs) and Law Enforcement Detachments (LEDETs) - deploy wherever needed for law enforcement missions;
- Port Security Units (PSUs) - provide expeditionary port security; and
- National Strike Force (NSF) - provide high-end pollution and hazardous material response.

Selected Coast Guard Vessels

Ship Type	Class	No.	Warfare Mission	Equipment
WMSL National Security Cutter	LEGEND 4300 tons, 418 ft long 54 ft beam 28 kts 148 crew	2 (8 planned)	MIO, Coastal Sea Control, Theater Security Cooperation	Frigate type Cutter; MK110 57mm gun; CIWS, Mk53 NULKA, X&S radar; EADS 3D air search radar; SPQ-9B; Mk46 electro-optical/infrared sensor; SLQ-32,: HF, VHF, UHF; Stern Launch: Two cutter boats (Long Range Interceptor and/or Short Range Prosecutor), Helicopter capable MH-65C or HH-60T, organic UAV
WHEC High Endurance Cutter	HAMILTON 3200 tons, 378 ft long, 42.8 ft beam, 28 kts speed 170 crew	10	MIO, Coastal Sea Control, Theater Security Cooperation	Frigate-type cutter. CIWS, SPS-40, MK-92 GFCS, MK-75 gun, MK-38 25 mm gun, shipboard helicopter capable, GCCS-M & NAVMACS, TACAN, SRBOC, WLR-1D, Link 11.
WMEC Medium Endurance Cutter	BEAR 1780 tons, 270 ft long, 38 ft beam, 19.5 kts speed, 100 crew	13	MIO, Coastal Sea Control, Theater Security Cooperation	Corvette-type cutter. MK-92 GFCS, MK-75 gun, SLQ-32v2, LAMPS III and shipboard helicopter capable, SRBOC, TACAN, NAVMACS, GCCS-M.
WMEC Medium Endurance Cutter	RELIANCE 1007 tons, 210.5 ft long, 34 ft beam, 18 kts speed, 75 crew	14	MIO, Coastal Sea Control, Theater Security Cooperation	Corvette-type cutter. MK-38 25 mm gun, shipboard helicopter capable, NAVMACS, GCCS-M.
WPB Patrol Boat	ISLAND 165 tons, 110 ft long, 21 ft beam, 30 kts speed, 16 crew	41	MIO, Coastal Sea Control, Theater Security Cooperation	Fast coastal patrol boat. Mk-38 25 mm gun, secure comms, 7-day endurance.
CPB Coastal Patrol Boat	MARINE PROTECTOR 87 ft long, 19.5 ft beam, 26 kts speed, 10 crew	73	MIO, Coastal Sea Control	Coastal patrol boat. .50 cal MG, secure comms, 3 day endurance
WLB Buoy Tender	JUNIPER 2000 tons, 225 ft long, 46 ft beam 15 kts speed, 47 crew	16	MIO, Coastal Sea Control, Theater Security Cooperation, MCW support.	Multi-mission cutter. .50 cal MG, secure comms, ocean going, 4-week endurance.
WAGB Polar Icebreaker	POLAR 13,190 tons, 399 ft 83.5 ft beam, 18 kts 139 crew	2	Polar operations, marine science, search and rescue.	Continuous progress through 6FT of ice at 3 kts. Two HH-65A.
WAGB Arctic Icebreaker	HEALY 16,000 tons, 420 ft 82 ft beam, 17 knots 120 crew	1	Arctic Operations, Marine Science, search and rescue	Continuous progress through 4.4FT of ice at 3 knots.

Selected Coast Guard Aircraft

Aircraft Type	Total	Warfare Mission
HC-144A OCEAN SENTRY	11 (36 planned)	Medium Range Maritime Patrol & Tactical Airlift Flexible Mission Pallet System, FLIR Star Safire III, DF- 430 UHF/VHF DF, SAAB Transponder Tech AB R4A AAIS. EDO EL/M 2022A(V)3, APN- 241 weather radar.
HC-130H, HERCULES	23	Long Range Maritime Patrol; (equipped with APS-137 ISAR) Tactical Airlift
HC-130J HERCULES	6	Long Range Maritime Patrol &Tactical Airlift FLIR Star Safire III, DF- 430 UHF/VHF DF, SAAB Transponder Tech AB R4A AAIS. EDO EL/M 2022A(V)3, APN- 241 weather radar.
HU-25 GUARDIAN	17	Medium Range Inteceptor & Maritime Patrol Aircraft HU-25 A (5) APS 127 Radar HU-25 C (9) APG 66V2 Radar, FLIR/EO HU-25 D (6) APS 143 Radar., FLIR/EO
HH-60J, JAYHAWK	42	SAR; Utility; FLIR equipped; NVG compatible; secure comms
HH-65C, DOLPHIN	95	SAR; Utility; secure comms; NVG compatible Airborne Use of Force (AUF)

Coast Guard Port Security Unit (PSU)

PSUs are deployable units organized for sustained operations, capable of deploying within 96 hours to establish port operations within 24 hours. PSUs are tasked with providing waterborne and limited land-based port security and force protection of shipping and critical port facilities at sea ports of embarkation/debarkation (SPOE/SPOD). To carry out this mission, each PSU has 6 heavily armed, fast and maneuverable Trailerable Port Security Boats (TPSB). A PSU organizational structure is designed to provide for command and control, waterborne security, shore base security and logistics support as one element within the Maritime Expeditionary Security Force (MESF) organization.

Unit	Location
PSU 301	**Cape Cod, MA**
PSU 305	**Ft. Eustis, VA**
PSU 307	**St. Petersburg, FL**
PSU 308	**Gulfport, MS**
PSU 309	**Port Clinton, OH**
PSU 311	**Long Beach, CA**
PSU 312	**San Francisco, CA**
PSU 313	**Tacoma, WA**
PSU Training Detachment (TRADET)	**Camp Lejeune, NC**

PSU composition and assets:

VI. **Boats:** Six (Boston Whaler) 25' TPSBs with 8' beam and 4' nav draft equipped with two 175 HP OMC Outboards, radar, depth sounder machine guns (.50 cal and M60) that are capable of operating within a harbor in seas up to 4 feet.

- **Vehicles:** Two F-350 pickup trucks and one F-550 stake-bed truck with trailers, one 16 passenger van.
- **Diesel Generators:** (DOD std Tactical Quiet) two 15 KW/60hz and two 5 KW/60 hz generators
- **Containers:** 1 portable ISU 90 armory container and ten ISU 90 air/sealift capable containers for gear and equipment shipment.
- **Tents:** three Model 6 and two Model 2 Deployable Rapid Assembly Shelter (DRASH) tents and 7 GP mediums for command center, medical/admin, galley and berthing purposes. Water: One 400 gal water Buffalo container.
- **Food:** Each PSU deploys with a 30 day supply of operating and support equipment including 30 days of MREs and TRAPAKs.
- **Logistics:** Fuel, Potable water, advanced medical assistance, sanitation & shower facilities must be provided by the supported commander.

Operational characteristics:

- **Crew:** 117 deployable personnel (11officers/106 enlisted) out of 145 (140 RPAL and 5 PAL).
- **Waterborne Security:** Each PSU is capable of conducting continuous boat operations with 3 boats underway simultaneously and one boat in a ready response mode. These TPSBs are fully mission capable when operating within a harbor in less than 3 foot seas and 30 kts of wind. During high threat conditions, continuous operations with four boats can be conducted for one 24 hour period.
- **Unit Security:** As part of a combat service support unit that deploys in a joint rear area harbor environment, each PSU has a 30 person detachment that provides continuous unit security by a 10 person squad equipped with machine guns and small arms.

Coast Guard Tactical Law Enforcement Team (TACLET)

Law Enforcement Detachment (LEDET)

Tactical Law Enforcement Teams (TACLETs) and Law Enforcement Detachments (LEDETs) perform routine maritime law enforcement and provide specialized law enforcement augmentation to designated elements of other U.S. Government Agencies in support of Coast Guard, national security and law enforcement in the maritime environment. TACLETs/ LEDETs are prepared to support DoD as directed. First designated in 1982, TACLETs were originally designated to augment U.S. Navy ships with a law enforcement team for counter-drug operations while transiting or operating in high drug-traffic transport areas. LEDETs for some years now have also supported West Indies Guard Ship Deployments by embarking upon British and Dutch frigates and oilers. In addition to ongoing counter-drug mission support, LEDETs currently deploy in support of Maritime Interdiction Operations (MIO) in support of Operation Iraqi Freedom (OIF). Each TACLET is comprised of nine LEDETs, with nine members assigned to each LEDET; they are recognized as the Coast Guard's most highly-qualified law enforcement specialists due to the level of training and sustainment they receive. At the very minimum, a LEDET member will be a qualified Boarding Team Member; most have attained the status of Boarding Officer shortly after assignment to the unit. These units live up to their motto "Train-Enforce-Interdict."

Unit	**Location**
TACLET South	Miami, FL
PACTACLET	San Diego, CA

TACLET Composition and Assets

- TACLETs do not have organic small boats and rely upon the host naval vessel to provide lift to targets of interest.

Weapons (Armory)	**Training**
- M4 rifles	- Limited CBR
- 9 mm pistols	- Vertical insertion
- 12 gauge shotguns	- Canine Handling Teams*
	- Ion Scan Detection Equipment
	- Close Quarters Combat (CQC)
	- Maritime Law Enforcement
	- Limited Language training/ capability**

* TACLET South employs K9 Specifically trained to detect drugs but not explosives.
** TACLETs send select members to Spanish Total Immersion Language proficiency training.

Coast Guard Maritime Safety and Security Team (MSST)

The Maritime Safety and Security Team (MSST) is a specialized response unit created to ensure maritime mobility and security, safeguard the public, protect vessels, harbors, ports, facilities, and cargo from destruction, loss or injury and respond to medium threat security incidents, assisting in the restoration of a safe and secure environment in designated ports and other locations as directed, in order to enhance the maritime security of the United States. When directed, MSSTs directly support Defense Readiness by conducting port operations that include security and defense activities in Seaports of Embarkation and Debarkation and protecting strategic shipping and naval vessels operating in harbors, ports and anchorages to ensure the uninterrupted flow of strategic cargo to Combatant Commanders. In addition to general law enforcement training provided to all Coast Guard boarding personnel, these units complete weapons and special boat tactics training. MSSTs are capable of rapid, nationwide deployment via air, ground or sea transportation in response to changing threat conditions and evolving Maritime Homeland Security (MHLS) and Maritime Homeland Defense (MHLD) requirements. Like most Coast Guard units, MSSTs are multi-mission capable, and can be called upon if necessary to conduct search and rescue and routine law enforcement activities in addition to their security responsibilities. MSSTs are divided into 12 units which are located at dispersed sites within the United States.

MSST Composition and Assets

- **Boats:** Six (SAFE Boats) 25' RB-HS with 8' beam and 4' navigational draft equipped with Two 225 HP Honda Outboards, radar, depth sounder, DGPS, and machine guns (two mounted M240B).
- **Vehicles:** Four F-350 pickup trucks and four F-550 stake-bed truck with trailers, three 15-pax van.
- **Food and Water:** Must be provided by the supported commander.
- When deployed, berthing, fuel, sanitation and shower facilities must be provided by the supported commander.

Operational characteristics

25-foot Safe Boat	**Weapons (Armory)**	**Training**
- Crew of 3, plus max of 7 pax	- M4 rifles	- Limited CBR
- Twin outboard engines capable	- 9 mm pistols	- Vertical insertion
of 40+ knots	- M240B mounted automatic	- Canine Handling Teams
- VHF/FM marine radio	weapons	- Limited Underwater Port Security
(encrypted)	- 12 gauge shotguns (with less than	Detection Equipment
- AN/PRC 117V2 Tri-band	lethal rounds)	- Advanced Port Security Tactics
- Raytheon radar	- running gear entangling systems	- Close Quarters Combat (CQC)
- Differential GPS (DGPS)		- Maritime Law Enforcement
- Two M240B machine guns		- Basic Scuba
- AN/PRC 7C NVG		

Coast Guard Maritime Security Response Team (MSRT)

The Maritime Security Response Team (MSRT) ensures maritime mobility and security through the conduct of high-threat, high-risk advanced interdiction and Counter-Terrorism (CT) operations to safeguard the public and protect vessels, harbors, ports, facilities, and cargo from destruction, loss or injury and responds to security incidents, assisting in the restoration of a safe and secure environment in designated ports and other locations as directed, in order to enhance the maritime security of the United States. The MSRT is prepared to support DoD as directed. The MSRT is the immediate response force to high-threat, high-likelihood-of-violence maritime law enforcement and terrorist situations. Their primary tasks are accomplished as part of a skill set known as Advanced Interdiction, which involves the use of the advanced skills and special equipment organic to the MSRT. The levels of violence employed by terrorist organizations dictates a special skill set and advanced training methods in order to effectively counter the threat and risk to public safety. The members of the MSRT are highly specialized, trained and tasked-organized in order to act as the Coast Guard's premier Counter Terrorism unit—able to conduct advanced tactical response operations in a CBRNE environment. MSRT members are trained in advanced Tactics, Techniques and Procedures to include but not limited to: close quarters combat, high and low freeboard climbing, mechanical breaching as well as tactical vertical insertion (FAST ROPE). In high-risk situations of demonstrated terrorist intent or intelligence indications, the MSRT may be deliberately employed due to their advanced level of training and specialized skills to deal with the critical threat. Situations involving highly suspect, unknown circumstances or high-threat, violent response during migrant interdiction, counter-drug and anti-piracy efforts are also consistent with the advanced training and specialized equipment employed by the MSRT.

Unit	**Location**
MSRT1	CHESAPEAKE, VA

MSRT Composition and Assets*

- Organic Boat Section
- Dedicated Aviation Branch

* For greater specificity contact the Office of Counter Terrorism and Special Missions (G-RPC) at 202-267-0936.

Coast Guard National Strike Force

The National Strike Force (NSF) is a vital national asset comprised of a unique, highly trained cadre of Coast Guard professionals who maintain and rapidly deploy with specialized equipment and incident management skills. The NSF is recognized worldwide as experts in preparedness and response to mitigate the effects of weapons of mass destruction events, hazardous substance releases, oil discharges and other emergencies on behalf of the American public. Its mandate is to assist and support Lead Agency/Incident Commanders and Federal On-Scene Coordinators in their response and preparedness activities for both crisis and consequence management. In this way, the NSF supports the National Response System and Homeland Security by minimizing the adverse impact to the public and reducing environmental damage from weapons of mass destruction events, hazardous substance releases and oil discharges.

Sub-Unit	**Location**
Atlantic Strike Team	Fort Dix, NJ
Gulf Strike Team	Mobile, AL
Pacific Strike Team	Novato, CA

Each Strike team is Equipped to respond to most chemical and WMD incidents

General response equipment
Mobile Incident Command Post, Hazardous Substance Response Trailers, Level A, B, and C protective suits, confined space entry and egress gear, decontamination suites, portable weather stations, drum handling equipment, chlorine institute kits, generators (3.0 to 10.0 KW), GPS units, photo/video equipment

Chemical, biological, and radiological response equipment
Field presumptive detection for biological or chemical warfare agents, radiation detection instruments for alpha, beta, neutron and gamma (include isotopic identification)

Oil spill response equipment
Vessel of Opportunity Skimming System VOSS, Inflatable 45-inch boom (6,000 ft), Temporary Storage Devices 26,000 gal, inflatable barges and 10,000 gal. dracones.

Damage control equipment
Oil/Water interface meter, Plugging and patching equipment

Vehicles, boats and command posts
Tractor/trailer units, All terrain vehicles, Mobile Incident Command Posts, 32’ & 24’ Munson boats, 15’ Inflatable boats, 18’ John boats, Monitoring/Detecting Equipment, Organic vapors detection instruments, Multi-gas meters for toxic and explosive, atmospheres APD 2000, Networked remote atmospheric monitors, Aerosol particulate meters, Hazard categorization kits, Multi-media (air, soil, water) sampling gear, Hand-Held Assays (Bio), PhD Ultra (or MultiRae) CDS Drager Combo-Sets, WMD HazCat Kit, WMD Sampling Kit, SKC pumps (or Personal DataRams), 256 Kit, M-8 / M-9 paper, Radiation Pagers (AN-UDR-13B) Gamma/Neutro, Thermo IdentiFINDER U (isotope identifier), TVA-1000, Drager CMS, AreaRaes HazCat Kit, Ludlum 12/19 w/ pancake probe and all necessary calibration equipment

Lightering and pumping equipment
Submersible, high-capacity oil, chemical and water pumps, diaphragm and peristaltic small/medium capacity oil, chemical and water pumps, hydraulic prime movers & support equipment, Viscous Oil Pumping System (VOPS)

SPECIAL OPERATIONS FORCES (SOF)

I. Mission

United States Special Operations Command (USSOCOM) has a two-fold mission: (1) Provide fully capable special operations forces to defend the United States and its interests; and (2) Synchronize planning of global operations against terrorist networks.

USSOCOM priorities are:

- **Deter, Disrupt & Defeat Terrorist Threats**
  - Plan & conduct special operations
  - Emphasis persistent, culturally-attuned engagement
  - Foster interagency cooperation

- **Develop & Support our People and Families**
  - Focus on quality
  - Care for our people and families
  - Train & educate the joint warrior/diplomat

- **Sustain and Modernize the Force**
  - Equip the operator
  - Upgrade SOF mobility
  - Obtain persistent intelligence, surveillance & reconnaissance systems

II. SOCOM Vision

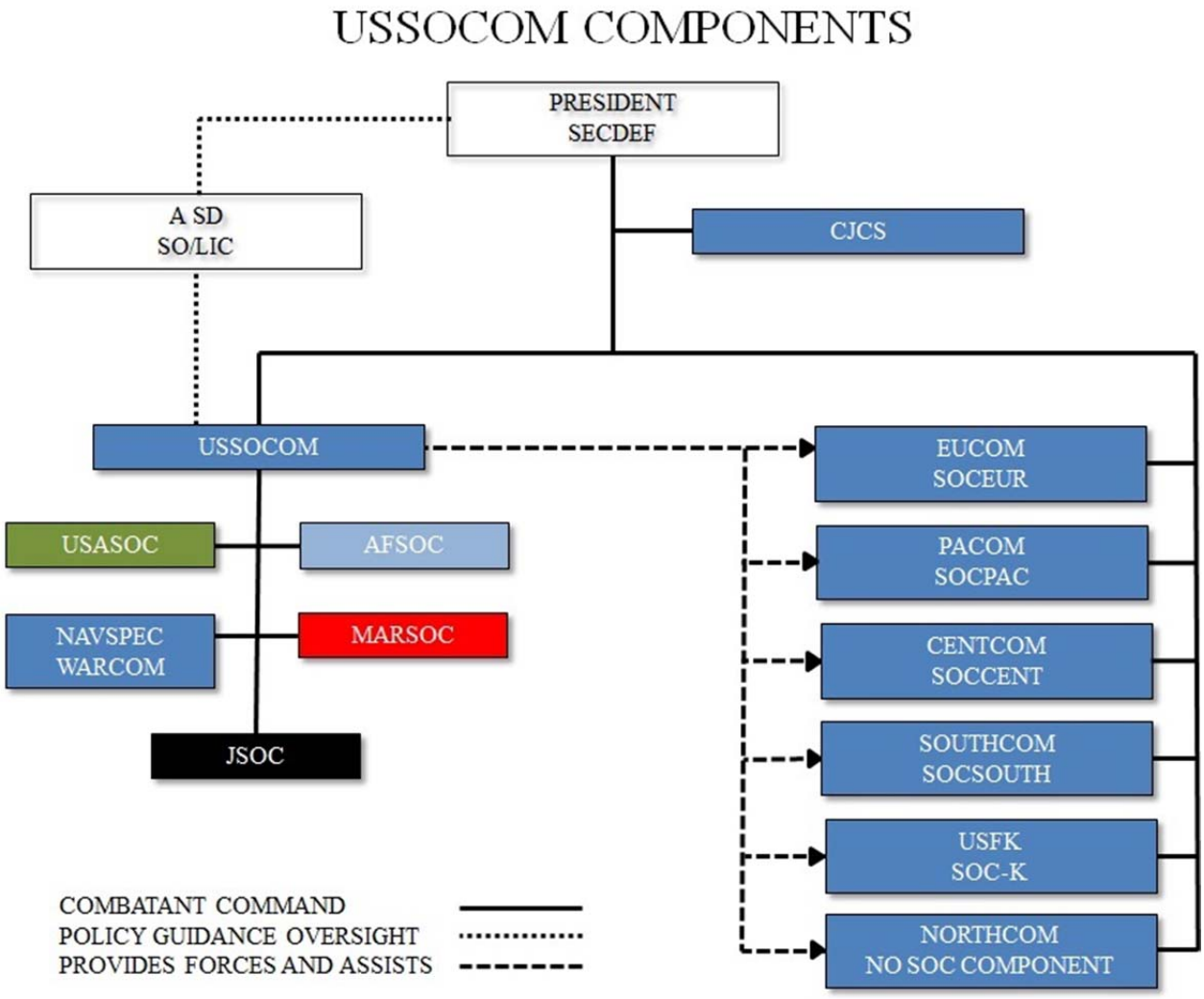
Special Operations Forces must be highly trained, properly equipped and deployed to the right place at the right time for the right missions.

Our commanders and staffs must capably plan and lead the full range of lethal and non-lethal special operations missions in complex, ambiguous environments.

Our people will be professional, diplomatically and culturally astute, responsive and innovative.

As key members of Joint, Interagency, and Internationally teams, SOF will employ all assigned authorities and apply all available elements of power to accomplish assigned missions.

III. Organization



*The sources of this information is from http://www.socom.mil/. The author did clarify oversight and force provider information with additional lines to highlight these relationships.

The Department of Defense (DOD) activated U.S. Special Operations Command (USSOCOM) April 16, 1987, at MacDill Air Force Base, Fla. DOD created the new unified command in response to congressional action in the Goldwater-Nichols Defense Reorganization Act of 1986 and the Nunn-Cohen Amendment to the National Defense Authorization Act of 1987. Congress mandated a new four-star command be activated to prepare Special Operations Forces (SOF) to carry out assigned missions and, if directed by the president or secretary of defense (SECDEF), to plan for and conduct special operations. To enable USSOCOM to carry out its mission, Congress gave the new command specific authorities and responsibilities:

Title 10 Authorities and Responsibilities

- Develop special operations strategy, doctrine and tactics

- Prepare and submit budget proposals for SOF
- Exercise authority, direction and control over special operations expenditures
- Train assigned forces
- Conduct specialized courses of instruction
- Validate requirements
- Establish requirement priorities
- Ensure interoperability of equipment and forces
- Formulate and submit intelligence support requirements
- Monitor Special Operations officers' promotions, assignments, retention, training and professional military education
- Ensure Special Operations Forces' combat readiness
- Monitor Special Operations Forces' preparedness to carry out assigned missions
- Develop and acquire special operations-peculiar equipment, materiel, supplies and services

In addition to the service-like authorities of developing training and monitoring readiness, some of the authorities Congress gave USSOCOM are unique responsibilities for a unified command. USSOCOM is not dependent on the Army, Navy, Marine Corps or Air Force for its budget or to develop and buy new equipment, supplies or services for the command. USSOCOM has its own budgetary authorities and responsibilities through a specific Major Force Program (MFP-11) in DOD's budget. Additionally, USSOCOM has its own acquisition authorities, so it can develop and buy special operations-peculiar equipment, supplies or services.

Before the Sept. 11, 2001, terrorist attacks on the United States, USSOCOM's primary focus was on its supporting command mission of organizing, training and equipping SOF and providing those forces to support the geographic combatant commanders and U.S. ambassadors and their country teams. The president further expanded USSOCOM's responsibilities in the 2004 Unified Command Plan. The Unified Command Plan assigned USSOCOM responsibility for synchronizing DOD plans against global terrorist networks and, as directed, conducting global operations. USSOCOM receives reviews, coordinates and prioritizes all DOD plans that support the global campaign against terror, and then makes recommendations to the Joint Staff regarding force and resource allocations to meet global requirements.

USSOCOM's components are U.S. Army Special Operations Command (USASOC), Naval Special Warfare Command (NAVSPECWARCOM), Air Force Special Operations Command (AFSOC), Marine Corps Forces Special Operations Command (MARSOC) and the Joint Special Operations University. USSOCOM also has a sub-unified command, Joint Special Operations Command (JSOC). USSOCOM has approximately 56,000 active duty, Reserve and National Guard Soldiers, Sailors, Airmen, Marines and DOD civilians assigned to the headquarters, its components, and subordinate unified command.

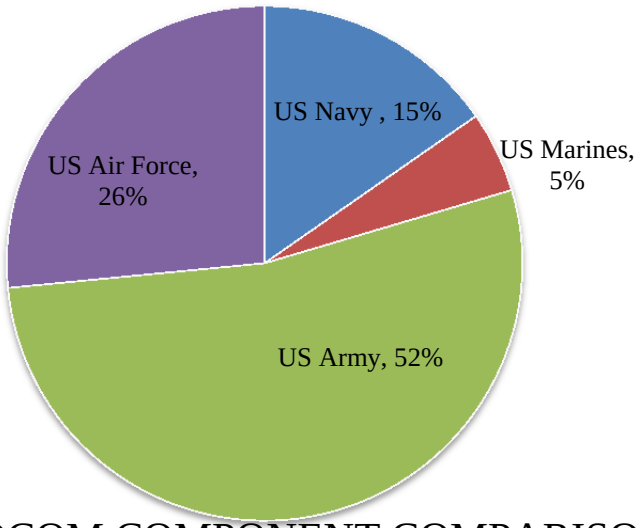
Special Operations Components
SOF is composed of specially selected, trained and equipped Army, Navy, Air Force, and Marine Corps personnel. Each Military Department has established a major command to serve as their respective service component of USSOCOM.

Army: The approximately 30,000 member United States Army Special Operations Command (USASOC) includes active and reserve Special Forces (SF), Special Operations Aviation, Ranger, Military Information Support Operations (MISO) and active Civil Affairs (CA) units.

Navy: The Naval Special Warfare Command (NAVSPECWARCOM) is composed of 9,736 active and reserve operational and support personnel, which include active and reserve Naval Special Warfare Groups (NSWG), Sea-Air-Land (SEAL) Teams, Special Boat Teams (SBT), and an active SEAL Delivery Vehicle (SDV) Team.

Air Force: The 14,745 member Air Force Special Operations Command (AFSOC) is composed of: active, reserve and Air National Guard wings, groups and squadrons of special operations configured fixed and rotary wing aircraft; special tactics units; a foreign internal defense squadron; and a combat weather squadron.

Marine Corps: The 2,611 member Marine Corps Forces Special Operations Command (MARSOC) is composed of Marine Special Operations Battalions, Marine Special Operations Advisory Groups (MSOAG), a Marine Special Operations Support Group (MSOSG), and a Marine Special Operations School (MSOS).



US SOCOM COMPONENT COMPARISON

Note: Manpower numbers for each component are projected FY10 figures based on 2006 Quadrennial Defense Review (QDR)

Other USSOCOM subordinate organizations

Joint Special Operations University (JSOU)
JSOU is an academic institution that provides a full spectrum of educational programs to enhance the SOF warriors' ability to think and effectively interact at both the operational and strategic levels. JSOU is a direct reporting, subordinate element of USSOCOM. JSOU is the designated agency within USSOCOM for joint SOF education and their corporate university.

Joint Special Operations Command (JSOC)
JSOC is a joint headquarters designed to study special operations requirements and techniques, ensure interoperability and equipment standardization, plan and conduct special operations exercises and training, and develop joint special operations tactics.

Theater Special Operations Commands (TSOC)
Each geographic combatant command and Joint Forces Command has a Special Operations component commander just like it has a ground, air and naval component commander. The commander of the TSOC is responsible for commanding all SOF in the theater to which the TSOC is assigned. The TSOC is a sub-unified command of the geographic combatant command and the source of expertise in all areas of Special Operations. The TSOC provides the geographic combatant commanders with the capability to plan and control joint SOF in their theater.

The TSOCs ensure SOF capabilities are considered throughout the entire planning process and that SOF are fully integrated into both peacetime and wartime planning. The TSOC commander is responsible to the geographic combatant commander for planning and conducting joint Special Operations in the theater, ensuring SOF capabilities are matched to mission requirements, exercising operational control of SOF for joint Special Operations, and advising the geographic combatant commander and component commanders in the theater on the proper employment of SOF. Additionally, the SOCs can provide the GCC a standing Joint Task Force (JTF) that can respond immediately to regional emergencies and be built onto or transitioned to a larger force as needed.

Special Operations Command Central (SOCCENT), headquartered at MacDill AFB, Fla., is a subordinate unified command of U.S. Central Command (USCENTCOM). It is responsible for planning Special Operations throughout the USCENTCOM area of responsibility (AOR); planning and conducting peacetime joint/combined Special Operations training exercises; and orchestrating command and control of peacetime and wartime Special Operations as directed. SOCCENT exercises operational control of assigned and attached SOF that deploy for the execution of training and for operational missions in the USCENTCOM AOR as directed by the USCENTCOM commander. When directed by the USCENTCOM commander, SOCCENT forms the nucleus of a JSOTF.

Special Operations Command Europe (SOCEUR) headquarters is located at Patch Barracks, Stuttgart, Germany. SOCEUR is a subordinate unified command of U.S. European Command exercising operational control of theater Army, Navy and Air Force Special Operation Forces. SOCEUR is responsible to the commander of USEUCOM and the

Supreme Allied Commander Europe for SOF readiness, targeting, exercises, plans, joint and combined training, NATO/partnership activities, and execution of counterterrorism, peacetime and contingency operations.

Special Operations Command Pacific (SOCPAC), located at Camp H. M. Smith, Oahu, Hawaii, is a sub-unified command and serves as the SOF component command for the U.S. Pacific Command (USPACOM). The AOR of the commander in chief, U.S. Pacific Command, represents the largest geographic area of the unified commands. It covers over half of the earth's surface with more than 105 million square miles and nearly 60 percent of the world's population. Distance, diversity, and change characterize the USPACOM AOR.

Special Operations Command South (SOCSOUTH) is a sub-unified command of U.S. Southern Command, SOCSOUTH is the theater functional component for Special Operations. It is responsible for all Special Operations Forces in the theater to include Civil Affairs and Information Operations Forces. SOCSOUTH's headquarters is located at Homestead Air Reserve Base, Fla. SOCSOUTH is composed of a joint headquarters, three permanently assigned operational units, and CONUS-based deployed SOF. The command manages more than 200 SOF deployments per year with an average of 42 missions in 26 countries at any time.

Special Operations Command Africa (SOCAFRICA) is a subordinate unified command of U.S. Africa Command (AFRICOM), and is currently headquartered in Stuttgart, Germany. SOCAFRICA leads, plans, coordinates, and as directed, executes the full spectrum of special operations by, with, through, or in support of U.S. government departments and agencies, partner nations and other organizations as part of an integrated theater strategy, in order to promote regional stability, combat terrorism, and advance U.S. strategic objectives in the AFRICOM AOR. SOCAFRICA's approach is different from the traditional approach to special operations headquarters. SOCAFRICA will fully integrate interagency partner nation capabilities into planning and execution of operations. SOCAFRICA will support, facilitate, and/or leverage existing civilian and military capabilities and actors in the AFRICOM AOR.

Special Operations Command Korea (SOCKOR), located at Camp Kim in Yongsan, Korea, is the Theater SOC responsible for Special Operations on the Korean peninsula and, when established, the Korean Theater of Operations (KTO). The KTO and SOCKOR exist because there has never been a peace treaty officially ending the Korean War. Military forces on the Korean Peninsula maintain a heightened state of readiness to respond to the resumption of hostilities with little or no warning.

IV. Concept of Operations

Special Operations are conducted by specially organized, trained and equipped military and paramilitary forces to achieve military, political, economic or informational objectives by unconventional military means in hostile, denied or politically sensitive areas. These operations are conducted during peacetime, conflict and war, independently or in coordination with conventional forces. Politico-military considerations frequently shape special operations that often require clandestine, covert or low visibility techniques and

oversight at the national level. Special operations differ from conventional operations in degree of physical and political risk, operational techniques, mode of employment, independence from friendly support and dependence on detailed operational intelligence and indigenous assets.

Five characteristics that distinguish Special Operations from conventional military operations are:

- No broad conventional force requirement
- Low visibility or clandestine
- Independent or in conjunction with a General Purpose Force (GPF)
- Level of physical and political risk
- Dependence on detailed operational intelligence

SOF Core Activities are:

Direct Action (DA): Short-duration strikes and other small-scale offensive actions taken to seize, destroy, capture or recover in denied areas.

Special Reconnaissance (SR): Acquiring information concerning the capabilities, intentions and activities of an enemy.

Unconventional Warfare (UW): Operations conducted by, through and with surrogate forces that are organized, trained, equipped, supported and directed by external forces.

Foreign Internal Defense (FID): Providing training and other assistance to foreign governments and their militaries to enable the foreign government to provide for its country's national security.

Civil Affairs (CA) Operations: Activities that establish, maintain or influence relations between U.S. forces and foreign civil authorities and civilian populations to facilitate U.S. military operations.

Counterterrorism (CT): Measures taken to prevent, deter and respond to terrorism.

Military Information Support Operations (MISO): Operations that provide truthful information to foreign audiences that influence behavior in support of U.S. military operations.

Information Operations (IO): Operations designed to achieve information superiority by adversely affecting enemy information and systems while protecting U.S. information and systems.

Counterproliferation of Weapons of Mass Destruction (CP): Actions taken to locate, seize, destroy or capture, recover and render such weapons safe.

Security Force Assistance (SFA): Unified action by joint, interagency, intergovernmental and multinational community to sustain and assist host nation or regional security forces in support of a legitimate authority.

Counterinsurgency (COIN) Operations: Those military, paramilitary, political, economic, informational and civic actions taken by a government to defeat insurgency.

Activities Specified by the president or SECDEF

V. General Information

U.S. Army Special Operations Forces
U.S. Army Special Operations Forces consist of approximately 30,000 personnel represented by Special Forces (SF), Rangers, Special Operations Aviation Regiment (SOAR), Military Information Support Operations (MISO) and Civil Affairs (CA) units.

Army SF conducts missions deep within the enemy's rear, far ahead of the forward limits of conventional forces. SF units plan, conduct, and support special operations throughout the spectrum of conflict. Their principal core tasks are UW, FID, DA, SR, and CT. Each SF Group is regionally focused on a particular geographic area. The fundamental operating element is the 12-man SF Operational Detachment-Airborne (ODA) although smaller elements are routinely employed in response to specific mission requirements. Geographically oriented, culturally attuned and language trained, SF personnel excel in teaching: basic combat infantry tactics, light weapons, demolitions, field communications, combat intelligence, and paramedical support.

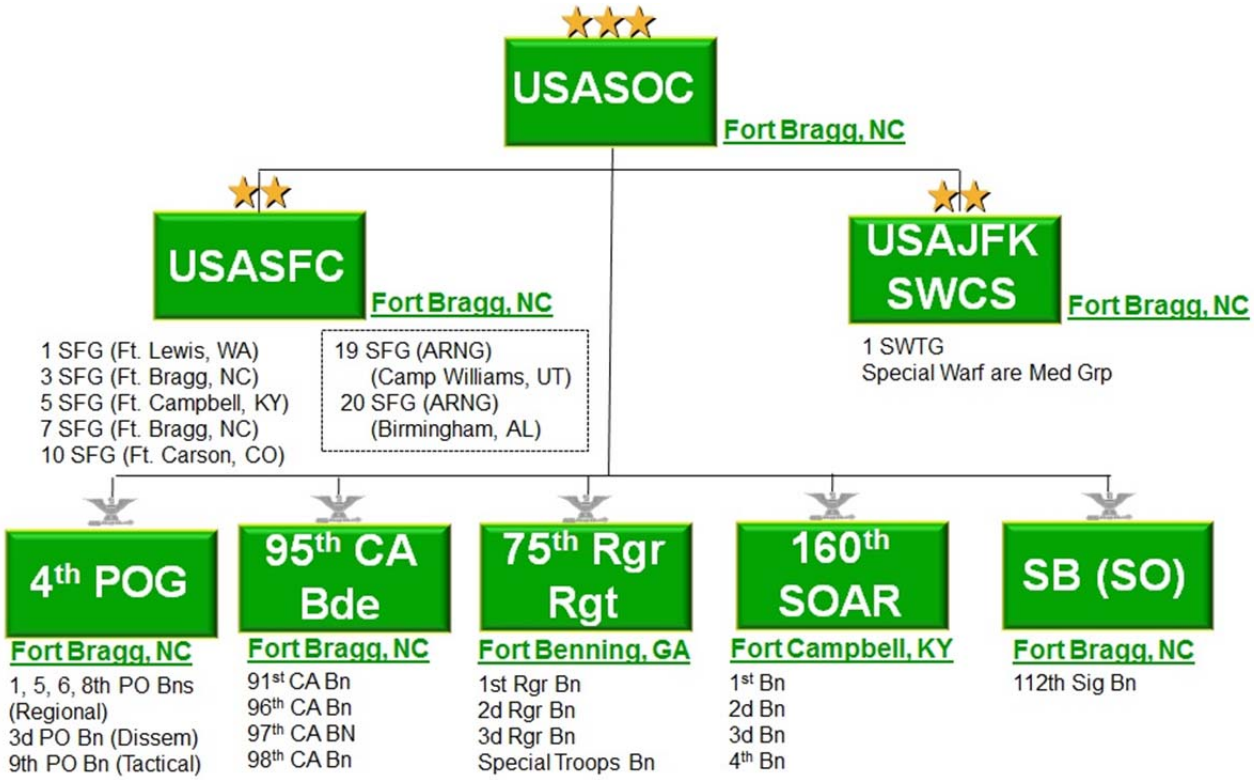
As an elite light infantry force, the Army Rangers are organized into one regiment consisting of three battalions and a headquarters company. Together they employ over 2,400 personnel who operate independently, with other SOF, or in support of conventional forces. They specialize in quick strike DA, airfield seizures, deep penetration raids, urban combat, non-combatant evacuation operations and recovery of personnel and/or equipment.

The SOAR provides dedicated tactical mobility for SF and other SOF. Comprised of one active regiment, their mission is to provide a night, all-weather, medium range insertion, extraction and resupply capability in hostile or denied areas. They specialize in selected rescue and recovery missions, medical evacuations, armed attack, deep penetration and command and control. Inventories include MH-60K BLACK HAWK, MH-47E CHINOOK, and AH/MH-6 special operations configured helicopters.

MISO units develop, produce and disseminate information to foreign audiences in support of U.S. national and political objectives. Used during peacetime, contingency operations and declared war, MISO is a force multiplier that relies on nonviolent means in often violent environments. Persuading rather than physically compelling, they rely on logic, fear, desire or other motivational factors to promote specific emotions, attitudes or behaviors. The mission of information operations is to influence foreign audiences, advise a supported

commander, provide public information to foreign populations, serve as the commander's voice to foreign populations and/or counter enemy propaganda.

Civil Affairs support military commanders during peacetime, contingency operations and war by working with civil authorities and civilian populations in the commander's area of operations. Civil Affairs specialists identify critical requirements needed by local citizens in war or disaster situations. They also locate civilian resources to support military operations, help minimize civilian interference with operations, support national assistance activities, plan and execute noncombatant evacuations, support counterdrug operations and establish and maintain liaison with civilian aid agencies and other nongovernmental organizations, provide functional expertise for foreign internal defense operations, unconventional warfare operations and direct-action missions. The Civil Military Operations Center (CMOC) may be established to enhance coordination between the military, inter-agency and non-governmental organizations.



Naval Special Warfare Forces

Naval Special Warfare (NSW) forces number approximately 9,700 personnel and support technicians that conduct maritime special operations in support of joint and naval operations. Principal core tasks are SR, DA, FID and CT. NSW forces are deployed under the OPCON of either a naval component or joint force commander. ADCON is retained by the parent command.

Naval Special Warfare Groups are major commands that train, equip and deploy components of NSW squadrons to meet the exercise, contingency and wartime requirements of

geographic combatant commanders, Theater Special Operations Commands, and numbered fleets located around the world.

NSWTG and NSWTU are task organized force packages deployed to joint and fleet commanders to plan, coordinate, command and conduct NSW operations. A NSWTG is task organized to provide command and control of one or more NSWTU. A NSWTU is composed of a command and control element, a support element, and a combination of one or more SEAL or SDV platoons, and/or special boat detachments.

Sea-Air-Land (SEAL) teams are CONUS-based commands established to train, equip, deploy and support SEAL platoons to conduct NSW in support of joint and fleet commanders. Each team consists of six 16-man SEAL platoons composed of two officers and 14 enlisted operators and requisite support personnel. SEALs conduct clandestine missions infiltrating their objective areas by fixed- and rotary-wing aircraft, Navy surface ships, combatant craft, submarines and ground mobility vehicles. When directed, a SEAL team deploys as a Naval Special Warfare Squadron (NSWSQRN) disbursing its forces in smaller Task Units or Task Elements to plan, coordinate, command, and conduct special operations.

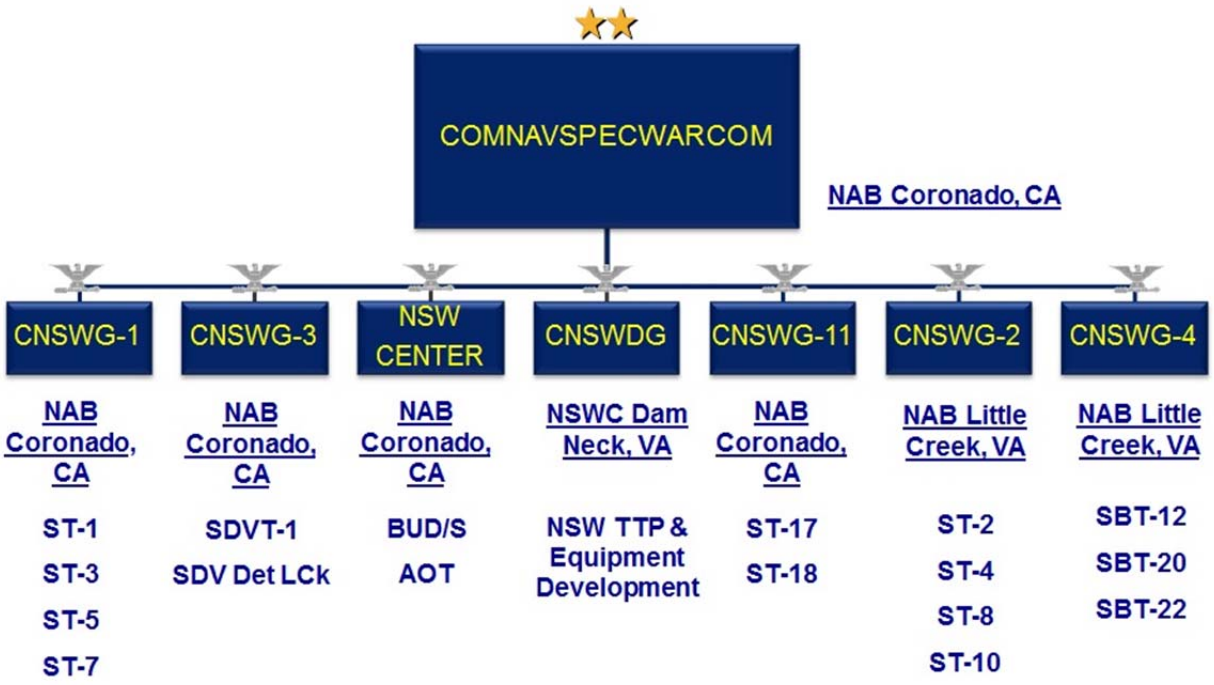
Special Boat Teams (SBT) are manned by Special Warfare Combatant-craft Crewmen (SWCC) who operate and maintain state-of-the-art surface craft to conduct coastal patrol and interdiction and support special operations missions. Focusing on infiltration and exfiltration of SEALs and other SOF, SWCC's provide dedicated rapid mobility in shallow water areas where larger ships cannot operate. They also bring to the table a unique SOF capability, the ability to deliver combat craft via parachute drop (Maritime Combatant Craft Aerial Delivery System).

The SEAL Delivery Vehicle (SDV) team comprises specially trained SEALs and support personnel who conduct undersea operations from SDVs, Dry Deck Shelters (DDS), and the Advanced SEAL Delivery System (ASDS). DDS deliver SDVs and specially trained forces from modified submarines. When teamed with their host submarines, the ASDS and SDV platforms provide the most clandestine maritime delivery capability in the world.

Naval Special Warfare Combat Service Support Teams provide full-spectrum logistics support to SEAL (sea, air, land) Teams, Special Boat Teams, NSW Task Groups/Task Units. Tasking for each CSST includes crisis-action and logistics planning and coordination; in-theater contracting, small purchase and leasing actions; and comprehensive forward operating base support.

Naval Special Warfare Development Group (NAVSPECWARDEVGRU) provides centralized management for the test, evaluation, and development of current and emerging technologies applicable to NSW. It also develops maritime, ground, and airborne tactics for NSW.

Training, tactics and doctrine development occurs at the Naval Special Warfare Center (NAVSPECWARCEN). The Center also provides instruction and training in NSW for selected allied military personnel.



U.S. Air Force Special Operations Forces

Air Force Special Operations Command (AFSOC) is a major command and the Air Force component of U.S. Special Operations Command, a unified command located at MacDill Air Force Base, Fla. AFSOC has approximately 15,000 active-duty, Air Force Reserve, Air National Guard and civilian personnel. The command's five active-duty and five Reserve component flying units are composed of more than 160 fixed-wing aircraft, including the AC-130H/U, C-130, EC-130J, HC-130, MC-130E/H/W, MC-130P, HH-60, U-28A and the CV-22. The command also contains both a predator (MQ-1) and reaper (MQ-9) squadron.

AFSOC provides Air Force special operations forces worldwide deployment and assignment to regional unified commands. AFSOC's core tasks have been grouped into four mission areas: forward presence and engagement, information operations precision employment and strike, and special operations forces mobility.

AFSOC is responsible to USSOCOM for the readiness of Air Force special operations forces for worldwide deployment. The command's SOF are composed of highly trained, rapidly deployable airmen who are equipped with specialized aircraft. These forces provide global ability to conduct special operations missions ranging from precision application of firepower, to infiltration, exfiltration, resupply and refueling of SOF operational elements.

AFSOC's unique capabilities include airborne radio and television broadcast for information operations, as well as combat aviation advisors to provide other governments military

expertise for their internal development. The command's special tactics squadrons combine combat control, combat weather and pararescuemen to ensure air power is integrated and operable with special operations and conventional forces.
AFSOC forces' missions include close air support, infiltration, exfiltration, resupply, aerial refueling, aviation foreign internal defense, intelligence support to special operations (including unmanned aerial surveillance), and airborne radio and television broadcast in support of information operations.

Special Tactics, AFSOC's Battlefield Airmen, is comprised of combat control, pararescue and special operations weather, and tactical air control party personnel capable of providing terminal guidance for weapons, control of assault zone aircraft, fire support, mission planning, medical and weather support. Special Tactics Teams frequently operate with Navy SEALs, Army Rangers and Special Forces in direct action, airfield seizure and personnel recovery missions in hostile territory.

Combat Controllers (CCT) are Special Operators and certified air traffic controllers who are an integral part of the Air Force Battlefield Airmen team. CCT are often the first deployed into restricted environments by air, land or sea assigned with the mission of establishing assault zones (a drop zone for parachute operations, a landing zone for fixed wing or helicopter operations, or an extraction zone for low altitude re-supply). The CCT's establish navigational aid equipment anywhere in the world to guide aircraft for landing on makeshift runways without the benefit of a tower or large communication system. CCT also control air attacks from all military services aircraft, provide vital command and control, intelligence gathering, surveying capabilities, limited weather observations and are qualified in demolition to clear hazards and obstructions from runways and landing zones.

Combat Aviation Advisors (CAA) help U.S. global partners to wield airpower. These Air Commandos are culturally savvy, linguistically trained and politically astute Airmen, hand selected for their skill, maturity and professionalism to advise foreign forces in rotary and fixed-wing combat aviation, maintenance, base support, security and tactics. They execute the aviation foreign internal defense (FID) mission and train foreign units in specialized and unconventional tactics.

Pararescuemen (PJ) are the only DOD specialty specifically trained and equipped to conduct conventional and unconventional recovery operations. A PJ's primary function is as a personnel recovery specialist, with emergency trauma medical capabilities in humanitarian and combat environments. They deploy in any available manner, from any available platform, to include air-land-sea tactics, into restricted environments to contact, authenticate, extract, treat, stabilize and evacuate injured personnel, while acting in an enemy-evading, recovery role. PJs participate in combat search and rescue, peacetime search and rescue, and protection of the president of the United States, and conduct other operations at the commander's direction.

Special Operations Weathermen are trained meteorologists with forward ground combat capabilities. They interpret weather data and provide intelligence from deployed locations. Working with Special Operations teams, they collect localized weather intelligence, assist

mission planning, generate accurate and mission-tailored target and route forecasts in support of global special operations, conduct special weather reconnaissance and train foreign national forces.

AFSOC's forces are organized under two active-duty wings, one Reserve wing and one National Guard wing, two overseas groups and several direct report units. The command operates two major active-duty bases.

The 1st Special Operations Wing (SOW) is located at Hurlburt Field and is primarily responsible to U.S. Central, Joint Forces, and Southern commands, but also provides augmentation forces to AFSOC groups forward deployed in Europe and the Pacific.

The 27th SOW is located at Cannon AFB, NM. The primary mission of the 27th Special Operations Wing is to plan and execute specialized and contingency operations using advanced aircraft, tactics, and air refueling techniques to infiltrate, exfiltrate, and resupply special operations forces and provide intelligence, surveillance and reconnaissance, and close air support in support of SOF operations.

The 352nd Special Operations Group, at Royal Air Force Mildenhall, England, is the Air Force component for Special Operations Command Europe.

The 353rd Special Operations Group, at Kadena Air Base, Japan, is the Air Force component for Special Operations Command Pacific.

The 720th Special Tactics Group at Hurlburt Field provides combat controllers, combat weathermen and pararescuemen.

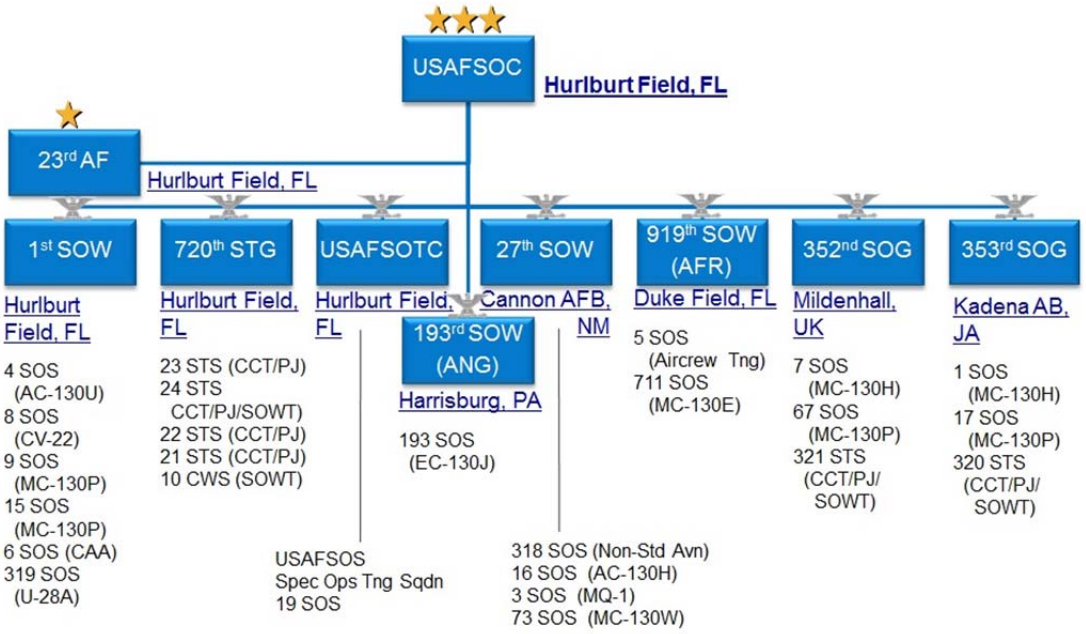
The Air Force Special Operations Training Center is a primary support unit of AFSOC. The training center mission is to recruit, assess, select and conduct AFSOC-specific training, including aircrew qualification, special tactics, Combat Aviation Advisor and courses conducted at the Air Force Special Operations School.

The 19th Special Operations Squadron is an advanced weapons instruction and mission rehearsal unit and is AFSOC’s formal school for AC-130H, AC-130U, MC-130E, U-28 and Combat Aviation Advisors.

The 18th Flight Test Squadron at Hurlburt Field, conducts operational and maintenance suitability tests and evaluations for equipment, concepts, tactics and procedures for employment of special operations forces.

The 919th Special Operations Wing at Duke Field, Fla., is the command's only Special Operations Reserve Wing. It provides MC-130E and MC-130P aircraft that support helicopter refueling requirements to USSOCOM.

The 193rd Special Operations Wing at Harrisburg International Airport, Pa., provides the only airborne information operations platform in the Department of Defense with the EC-130 Commando Solo.



U. S. Marine Corps Special Operation Forces

As the Marine component of USSOCOM, MARSOC is tasked to train, organize, equip and when directed by commander of USSOCOM, deploy task organized U.S. Marine Corps Special Operations Forces worldwide in support of combatant commanders and other agencies. Commander, USSOCOM assigns MARSOC missions based on USSOCOM priorities. MARSOC core tasks are Foreign Internal Defense (FID), Special Reconnaissance (SR), Information Operations (IO), Unconventional Warfare (UW), Direct Action (DA), and Counterterrorism (CT).

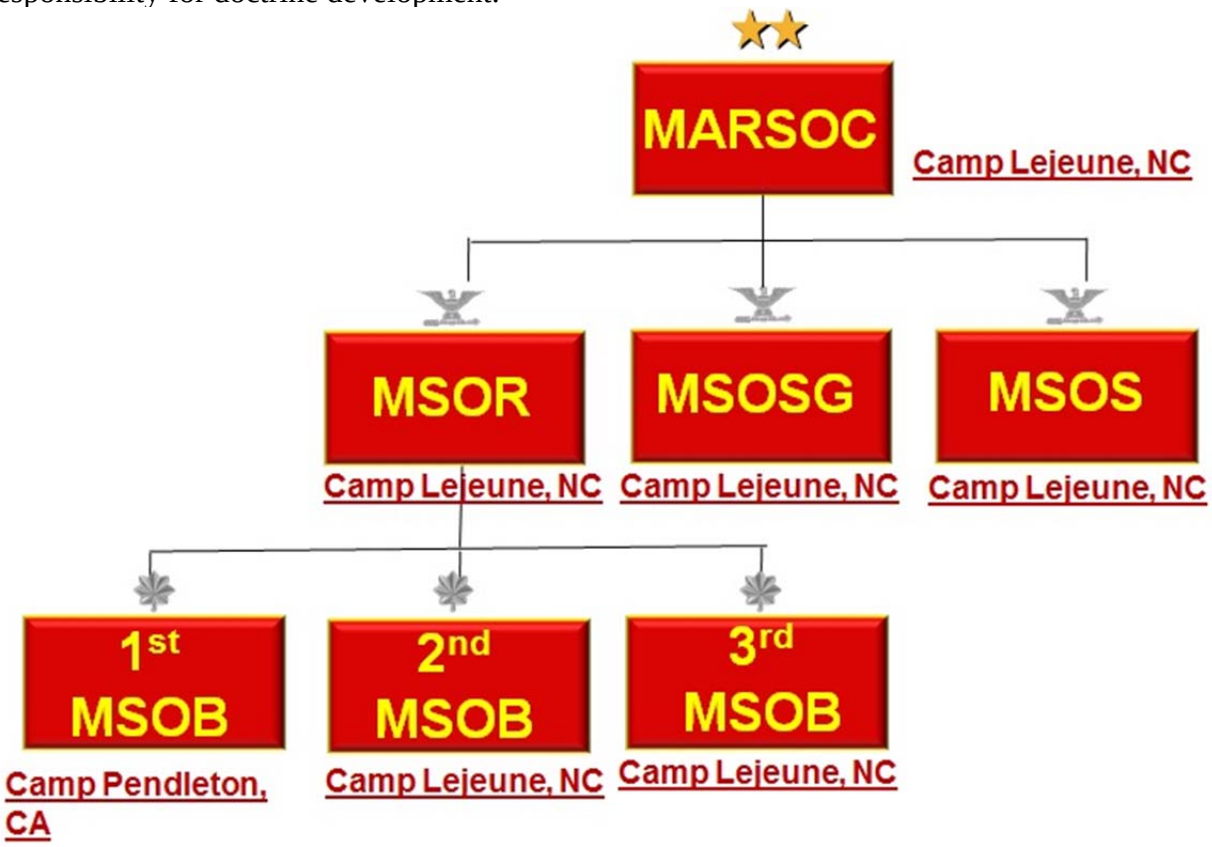
Marine Special Operations Battalions (MSOB) are organized, trained and equipped to deploy for worldwide missions as directed by MARSOC. First MSOB is headquartered at Camp Pendleton, California, while 2nd MSOB is headquartered at Camp Lejeune, N.C. Each battalion consists of four Marine Special Operations Companies (MSOC) and is task-organized with personnel uniquely skilled in special equipment support, intelligence and fire-support. Each MSOC is commanded by a Marine major and capable of deploying task-organized expeditionary Special Operations Forces for special reconnaissance and direct-action missions in support of the geographic combatant commanders.

The Marine Special Operations Advisor Group (MSOAG), which consists of a Headquarters Company and 3rd and 4th Marine Special Operations Battalions, provides tailored military combat-skills training and advisor support for identified foreign forces in order to enhance their tactical capabilities and to prepare the environment as directed by USSOCOM. Marines and Sailors of the MSOAG train, advise and assist friendly host-nation forces—including naval and maritime military and paramilitary forces—to enable them to support their governments' internal security and stability, to counter subversion and to reduce the risk of violence from internal and external threats. MSOAG deployments are coordinated by

MARSOC, through USSOCOM, in accordance with engagement priorities within the Global War on Terrorism.

The Marine Special Operations Support Group (MSOSG) is located at Camp Lejeune and provides combat support and combat service support to MARSOC Units, to include: logistics, communication and intelligence.

The Marine Special Operations School (MSOS), also located at Camp LeJeune, screens, assesses, selects, trains and certifies Marine personnel as special operations forces and has responsibility for doctrine development.



STRATEGIC LIFT

I. Mission, Organization, and Resources

The ability of the U.S. military to successfully carry out its assigned tasks per our National Security Strategy and National Military Strategy depends greatly on its capability to deploy forces, equipment, and sustainment to a theater of operations within a given period of time. While logistics includes all those supporting activities required to sustain a deployed force, strategic mobility defines that part of the logistics process which transports people, equipment, supplies, and other commodities by land, sea, and air, to enable military force projection. In fact, the operational commander must have a clear understanding of the capabilities and limitations of the strategic mobility process if he or she is going to successfully execute a major operation or campaign. Force selection, phasing of operations, and risk assessment are directly tied to the ability to project forces and support from the United States to the area of responsibility, area of operation, or theater of war.

United States Transportation Command (USTRANSCOM) overseees the strategic mobility process in both peace and war. USTRANSCOM's charter is to maintain and operate a deployment system for orchestrating the transportation aspects of worldwide mobility planning, integrate deployment-related Information Management systems, and provide centralized wartime traffic management. Actual movement is executed by USTRANSCOM component commands: Surface Deployment and Distribution Command (SDDC-Army), Military Sealift Command (MSC-Navy), and Air Mobility Command (AMC-Air Force). The Department of Transportation's Maritime Administration (MARAD) bridges MSC, U.S. flag commercial companies, and U.S. unions for sealift procurement and operations. Each element of the strategic mobility triad (airlift, sealift, and prepositioning) has distinct advantages and disadvantages in terms of response time, availability of carrying assets, carrying capacity and throughput, and vulnerability.

Air Mobility Command (AMC) [5]

Air Mobility Command, a major command headquartered at Scott Air Force Base, Ill., was created June 1, 1992. AMC provides America's Global Reach. This rapid, flexible and responsive air mobility promotes stability in regions by keeping America's capability and character highly visible. As the Air Force component command of USTRANSCOM, AMC provides air lift, air refueling, and aeromedical evacuation services for deploying, employing, sustaining, and redeploying U.S. forces worldwide. Additionally, AMC is the worldwide aerial port manager and, where designated, operator of common-user aerial ports of embarkation (APOEs) and aerial ports of debarkation (APODs). AMC operationally directs the use of domestic and international airlift services, including the Civil Reserve Air Fleet (CRAF) Program. Unique airlift capabilities include Channel, Worldwide Express (WWX), Category A, Category B, Patriot Express, General Services Administration (GSA) City Pairs, International Air Tenders, and Special Assignment Airlift Missions (SAAMs).

[5] The information in this section is extrated directly from USTRANSCOM Handbook 24-2, *Understanding the Defense Transportation System*. Some of the information has been editied specifically for this audience.

- **Channel Airlift**: Channel airlift missions support passengers and cargo moving over established worldwide routes (combatant commander or Service-validated) that are served by scheduled DOD aircraft under AMC control or commercial aircraft contracted and scheduled by AMC. These missions provide routine and express airlift channel services to meet customer needs. AMC provides service from APOE to APOD and measures performance using metrics which are outlined in DOD 4140.1 Series (DOD Supply Chain Material Management Regulation). There are approximately 225 AMC channels comprised of cargo/passenger, aeromedical evacuation, and passenger gateways.

- **Category A:** Category A (CAT A) is a contract between AMC and the commercial air carrier industry allowing cargo to be individually way billed between CONUS and overseas stations or between overseas stations. Rates are negotiated for each channel with a guaranteed minimum weight break for the carrier.

- **Category B**: Category B (CAT B) is a contract between AMC and the commercial air carrier industry for dedicated use of cargo or passenger airlift between points, usually aerial ports. CAT B service may meet recurring requirements such as Patriot Express and augmentation of AMC channels or single requirements such as Special Assignment Airlift Mission (SAAM) movements. AMC makes payment to the carrier via contract. Users then reimburse AMC at the established common-user rate which is a forecast of special category and exercise cargo, a specified rate per person per airplane, or by pound for cargo.

- **Patriot Express:** Patriot Express is an AMC-procured planeload charter on commercial aircraft. Passengers move in full planeload lots on an aircraft chartered from the commercial air industry. Payment is made to the carrier via contract with AMC. Users reimburse AMC at the established common-user rate which is a forecast of special category and exercise cargo, a specified rate per person per airplane, or by pound for cargo.

- **General Services Administration City Pairs:** General Services Administration (GSA) City Pairs is contract air service for official Government travel. Policy mandates its use by government employees. Fares apply one-way between specific airports and are considered to be the greatest value available to the Government.

- **Worldwide Express:** Worldwide Express (WWX) is a fast, reliable, time-definite, international, express small package service for high priority, non-hazardous packages weighing 150 pounds or less and similar premium international service for heavyweight packages weighing 151-300 pounds (International Heavyweight Express -IHX). AMC partnered with DOD to leverage CRAF-qualified express-carriers for this international express delivery service. Features of the service include door-to-door pick up and delivery; time-definite delivery; customs clearance; and visibility through the Global Transportation Network (GTN). Shippers must provide shipment information and a viable fund citation for acceptance/movement via WWX carriers. DOD is a mandatory user for all shipments that fall under the scope of this contract.

- **International Air Tenders:** In accordance with Defense Transportation Regulation (DTR), Part II, DTS users may not negotiate directly with commercial carriers for service. However, if all other DTS options have been exhausted, agreements between USTRANSCOM and supported commands may allow DTS users to negotiate services directly with AMC-approved tender carriers to establish rates, charges, rules, and accessorial services. Tenders are AMC-approved offers by a qualified CRAF carrier to provide international cargo movement under a negotiated rate schedule for specific traffic lanes. The DTS customer executes AMC-approved tenders through Commercial Bills of Lading, Government Bills of Lading, Electronic Bills of Lading, or local payment procedures. Tender service and performance are based on commercial carrier capabilities into geographic areas or lanes. AMC approves tenders based on USTRANSCOM validation of combatant command and Service requirements. The shipper has flexibility to choose an AMC-approved tender carrier based on cost, performance, and capabilities.

- **Special Assignment Airlift Mission:** Special Assignment Airlift Missions (SAAM) perform special pickup or delivery at points other than established AMC routes or channels. Service is from origin to destination.

Civil Reserve Air Fleet (CRAF) [6]

A unique and significant part of the nation's mobility resources is the Civil Reserve Air Fleet. Selected aircraft from U.S. airlines, contractually committed to CRAF, support Department of Defense airlift requirements in emergencies when the need for airlift exceeds the capability of military aircraft.

The CRAF has three main segments: international, national and aeromedical evacuation. The international segment is further divided into the long-range and short-range sections and the national segment into the domestic and Alaskan sections. Assignment of aircraft to a segment depends on the nature of the requirement and the performance characteristics needed.

The long-range international section consists of passenger and cargo aircraft capable of transoceanic operations. The role of these aircraft is to augment the Air Mobility Command's long-range intertheater C-5s and C-17s during periods of increased airlift needs, from minor contingencies up through full national defense emergencies.

Medium-sized passenger and cargo aircraft make up the short-range international section supporting near offshore airlift requirements.
The aeromedical evacuation segment assists in the evacuation of casualties from operational theaters to hospitals in the continental United States. These aircraft are also used to return medical supplies and medical crews to the theater of operations. Kits containing litter stanchions, litters and other aeromedical equipment are used to convert civil B-767 passenger aircraft into air ambulances.

[6] This information in this section is extrated directly from the Official United States AIR FORCE WEBSITE Fact Sheet Civil Reserve Air Fleet http://www.af.mil/factsheets/factsheet.asp?id=173 and the USTRANSCOM Handbook 24-2.

The airlines contractually pledge aircraft to the various segments of CRAF, ready for activation when needed. To provide incentives for civil carriers to commit aircraft to the CRAF program and to assure the United States of adequate airlift reserves, the government makes peacetime airlift business available to civilian airlines that offer aircraft to the CRAF. DoD offers business through the International Airlift Services. For fiscal 2007, the guaranteed portion of the contract is $379 million.

To Join CRAF, carriers must maintain a minimum commitment of 30 percent of its CRAF-capable passenger fleet and 15 percent of its CRAF-capable cargo fleet. Aircraft committed must be U.S. registered and carriers must also commit and maintain at least four complete crews for each aircraft.

As of May 2007, 37 carriers and 1,364 aircraft were enrolled in the CRAF. This includes 1,273 aircraft in the international segment (990 in the long-range international section and 283 in the short-range international section), and 37 and 50 aircraft, respectively, in the national and aeromedical evacuation segments, and four aircraft in the Alaskan segment. These numbers are subject to change on a monthly basis.

Three stages of incremental activation allow for tailoring an airlift force suitable for the contingency at hand. Stage I is for minor regional crises, Stage II would be used for major theater war and Stage III for periods of national mobilization.

The commander, U.S. Transportation Command, with approval of the secretary of defense, is the activation authority for all three stages of CRAF. During a crisis, if AMC has a need for additional aircraft, it would request the commander of USTRANSCOM to take steps to activate the appropriate CRAF stage.

Each stage of the CRAF activation is only used to the extent necessary to provide the amount of civil augmentation airlift needed by DOD. When notified of call-up, the carrier response time to have its aircraft ready for a CRAF mission is 24 to 48 hours after the mission is assigned by AMC. The air carriers continue to operate and maintain the aircraft with their resources; however, AMC controls the aircraft missions.

CRAF Stage I, "Committed Expansion." This stage involves DOD use of civil air resources that air carriers will furnish to DOD to support substantially expanded peacetime military airlift requirements. This stage supports regional crises or small-scale contingencies.
CRAF Stage II, "Defense Airlift Emergency." This stage involves DOD use of civil air resources that the air carriers will furnish to DOD in time of a defense airlift emergency. This stage supports major regional conflicts or a major theater war.
CRAF Stage III, "National Emergency." This stage involves use of civil air resources owned by a US entity or citizen that the air carriers will furnish to DOD in time of declared national defense-oriented emergency or war, or when otherwise necessary for the national defense. This stage supports multiple theaters of war and national mobilization. This stage has never been activated.

Military Sealift Command (MSC)[7]

As the Navy component of USTRANSCOM, MSC provides common-user sealift services to deploy, employ, sustain and redeploy U.S. forces around the globe. MSC operates sealift ships that include short- and long-term charter tankers and dry cargo ships that transport DOD cargo during peacetime and war. During contingencies, MSC uses its government owned surge sealift fleet of Large Medium Speed Roll-On/Roll Off (LMSR) vessels that can be rapidly loaded with equipment and supplies and deployed where needed. MSC also employs Fast Sealift Ships (FSS) and ships from the Ready Reserve Force (RRF). These ships, owned and maintained in reduced operating status by MARAD, come under MSC control when activated. Under normal peacetime conditions, the MSC force consists of government-owned ships as well as privately-owned ships under charter to MSC. When demand increases, MSC can expand its fleet by acquiring additional sealift from a variety of resources and through a number of different acquisition programs. MSC resources available to the DTS beyond MSC's active peacetime fleet are fast sealift ships (FSS), large, medium speed roll-on/roll-off (LMSR) ships, and pre-positioned ships.

- **Fast Sealift Ships (FSS).** The FSSs are former containerships, purchased by the Navy and converted to RO/RO configuration with on-board cranes and self-contained ramps that enable the ships to off-load onto lighterage while anchored at sea or in ports where shore facilities for unloading equipment are unavailable. The vessels are specially suited to transport heavy or bulky unit equipment such as tanks, large wheeled vehicles and helicopters. The present eight ships have a joint, one-time lift capability of approximately 1.3 million square feet and also have a container capability. These ships are capable of carrying 150,000 square feet of Army, combat, combat support, or combat service support equipment at a speed of 27 knots. On Oct. 1 2007, The U.S. Maritime Administration began operating all eight FSS. The FSS transfered to the RRF on Oct. 1, 2008.

- **Large Medium Speed Roll-On/Roll–off Ships (LMSR).** An LMSR is similar to any other RO/RO ship in that it is specially designed to carry wheeled and tracked vehicles as all or most of its cargo. A LMSR differs from most other RO/RO ships in that it is faster, larger and has cranes and hatches to support LO/LO operations. LMSR ships carry two Army heavy brigades pre-positioned afloat, and 11 LMSR ships are lay berthed in CONUS to deploy Army equipment. These ships can maintain a speed of 24 knots.

- **Pre-positioned Ships**. MSC has a large fleet of pre-positioned ships that can be used for common-user sealift once they discharge their cargo. The following section describes the Afloat Prepositioning Force in detail.

[7] The information in this section has been directly excerpted from Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System*, Washington DC: 19 March 2003. and Military Sealift Command fact sheets. http://www.msc.navy.mil/factsheet/apf.asp

Afloat Prepositioning Force[8]

Military Sealift Command's Afloat Prepositioning Force was established in the early 1980s to provide inter-theater mobility and reduce response time for the delivery of urgently needed U.S. military equipment and supplies to a theater of operations during a war or contingency. Over the years, the APF has expanded to 29 ships operating around the world.

- Sixteen Maritime Prepositioning Force ships carry equipment and supplies for the U.S. Marine Corps.

- Army Prepositioned Stocks-3 ships carry equipment and supplies for a U.S. Army heavy brigade and combat support/combat service support elements.

- Navy, Defense Logistics Agency and Air Force ships (mostly tankers and dry cargo ships) are loaded primarily with Defense Logistics Agency fuels, Air Force ammunition, Marine Corps aviation support equipment and Navy munitions.

Maritime Prepositioning Ships

Maritime Prepositioning Ships are loaded with U.S. Marine Corps equipment and operate within a short sailing time of potential contingency sites.

One squadron of MPF ships can provide all the equipment and supplies to support a U.S. Marine Expeditionary Brigade of about 15,000 personnel for 30 days. The ships are capable of off-loading at piers or offshore with special lighterage equipment. Each ship has roll-on/roll-off capability and a flight deck for helicopter operations.

The Maritime Prepositioning Force concept of operations calls for U.S. Marine Corps and Navy support personnel to fly to a contingency site concurrently with the MPF ships sailing. Once personnel have arrived in the theater of operations, the ships are off-loaded and Marines can quickly move into combat.

MPF ships are designated MV for motor vessel and SS for steam ship. MPF ships designated USNS are government-owned ships operated by mariners employed by companies under contract to MSC.

Army Prepositioned Stocks-3 (APS-3)

Army Prepositioned Stocks-3 ships provide afloat prepositioning for the equipment, munitions and supplies to support U.S. Army combat units that would deploy to potential contingency sites.

The Army Prepositioned Stocks-3 concept of operations calls for at-sea prepositioning of combat equipment for a 2x2 heavy armored brigade and the 1x2 6th Brigade Afloat aboard eight LMSRs. In addition, other APS-3 ships carry cargo that supports and sustains the brigade, providing items such as water purification units, food and initial combat support

[8] The information in this section has been directly excerpted from U.S. Navy Military Sealift Command Fact Sheet dtd June 2011 accessed at http://www.msc.navy.mil/factsheet/apf.asp .

equipment. The mix of cargo carried on APS-3 ships makes it possible for an armored brigade to open a theater of operations for follow-on units.

The APS-3 comprises mostly large, medium-speed, roll-on/roll-off ships, called LMSRs, built to significantly expand the nation's sealift capacity into the 21st century. The LMSRs offset the shortage of militarily useful cargo ships available in the commercial sector - a growing concern as U.S. overseas bases close and American military forces increasingly depend on strategic mobility.

Navy, Defense Logistics Agency and Air Force (NDAF)
Two ships are loaded with U.S. Air Force ammunition, Navy ammunition and Defense Logistics Agency petroleum products. Two ships, designated aviation logistics support ships, serve as intermediate maintenance facilities for U.S. Marine Corps fixed and rotary wing aircraft. Two ships provide transport services to the Third Marine Expeditionary Force.

U.S. Maritime Administration (MARAD)[9]
MARAD has primary federal responsibility for ensuring the availability of efficient water transportation service to American shippers and consumers. MARAD seeks to ensure that the United States enjoys adequate shipbuilding and repair service, efficient CONUS ports, effective intermodal water and land transportation systems, and reserve shipping capacity in time of national emergency. MARAD administers federal laws and programs designed to support and maintain a US merchant marine capable of meeting the Nation's shipping needs for both domestic and foreign commerce and national security. MARAD advances the capabilities of the maritime industry to provide total logistic support (port, intermodal, ocean shipping, and training) to the military Services during war or national emergencies through the following:

- In accordance with DOD readiness criteria, maintaining an active Ready Reserve Force (RRF) fleet of strategic sealift, which is a component of the inactive National Defense Reserve Fleet (NDRF), to support emergency and national security sealift needs;

- Administer funding for the maintenance of the RRF and NDRF;

- Administering the Maritime Security Program and the priorities and allocations of the VISA;

- Acquiring US flag, US-owned, and other militarily useful merchant ships in accordance with appropriate authorities from the Merchant Marine Act of 1936 and the emergency Foreign Vessels Acquisition Act of 1954;

- Ensuring readiness preparation and coordination of commercial strategic ports for mobilization through the National Port Readiness Network;

[9] The information in this section has been directly excerpted from Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System,* Washington DC: 19 March 2003

- Administering the Vessel War Risk Insurance Program (Title 12, Merchant Marine Act of 1936); and

- Sponsoring merchant mariner training programs for both licensed and unlicensed seamen and ensuring reemployment rights for merchant marines who crew sealift vessels during a sealift crisis.

Ready Reserve Force (RRF)[10]

The RRF is the most signicant source of government –owned early deployment shipping in terms of both the number of ships and overall cargo –carrrying capability. It includes 50 ships kept in reserve by MARAD to meet surge shipping requirements for DOD. MARAD maintains these vessels in 4-, 5-, 10- or 20-day readiness status. Most are berthed on the three CONUS seacoasts, with one port in Tsuneshi, Japan as well. They consist of commercial or former military vessels of high military utility including RO/RO, sea barge, lighter aboard ship (LASH), container, tanker, crane, and breakbulk ships. Some of these vessels have had their military capabilities enhanced with the addition of systems such as the modular cargo delivery system and the offshore petroleum discharge system (OPDS).

The National Defense Reserve Fleet (NDRF)[11]

The National Defense Reserve Fleet provides an additional reserve of ships for national defense and national emergency purposes. The NDRF consists of dry cargo vessels, tankers, military auxiliaries, and other ship types. In addition to maintaining ships for USTRANSCOM logistics, the Missile Defense Agency sponsors 2 ships for missile tracking. Vessels are either owned by the Maritime Administration or held for other Government agencies on a reimbursable basis. As of 1 Apr 2009, the NRDF consisted of 180 vessels.

In response to hurricane Katrina and Rita landfalls in 2005, the Federal Emergency Management Agency (FEMA) used the Maritime Administration's vessels to support relief efforts. In addition to five RRF ships, four more NDRF ships were called. These ships supported the recovery mostly with messing and berthing for refinery workers, oil spill response teams, and longshoremen. To improve future ship-based responses, the establishment of a dedicated Disaster Relief Fleet is being promoted where rapid availability of prepositioned supplies and ship-based command centers can be provided.

The U.S. Flag Fleet[12]

Ships from the U.S. flag fleet are routinely chartered by MSC to meet government shipping demands. Shipping contracts are also negotiated for government cargo that does not have to move on dedicated shipping. When an expansion of government requirements occurs such

[10] The information in this section has been directly excerpted from Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System*, Washington DC: 19 March 2003. and Military Sealift Command fact sheets. http://www.msc.navy.mil/factsheet/apf.asp.

[11] The information in this section has been directly excerpted from the MARAD homepage located at http://www.marad.dot.gov/programs/NDRF.html.

[12] The information in this section has been directly excerpted from Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System*, Washington DC: 19 March 2003. and Military Sealift Command fact sheets. http://www.msc.navy.mil/factsheet/apf.asp

that voluntary U.S. and foreign flag charters no longer meet requirements, it is the U.S. flag fleet that is expected to respond to meet the requirements. There are three acquisition processes, not counting voluntary chartering, available for DOD acquisition of additional U.S. flag shipping. They are the Voluntary Intermodal Sealift Agreement (VISA), the Voluntary Tanker Agreement (VTA), and requisitioning.

- **Commerical Charter.** MSC fequently charters US and foreign flag ships during peacetime to provide additional sealift capacity. Charter is a routine commerical transaction that can be accomplished in a little as two days. However, all chartered ships may not be immediately available in time of crisis. Depending on ship location, the time required to arrive at the designated loading port may be as much as 30 days.

- **VISA**. VISA is the primary sealift mobilization program. It is an intermodal capacity-oriented program vice a ship-by-ship oriented program. All major US flag carriers are enrolled in VISA. This constitutes more than 90 percent of the US flag dry cargo fleet. The worldwide intermodal system provided by these carriers provides extensive and flexible capabilities to the Department of Defense. The types of ships enrolled in the VISA program includes containerships, RO/RO ships, LASH vessels, combination RO/RO and containerships, heavylift ships, breakbulk ships, and tugs and barges.

    - VISA is activated upon approval of the Secretary of Defense. Stage I will be activated by the Commander, USTRANSCOM, with the approval of the Secretary of Defense, when voluntary capacity commitments are insufficient to meet DOD requirements. Stage II will be activated when contingency requirements exceed Stage I. Stage III requires the Secretary of Transportation to allocate capacity based on DOD requirements.

    - A joint planning advisory group (JPAG) is central to the successful implementation of VISA and is comprised of representatives from USTRANSCOM, SDDC, MSC, DLA, MARAD, and intermodal industrial transportation representatives. The JPAG provides USTRANSCOM and its components with recommendations as how to best resolve critical transportation issues during periods of heavy demand or crisis.

- **VTA**. The VTA is a method of acquiring additional petroleum product carriers once the commercial market is no longer responsive. It is a cooperative effort by industry and government to meet military requirements for product tankers. It is activated by MARAD at the request of the Secretary of Defense.

- **Liner Agreements.** SDDC, a component of USTRANSCOM, arranges for common user ocean services by either establishing new contracts or utilizing

existing contracts with commercial carriers offering liner service on scheduled trade routes. The liner service established by these contracts may be for container or break bulk service responding to either unit or sustainment requirements.

- **Requisitioning**. SECTRANS is authorized to requisition any vessel which is majority owed by U.S. citizens, whether registered under the U.S. or Forgein flag, whenever the POTUS proclaims that the security of the nation makes it advisible, or during any national emergency declared by the proclamation of the POTUS (and/or concurrent resolution of the Congress) under the authority of Section 902 of the Merchant Marine Act of 1936 (46 US Code (USC) 1242).

Foreign Flag Ships[13]

When U.S. flag ships are unavailable, foreign flag ships can be acquired for DOD use through three different methods: voluntary charter, allied shipping agreements, and requisitioning of effective U.S. control shipping.

- **Voluntary Charter**. During peacetime, MSC will charter foreign flag ships whenever US flag ships are unavailable. This ability allows MSC to enter the foreign charter market and quickly expand its fleet whenever the need arises.

- **Allied Shipping Agreements**. Allied shipping agreements, arranging for vessels received through allied nations, can either be pre-negotiated and in existence or they can be drawn up on an emergency basis as the need arises.

- **Effective United States-Controlled Ships (EUSCS)**. EUSCS are ships owned by US citizens or companies that are registered in countries that have no prohibition on requisitioning of these vessels by the United States. These ships may be requisitioned by the United States under authority of Section 902, Merchant Marine Act of 1936 (title 46, USC, section 1242).

Military Surface Deployment & Distribution Command (SDDC)[14]

SDDC is an Army major supporting command headquartered at Scott AFB, IL. As an Army component of USTRANSCOM, SDDC provides common-user ocean terminal, commercial ocean liner service, and traffic management services to deploy, employ, sustain, and redeploy U.S. forces on a global basis. SDDC also provides global deployability engineering and analysis to support national security requirements and influence national engineering policies, serves as the single port manager to the geographic combatant

[13] The information in this section has been directly excerpted from Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System*, Washington DC: 19 March 2003.

[14] The information in this section has been directly excerpted from Joint Pub 4-01, Joint Doctrine for the Defense Transportation System, Washington DC: 19 March 2003, with the exception of SDDC's name. The SDDC's previous name was the Military Traffic Management Command (MTMC).

commander, and develops integrated traffic management systems. SDDC also executes VISA contracts for ocean liner service.

Additionally, SDDC is the seaport manager under the SPM concept for all common-user seaports of embarkation (SPOEs) and/or seaports of debarkation (SPODs). When designated (e.g., using stevedoring services contracts or host-nation support (HNS)), SDDC will also serve as the port operator. SDDC's Transportation Engineering Agency (SDDCTEA) provides deployment engineering, research, and analytical expertise to improve the deployability of the Armed Forces of the United States.

SDDCTEA executes surface transportation engineering policy matters assigned by the Office of the Secretary of Defense on behalf of USTRANSCOM and SDDC headquarters (HQ). SDDCTEA also provides a focal point for developing DTS-related modeling and simulation tools. SDDCTEA's primary functions are:

- Execute the highway, railroads, and ports for national defense programs;
- Conduct force deployability, transportation infrastructure, and operations and/or exercise analyses;
- Assess the capability of power projection platforms and seaports to meet deployment requirements;
- Ensure that the transportability design influence, criteria, and critical movement considerations are integrated in the DOD acquisition process;
- Formulate movement procedures for existing and future material;
- Develop deployability analysis techniques and transportation models and simulations; and
- Manage the acquisition and distribution of authoritative transportation data in support of deployment requirements.

Deployment Distribution Operations Center[15]

The USTRANSCOM Deployment Distribution Operations Center (DDOC) serves as the focal point to orchestrate and optimize DTS operations in support of the Combatant Commanders and other customers. This group, comprised of command center elements at USTRANSCOM and each TCC, is organized by Customer Service Teams and linked by a real-time communications system (formerly referred to as "Command, Control, Communications and Computer Systems (C4S)"). This communications system provides the DDOC with visibility of all DTS movement requirements and information on the location, status, and capabilities of forces worldwide. The DDOC provides C2 of global mobility forces and other assets, and is organized under the Operations and Plans Directorate (TCJ3).

[15] The information in this section is extracted directly from USTRANSCOM Handbook 24-2, *Understanding the Defense Transportation System*.

The DDOC is the single focal point for customers at the Commander and major shipper level, including the Office of the Secretary of Defense (OSD), Joint Staff, AAFES, DLA, and the Services.

In January 2004, USTRANSCOM established the first Joint DDOC (JDDOC) in the U.S. Central Command area of responsibility (AOR). Since then, all Geographic Combatant Commands have established JDDOCs to synchronize and optimize strategic and operational multimodal resources to improve distribution, force deployment, and sustainment within their AOR.

Port Operations[16]

Critical components of the DTS are military and commercial ports supporting the air and maritime movement of unit and non-unit personnel, equipment, and cargo. These ports could be owned and operated by SDDC, AMC, a Service, geographic combatant commanders, or commercial or HN authorities. They may be either sophisticated fixed locations or heavily dependent on deployable mission support forces or joint logistics over-the-shore (JLOTS) assets to accomplish the mission. The significant surface and air cargo handling capabilities that exist in the Services should be used jointly rather than in isolation to maximize the throughput capability of these essential transportation modes.

The extensive use of containers and 463L pallets makes container handling equipment (CHE) and MHE essential elements of the DTS. Ensuring that these assets are available early allows for the efficient loading and unloading of ships and aircraft and increases the rate at which a port can be cleared. Without these assets, the DTS may come to a halt.

- **Single Port Manager**: The SPM performs those functions necessary to support the strategic flow of deploying and redeploying forces, unit equipment, and sustainment supply in the SPOEs and APOEs and hand-off to the geographic combatant commander in the SPODs and APODs. The Department of Defense uses the SPM approach for all worldwide common-use aerial and seaport operations. As outlined in the Unified Command Plan, USTRANSCOM has the mission to provide worldwide common-user aerial and seaport terminal management and may provide terminal services by contract. Thus USTRANSCOM, through AMC and SDDC, will manage common-use aerial ports and seaports for the geographic combatant commander. In areas not served by a permanent USTRANSCOM presence, USTRANSCOM will deploy an AMC air mobility squadron and/or aerial port mobile flight and tanker air mobility control element and an SDDC port management cell to manage the ports in concert with a designated port operator.

- **SDDC:** As USTRANSCOM's surface TCC, SDDC performs SPM functions necessary to support the strategic flow of the deploying forces' equipment and sustainment supply in the SPOE and hand-off to the geographic combatant

[16] The information in this section has been directly excerpted from Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System*, Washington DC: 19 March 2003.

commander in the SPOD. SDDC has port management responsibility through all phases of the theater port operations continuum, from a bare beach (e.g., JLOTS) deployment to a commercial contract fixed-port support deployment. When necessary, in areas where SDDC does not maintain a manned presence, a deployment support team will be established to direct water terminal operations, including supervising movement operations, contracts, cargo documentation, CONUS security operations, arrange for support, and the overall flow of information. As the single seaport manger, SDDC is also responsible for providing strategic deployment status information to the combatant commander and to manage the workload of the SPOD port operator based on the combatant commander's priorities and guidance. SDDC transportation groups and other SDDC units operate ports that use contracted labor. If Army stevedores are used, transportation groups assigned to the combatant commander operate the port. The specific roles and functions of both the port manager and port operator are summarized in JP 4-01.5, *Joint Tactics, Techniques, and Procedures for Transportation Terminal Operations.*

- **AMC:** As USTRANSCOM's air TCC, AMC performs SPM functions necessary to support the strategic flow of the deploying forces' equipment and sustainment supply in the APOE and hand-off to the geographic combatant commander in the APOD. AMC has port management responsibility through all phases of the theater aerial port operations continuum, from a bare base deployment to a commercial contract fixed-port support deployment. AMC is the single aerial port manager and, where designated, operator of common-user APOEs and/or APODs.[17]

Joint Task Force-Port Opening[18]

Joint Task Force-Port Opening (JTF-PO) provides a rapid and worldwide deployable entity designed to support geographic combatant commanders throughout the range of military operations as they conduct their mission of supporting our nation's interests abroad. JTF-PO is designed to reverse the historic shortcomings associated with the rapid opening of ports worldwide, including ad hoc C2 and lack of continuous visibility of cargo moving from the ports of debarkation through the theater of operations. Consistent and deliberate joint training, a robust C2 suite, to include ITV; and dedicated surface movement control units enable JTF-PO to effectively and efficiently address previous deficiencies of global transportation movement. The JTF-PO APOD combines fielded Air Force and Army units to open an airport and prepare it for logistics operations in as little as 72 hours. Similar to the APOD, USTRANSCOM has developed, and is in the process of fielding, the SPOD capability which will provide the rapid opening of a seaport in support of logistics operations. JTF-PO's joint training, rapid deployment, and state of the art communications systems will provide full accountability of cargo, greater dissemination of information to decision makers, overall improved systems processes and, most importantly, increased support to the warfighter.

[17]*For additional information see JP 4-01.5,* Joint Tactics, Techniques, and Procedures for Transportation Terminal Operations.

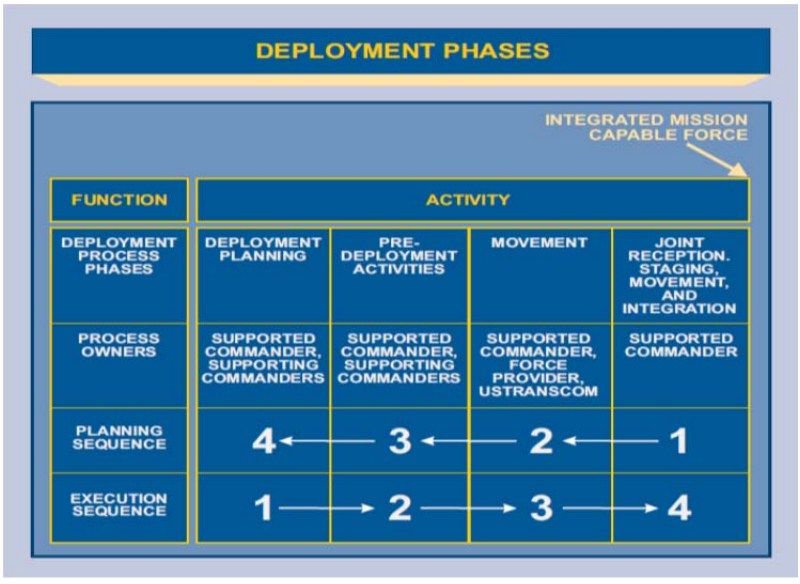
[18] The information in this section is extracted directly from USTRANSCOM Handbook 24-2, *Understanding the Defense Transportation System*.

II. Concept of Operations for Strategic Deployment[19]

The deployment process is an essential enabler that allows the U.S. Armed Forces to project force to accomplish the will of our national leadership. Given its key role, great attention must be given to thorough planning as it is difficult, if not impossible, to recover from mistakes made in the deployment phase. Both joint, and service, planners are faced with a plethora of issues that must be successfully addressed in order to ensure the commander's intent is met. These issues tend to focus on the advantages/disadvantages of each leg of the strategic mobility triad such as response time, availability of transportation assets, logistics throughput, and asset vulnerability.

More specifically, joint and service planners need to provide for the following considerations: transportation facilities, transportation facility support forces and equipment, operation of APODs/SPODs and their associated command relationships (includes POL, MHE/Cargo handling equipment), on and off-load operations, base defense/force protection, joint airspace and sea control (air and sea lines of communications), intelligence, weather, the threat, countermeasures to the threat, air and sea refueling, and the communications requirements of the deploying force. The Joint Operation Planning and Execution System (JOPES) and the joint operation planning process (JOPP) provide the processes, formats, and systems which link planning for joint force projection to the execution of joint operations.

The joint deployment process is divided into four phases: planning, pre-deployment activities, movement, and Joint Reception, Staging, Onward Movement, and Integration (JRSOI). They are iterative and often occur simultaneously throughout an operation, and are sometimes depicted in a "backwards" planning sequence (as illustrated below):



[19] The information in this section has been directly excerpted from Joint Pub 3-35, *Joint Deployment and Redeployment Operations*, Washington DC: 7 May 2007.

- **Deployment planning:** Occurs during both JOPES contingency planning (if sufficient planning time is available prior to mission execution) and crisis action planning (CAP). It is conducted at all command levels and by both the supported and supporting commanders. Deployment planning activities include all action required to plan for a deployment and employment of forces. Deployment planning activities must be coordinated among the supported combatant command responsible for accomplishment of the assigned mission, the Services, and the supporting combatant commands providing forces for the joint force mission. Normally, supported CCDRs, their subordinate commanders, and their Service components are responsible for providing mission statements, theater support parameters, inter-theater lift requirements, applicable host nation (HN) environmental standards, and pre-positioned equipment planning guidance during pre-deployment activities. The Services are responsible to organize, train, and equip interoperable forces for assignment to combatant commands and to prepare plans for their mobilization when required (see Department of Defense Directive (DODD) 5100.1, Functions of the Department of Defense and Its Major Components). Supporting CCDRs are responsible for providing trained and mission-ready forces to the supported combatant command. Service deployment planning activities should be coordinated with supporting combatant command planning activities to ensure that standards specified by the supported CCDR are achieved, supporting personnel and forces arrive in the supported theater fully prepared to perform their mission, and deployment delays caused by duplication of pre-deployment efforts are eliminated.

- **Pre-deployment activities:** All actions taken by the joint planning and execution community (JPEC) before actual movement to prepare to execute a deployment operation. It includes continued refinement of OPLANs, from the strategic to the tactical level at the supported and supporting commands, sourcing forces, completion of operation specific training, and mission rehearsals. As early as possible in pre-deployment, movement requirements are identified and lift support requirements are reported and scheduled. Personnel and equipment movement preparation is competed and verified. Accompanying sustainment is identified and prepared for movement.

- **Movement:** Includes the movement of self-deploying units and those that require lift support. It includes movements within CONUS, deployments within an AOR, and end-to-end origin to destination strategic moves.

- **JRSOI:** The critical link between deployment and employment of the joint forces in the OA. It integrates the deploying forces into the joint operation and is the responsibility of the supported CCDR. Deployment is not complete until the deploying unit is a functioning part of the joint force. The time between the initial arrival of the deploying unit and its operational employment is potentially the period of its greatest vulnerability. During this transition period, the deploying unit may not fully sustain itself, defend itself, or contribute to mission accomplishment because some of its elements have not attained required mission capability. JRSOI planning is

focused on the rapid integration of deploying forces and capabilities to quickly make them functioning and contributing elements of the joint force.

Planning for and execution of the four phases of deployment is based primarily on mission requirements and the time available to accomplish the mission. During deployment operations, supported combatant commanders are responsible for building and validating requirements,
determining pre-deployment standards, and balancing, regulating, and effectively managing the transportation flow. Supporting combatant commands and agencies source requirements not available to the supported combatant commander and are responsible for: verifying supporting unit movement data; regulating the support deployment flow; and coordinating effectively during deployment operations.

Similar to deployment, redeployment operations encompass four phases. These are: redeployment planning, pre-redeployment activities, movement, and JRSOI. These phases describe the major activities inherent in moving deployed forces and materiel from their current deployed location through integration into another theater or to the home and/or demobilization station. Redeployment operations are dependent on the supported combatant commander's defined end state, concept for redeployment, or requirement to support another JFC's concept of operations.

III. Movement in Support of Homeland Defense and Civil Support

Deployments within the homeland follow the same processes as outlined in the preceding paragraphs however the timelines can be extremely compressed. The national importance of these missions is reflected in the elevated movement priorities that can be invoked by the President or Secretary of Defense. USTRANSCOM can quickly assemble aircraft and flight crews for operations where expedited passenger movement is required. Surface transportation (commercial and organic) can be a viable option in those situations where the distance between the home station and the operational area is relatively short.

OPERATIONAL COMMAND AND CONTROL[20]

I. Introduction

Command and Control (C2) enhances the commander's ability to make sound and timely decisions and successfully execute them. A critical consideration in operational planning, the organizations and relationships established are based on the operational design, complexity of the operation, and the degree of control required. When properly established, the C2 organization allows for decentralized execution of centralized, overarching plans. C2 is the means by which a Joint Force Commander (JFC) synchronizes and/or integrates joint force activities. The Joint definition of C2 is:

> The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

Joint Pub 1 identifies nine C2 tenets which should be factored into planning in order to maximize the effective C2 of joint operations (see JP 1, p. IV-15).

- Clearly defined authorities, roles and relationships
- Information management
- Communications (Commander's intent & mission-type orders)
- Timely decision making
- Coordination mechanisms
- Battle rhythm discipline
- Responsible, dependable and interoperable support systems
- Situational awareness
- Mutual trust

Additionally, the following four "principles of C2" should guide the C2 organization (see JP 1, p. IV-19).

- Simplicity
- Span of control
- Unit integrity
- Interoperability

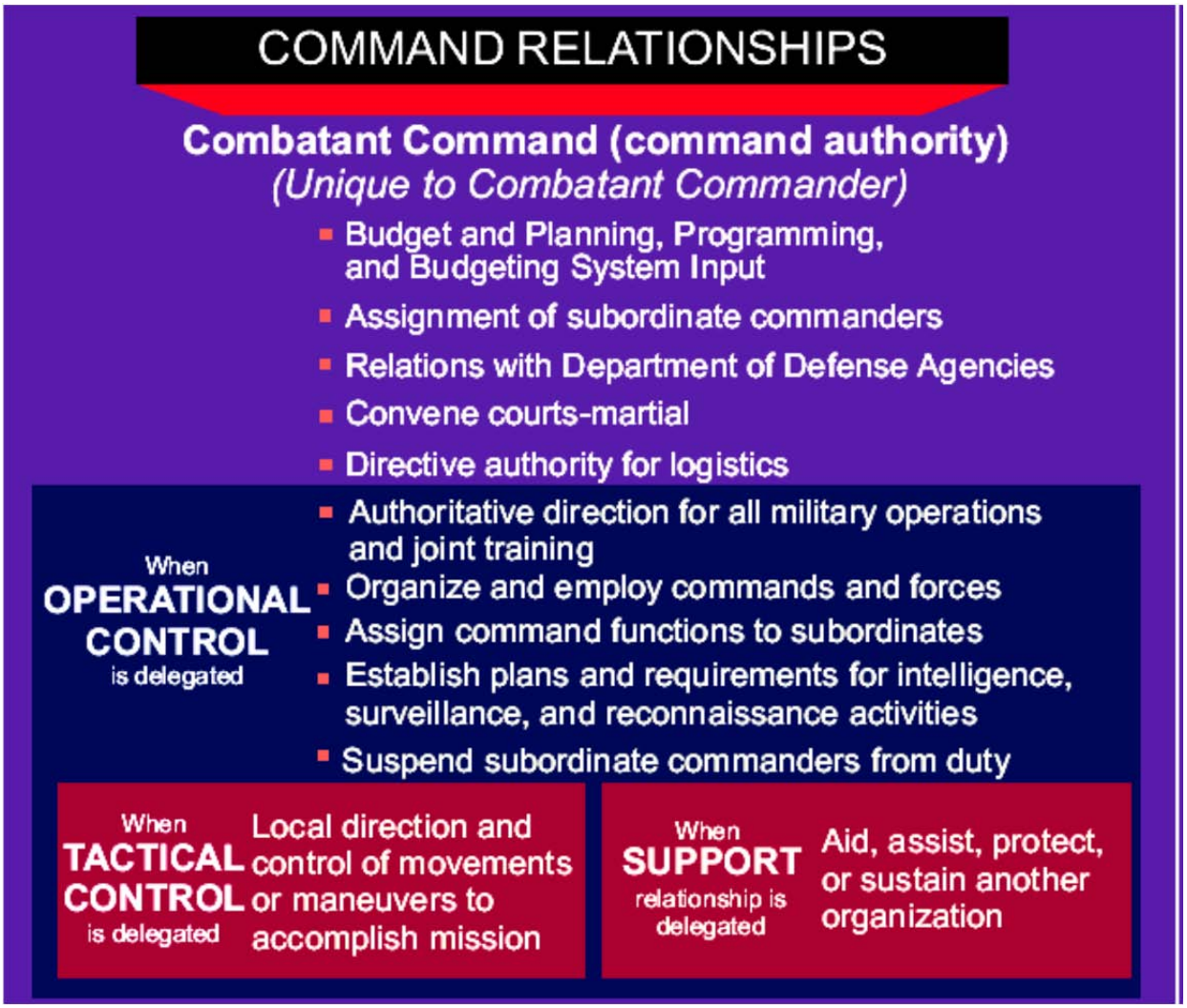
Whatever the scope or intensity of any particular action, the joint force commander must consider how best to organize a force in order to enable unity of command/effort, centralized direction and decentralized execution. Critical to achieving these goals is the determination

[20] Extracted from JP 1, JP 3-0, JP 3-16, JP 3-30, JP 3-33 and JAWS Operational Art and Campaigning Primer AY09-10

of command relationships and a command organization which are tailored to the objectives and the operational design. The establishment of command relationships includes determining the types of subordinate commands and the degree of authority to be delegated to each. Clear definition of command relationships further clarifies the intent of the combatant commander and contributes to decentralized execution and unity of effort.

II. Command Relationships and Levels of Authority

The specific command relationship (combatant command(command authority) (COCOM), operational control (OPCON), tactical control (TACON), and support) will define the level of authority a commander (CDR) has over assigned or attached forces. A CDR can also have authority when coordinating authority, administrative control (ADCON), and direct liaison authorized (DIRLAUTH) relationships have been specified. An overview of command relationships is shown in the figure below:



The CCDR exercises **combatant command (COCOM)** over forces assigned or reassigned by the President or Secretary of Defense. Forces are assigned or reassigned when the transfer

of forces will be permanent or for an unknown period of time, or when the broadest level of C2 is required or desired.

Operational control (OPCON) of assigned forces is inherent in COCOM and may be delegated within the combatant command by the CCDR. Subordinate joint force commanders (JFCs) will exercise OPCON over assigned or reassigned forces. The CCDR normally exercises operational control (OPCON) over forces attached by the SecDef. Forces are attached when the transfer of forces will be temporary. Establishing authorities for subordinate unified commands and joint task forces (JTFs) normally will direct the delegation of OPCON over forces attached to those subordinate commands.

In accordance with the assignment tables in the Global Force Management Implementation Guidance (GFMIG) and the Unified Command Plan (UCP), except as otherwise directed by the President or the SecDef, all forces operating within the geographic area assigned to a specific CCDR shall be assigned or attached to, and under the command of, that CCDR. Transient forces do not come under the chain of command of the area CDR solely by their movement across operational area boundaries, except when the CCDR is exercising tactical control (TACON) for the purpose of force protection. Unless otherwise specified by the SecDef and with the exception of the United States Northern Command (NORTHCOM) area of responsibility (AOR), a CCDR has TACON for exercise purposes whenever forces not assigned to that CCDR undertake exercises in that CCDR's AOR.



Summary of U.S. Command Relationships

COMBATANT COMMAND (COMMAND AUTHORITY)
COCOM is the authority of a combatant commander to perform those functions of command over assigned forces to include:

- Organizing and employing commands and forces.
- Assigning tasks.
- Designating objectives.
- Giving authoritative direction over all aspects of military operations and joint training
- Logistics.

COCOM should be exercised through the commanders of subordinate organizations. Normally, this authority is exercised through subordinate JFCs and Service and/or functional component commanders; however, it cannot be delegated to subordinate commanders. COCOM provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions.

OPERATIONAL CONTROL (OPCON)
OPCON is the command authority exercised by commanders at any echelon at or below the level of COCOM and can be delegated or transferred.

OPCON is inherent in COCOM and is the authority to perform those functions of command over subordinate forces involving:

- Organizing and employing commands and forces.
- Assigning tasks.
- Designating objectives.
- Giving authoritative direction necessary to accomplish the mission.

OPCON includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. It should be exercised through the commanders of subordinate organizations; normally, this authority is exercised through subordinate JFCs and Service and/or functional component commanders. OPCON normally provides full authority to organize commands and forces and employ those forces necessary to accomplish assigned missions. It does not include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. The combatant commander delegates these elements. OPCON does include the authority to delineate functional responsibilities and geographic JOA of subordinate JFCs.

The superior commander gives commanders of subordinate commands and JTFs OPCON of assigned or attached forces.

TACTICAL CONTROL (TACON)
TACON is the command authority over assigned or attached forces or commands, or a military capability or forces made available for tasking. It is limited to the detailed and usually local direction and control of movements or maneuvers necessary to accomplish

assigned missions or tasks.

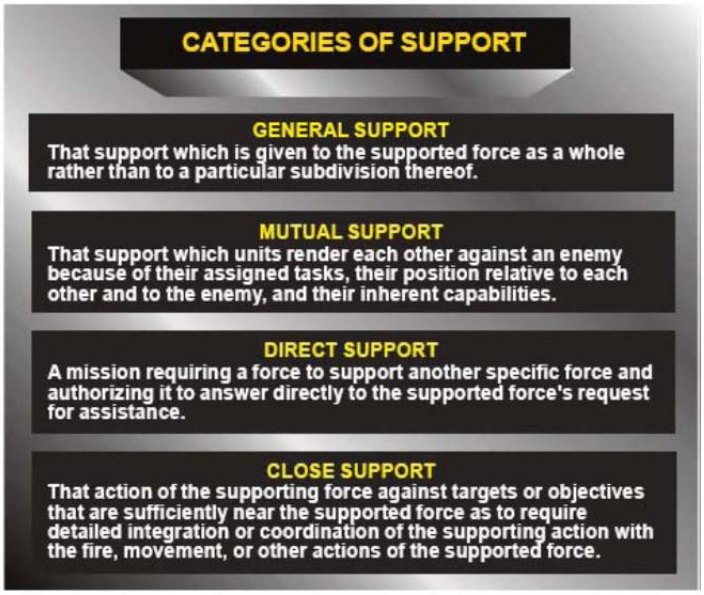
TACON may be delegated to and exercised by commanders at any echelon at or below the level of COCOM. TACON is inherent in OPCON.

Support
Support is a command authority. A support relationship is established by a superior commander between subordinate commanders when one organization should aid, protect, complement, or sustain another force.

Support may be exercised by commanders at any echelon at or below the level of COCOM. This includes the President and/or SecDef designating a support relationship between combatant commanders as well as between subordinate commands in a single CCDR. The designation of supporting relationships is important as it conveys priorities to commanders and staffs that are planning or executing joint operations. The support command relationship is a flexible arrangement. The establishing authority is responsible for ensuring that both the supported and supporting commanders understand the degree of authority granted the supported commander.

The supported commander should ensure that the supporting commander understands the assistance required. The supporting commander provides the assistance needed, subject to the supporting commander's existing capabilities and other assigned tasks. When the supporting commander cannot fulfill the needs of the supported commander, the establishing authority is notified by either the supported or supporting commander. The establishing authority is responsible for determining a solution.

An establishing directive is normally issued to specify the purpose of the support relationship, the effect desired, and the action to be taken.



Other authorities outside the command relationships delineated above are described below.

Administrative control (ADCON)
ADCON is the direction or exercise of authority over subordinate or other organizations with respect to administration and support, including organization of Service forces, control of resources and equipment, personnel management, logistics, individual and unit training, readiness, mobilization, demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organizations. ADCON is synonymous with administration and support responsibilities identified in Title 10, United States Code (USC). This is the authority necessary to fulfill Military Department statutory responsibilities for administration and support. ADCON may be delegated to and exercised by CDRs of Service forces assigned to a CCDR at any echelon at or below the level of Service component command. ADCON is subject to the command authority of CCDRs. ADCON may be delegated to and exercised by CDRs of Service commands assigned within Service authorities. Service CDRs exercising ADCON will not usurp the authorities assigned by a CCDR having COCOM over CDRs of assigned Service forces.

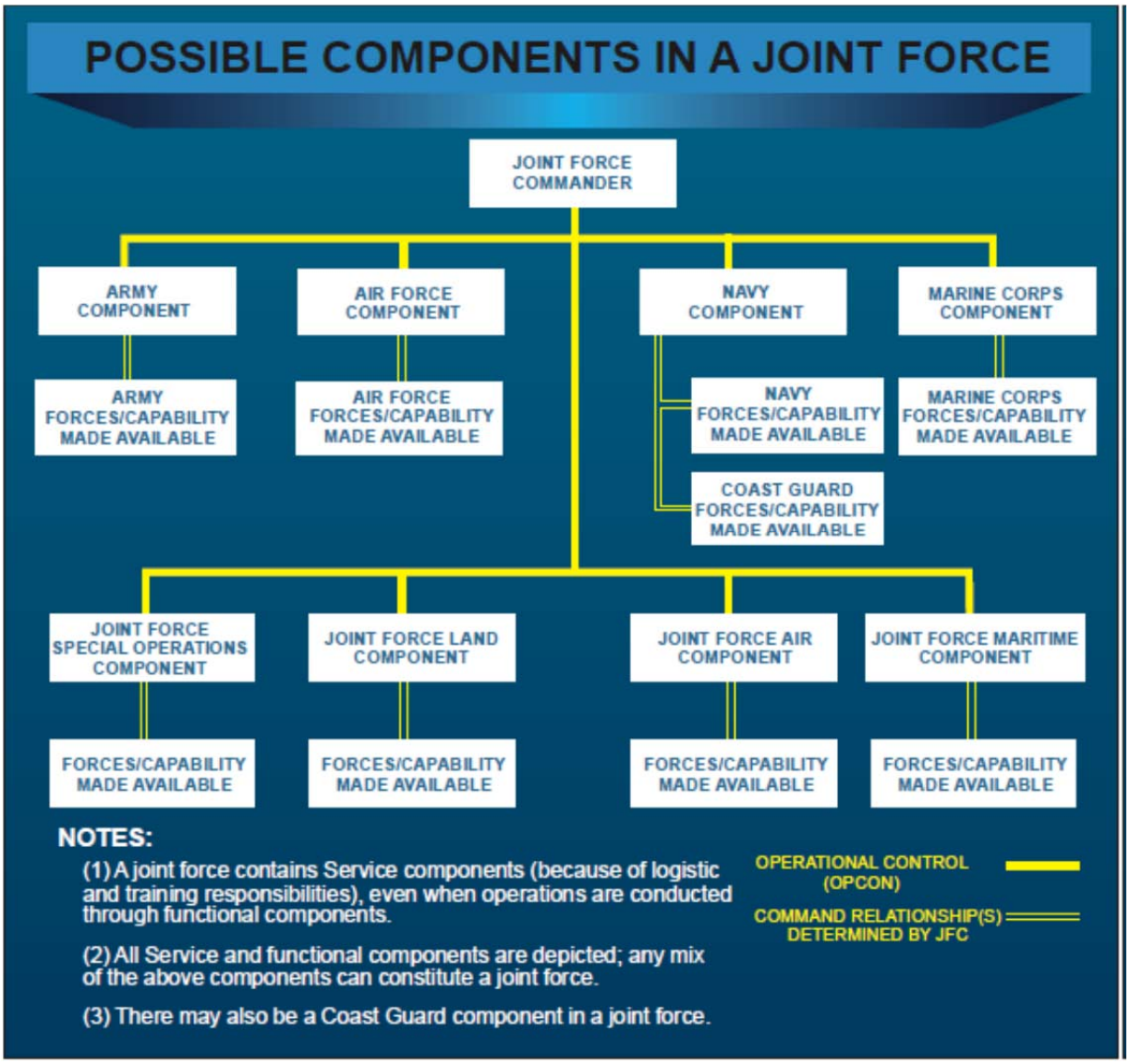
Coordinating authority
CDRs or individuals may exercise coordinating authority at any echelon at or below the level of combatant command. Coordinating authority is the authority delegated to a CDR or individual for coordinating specific functions and activities involving forces of two or more Military Departments, two or more joint force components, or two or more forces of the same Service (e.g., joint security coordinator exercises coordinating authority for joint security area operations among the component CDRs). Coordinating authority may be granted and modified through a memorandum of agreement to provide unity of command and unity of effort for operations involving Reserve Component (RC) and Active Component (AC) forces engaged in interagency activities. The CDR or individual has the authority to require consultation between the agencies involved but does not have the authority to compel agreement. The common task to be coordinated will be specified in the establishing directive without disturbing the normal organizational relationships in other matters. Coordinating authority is a consultation relationship between CDRs, not an authority by which command may be exercised. It is more applicable to planning and similar activities than to operations. Coordinating authority is not in any way tied to force assignment. Assignment of coordinating authority is based on the missions and capabilities of the commands or organizations involved.

Direct liaison authorized (DIRLAUTH)
DIRLAUTH is that authority granted by a CDR (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. DIRLAUTH is more applicable to planning than operations and always carries with it the requirement of keeping the CDR granting DIRLAUTH informed. DIRLAUTH is a coordination relationship, not an authority through which command may be exercised.

III. Joint Command Organization

A JFC has the authority to organize assigned or attached forces with specification of OPCON to best accomplish the assigned mission. The organization should be sufficiently flexible to meet the planned phases of the contemplated operations and any development that may

necessitate a change in plan. The JFC will establish subordinate commands, assign responsibilities, establish or delegate appropriate command relationships, and establish coordinating instructions of the component commanders. Sound organization should provide for unity of command, centralized planning and direction, and decentralized execution. The figure below illustrates possible components in a Joint Force.



The composition of the JFC's staff will reflect the composition of the joint force to ensure that those responsible for employing joint forces have a thorough knowledge of the capabilities and limitations of assigned or attached forces.

All joint forces include **service components**, through which administrative and logistic support is provided. Service forces may be assigned or attached to subordinate joint forces without the formal creation of a respective service component command of that joint force. The JFC also may conduct operations through the service component commanders or, at

lower echelons, service force commanders. This relationship is appropriate when stability, continuity, economy, ease of long-range planning, and the scope of operations dictate organizational integrity of service forces for conducting operations. Typical **service component commander responsibilities** are as follows:

- Making recommendations to the CJTF on the proper employment of the forces of the service component.
- Accomplishing such operational missions as may be assigned.
- Assuming responsibility for areas of operations, if assigned (land and maritime forces).
- Coordinating sustainment support through service channels.
- Informing the CJTF of planning for changes in logistic support that would significantly affect operational capability.
- Retaining responsibility for certain service-specific functions such as internal administration, training, logistics, and service component intelligence operations.
- Conducting joint training.
- Selecting and nominating specific units of the parent service component for assignment to other subordinate forces.
- Providing, as directed, supporting joint operation and exercise plans.
- Establishing combat identification standing operating procedures and other directives based on CJTF guidance.
- Planning and coordinating operations and employing service forces in support of CJTF's concept of operations.
- Issuing planning guidance.
- Analyzing various courses of action.
- Coordinating with other JTF component and subordinate task forces to ensure that the most effective support is provided to the CJTF.
- Evaluating the results of operations.
- Focusing on operational-level service core capabilities.
- Functioning as a supported and supporting commander, as directed by the CJTF.
- Integrating base operating support and providing common-item support to elements of the joint force when directed by the supported combatant commander.
- Coordinating safe and effective airfield operations when assigned as the senior airfield authority by the supported combatant commander.
- Assessing and mitigating risk.

The JFC may establish **functional component commands** to conduct operations. Functional component commands are appropriate when forces from two or more Military Departments must operate within the same mission area or geographic domain or there is a need to accomplish a distinct aspect of the assigned mission. Joint force land, air, maritime, and special operations component commanders are examples of functional components. (NOTE: Functional component commanders are component commanders of a joint force and do not constitute a “joint force command” with the authorities and responsibilities of a JFC, even when employing forces from two or more Military Departments.) When a functional component command employs forces from more than one service, the functional component commander’s staff should include service representatives from each of the employed service

forces to aid in understanding those capabilities and maximizing the effective employment of forces. Joint staff billets for needed expertise and individuals to fill those billets should be identified. Those individuals should be used when the functional component command is formed for exercises, contingency planning, or actual operations.

Normal functional component commands include the Joint Force Air Component Commander (JFACC), Joint Force Maritime Component Commander (JFMCC), Joint Force Land Component Commander (JFLCC), Joint Force Special Operations Component Commander (JFSOCC), Joint Civil-Military Operations Task Force (JCMOTF) and Joint Psychological Operations Task Force (JPOTF). Typical responsibilities for each of these functional component commanders are as follows:

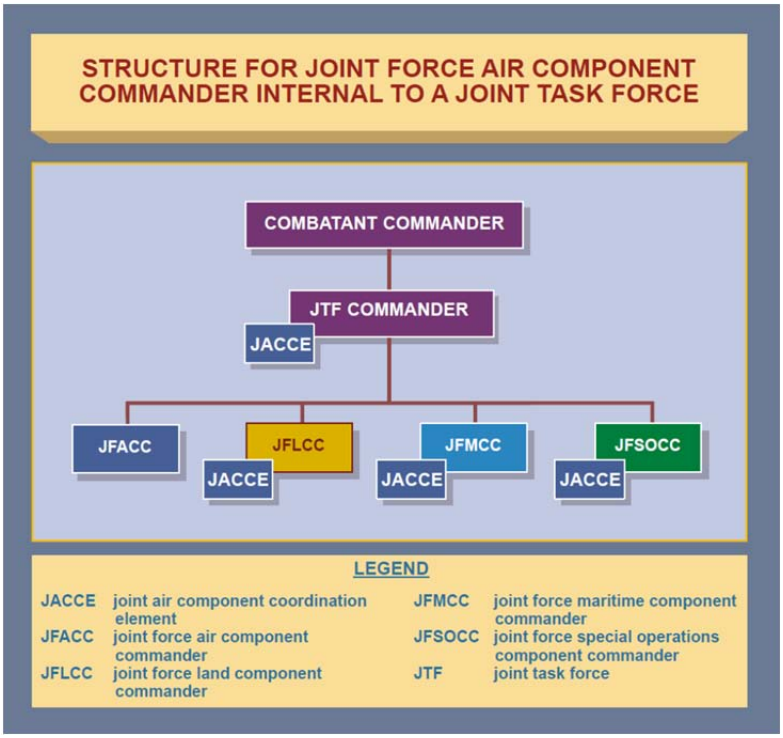
JFACC

- Developing a joint air operations plan to best support the joint force commander's (JFC's) objectives.
- Recommending to the JFC apportionment of the joint air effort, after consulting with other component commanders.
- Allocating and tasking of air capabilities/forces made available based upon the JFC's air apportionment.
- Providing oversight and guidance during execution of joint air operations.
- Coordinating joint air operations with operations of other component commanders and forces assigned to or supporting the JFC.
- Evaluating the results of joint air operations.
- Performing the duties of airspace control authority (ACA) and/or performing the duties of area air defense commander (AADC), unless a separate ACA and/or AADC is designated
- Accomplishing various mission areas to include, but not limited to:
  - Counterair;
  - Strategic air attack;
  - Airborne intelligence, surveillance, and reconnaissance;
  - Air interdiction;
  - Intratheater air mobility;
  - Close air support.
- Functioning as a supporting/supported commander, as designated by the JFC.
- Establishing a personnel recovery coordination cell to account for and report the status of isolated personnel and to coordinate and control air component personnel recovery events; and, if directed by the CJTF, establish a separate joint personnel recovery center for the same purpose in support of a joint recovery event.

From the Air Force chapter earlier, we learned that each GCC is supported by a standing Component Numbered Air Force that provides the GCC planning and execution of aerospace force. Each of the assigned Numbered Air Force components consists of a Commander, Air Force Forces (COMAFFOR) and AFFOR/A-staff, and an Air Operations Center (AOC). If the Air Force possesses the preponderance of air forces in a JFC's area of operations, the COMAFFOR will normally serve as the Joint Forces Air Component Commander (JFACC).

However, if the Air Force is not the main effort, the Numbered Air Force component can, with GCC approval:

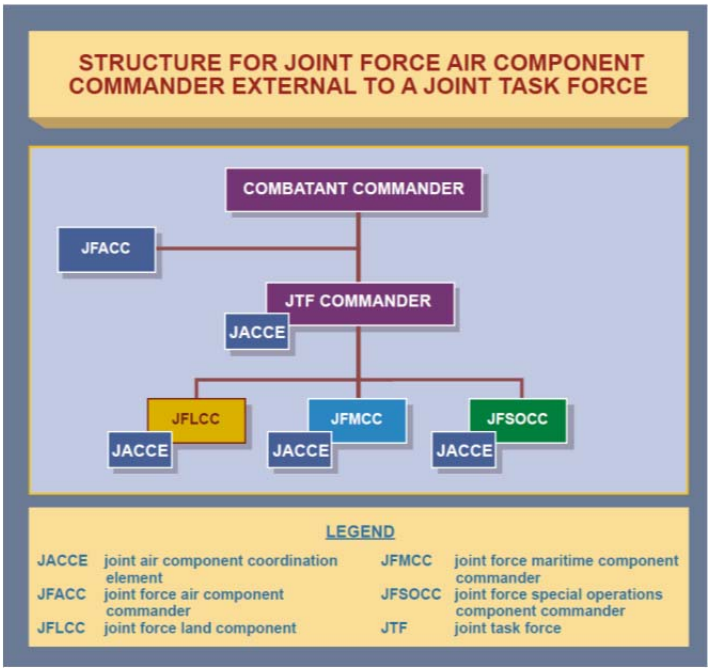
(a) **Designate a JFACC for each JFC subordinate to the GCC.** A GCC normally establishes a subordinate JTF to conduct operations, and forces are normally attached as needed, with specification of OPCON to the subordinate JFC. This option will place dedicated air assets and independent C2 capability under the OPCON of the JFC for whom they are performing the mission. It provides unity of command over the forces employed within the assigned JOA and greater direct control and predictability as to which air assets are available.



(b) **Theater JFACC.** A GCC may establish multiple JTFs within the area of responsibility (AOR), but decide to retain C2 of joint air forces at the GCC level. Joint air forces will be controlled to support the multiple JTF commanders according to the JTF commanders' objectives and the GCC's AOR- wide priorities. In this situation, joint air forces are controlled at the theater level, under the direction of the "theater JFACC," subordinate to the GCC. The theater level JFACC provides flexibility in managing limited air assets to meet the requirements of the GCC and multiple JTFs.

1. The theater JFACC will be the supporting commander to the GCC's subordinate JTF commanders' joint air operations within their respective JOAs. Per JP 1, *Doctrine for the Armed Forces of the United States,* an establishing directive should be promulgated to clearly delineate support command relationships. Unless limited by the establishing directive, the supported JTF commanders will have the authority to exercise general direction of the supporting effort (General direction includes the designation

and prioritization of targets or objectives, timing and duration of the supporting action, and other instructions necessary for coordination and efficiency).



2. The theater JFACC, as the supporting commander, determines the forces, tactics, methods, procedures, and communications to be employed in providing this support. The JFACC will advise and coordinate with the supported JTF commanders on matters concerning the employment and limitations (e.g., logistics) of such support, assist in planning for the integration of such support into the supported JTF commanders' efforts as a whole, and ensure that support requirements are appropriately communicated within the JFACC's organization. When the JFACC cannot fulfill the needs of the Command and Control of Joint Air Operations supported JTF commander, the GCC will be notified by either the supported JTF commander or JFACC. The GCC is responsible for determining a solution. For their operations, these JTF commanders – as JFCs - will exercise approval authority for products normally generated for "JFC approval" (including products generated by the theater JFACC for their JOA).

3. The theater JFACC may deploy one or more Joint Air Component Coordination Elements (JACCEs) to the JTF headquarters and other component headquarters as needed to ensure they receive the appropriate level of joint air support. The JACCE will provide on-hand air expertise to the JTF commanders and the direct link back to the theater JFACC and the JAOC. A JACCE is a small team of airpower experts that can be used to facilitate coordination between a JFACC and other component commanders or the JFC. The JACCE is intended as a facilitator, and should not be used in place of

existing, more formal methods of coordination. The JACCE will not bear any responsibilities of the JAOC nor will it replace any JAOC processes or sub-processes. The JFACC may simultaneously deploy multiple JACCEs as liaisons to the JTF, subordinate joint forces, or Services, while operating from home station or a deployed location.

4. Between these two options presented there can be other potential organizational variations. See JP 3-30, *Command and Control of Joint Air Operations* (12 January 2010) for more detail.

JFLCC

- Advising the CJTF on the proper employment of land forces/capabilities made available for tasking.
- Developing the land operation plan (OPLAN) or operation order (OPORD) in support of the CJTF's concept of operations and optimizing the operations of task-organized land forces. The JFLCC issues planning guidance to all subordinate and supporting elements and analyzes proposed courses of action. The intent is to concentrate combat power at critical times and places to accomplish operational or strategic goals.
- Directing the execution of the land OPLAN/OPORD as specified by the CJTF, which includes making timely adjustments to the tasking of forces/capabilities made available. The JFLCC coordinates changes with affected component commanders as appropriate.
- Coordinating the planning and execution of land operations with the other components, and other supporting agencies.
- Evaluating the results of land operations to include the effectiveness of interdiction operations and forwarding these results to the CJTF to support the combat assessment effort.
- Synchronizing and integrating movement and maneuver (including lines of communications, movement control, and deconfliction), fires, and interdiction in support of land operations.
- Designating the target priorities, effects, and timing for joint land operations.
- Providing mutual support to other components by conducting operations within the land area of operations, such as suppression of enemy air defenses and suppression of threats to maritime operations.
- Coordinating with other functional and Service components in support of accomplishing the CJTF objectives.
- Providing an assistant deputy area air defense commander for land-based joint theater air and missile defense operations as determined by the CJTF.
- Supporting the CJTF's information operations (IO) by developing the IO requirements that support land-control operations and synchronizing the land force IO capabilities when directed.
- Establishing a standing operating procedure and other directives based on CJTF guidance.
- Providing inputs into the CJTF-approved joint area air defense plan and the airspace control plan.

- Integrating the JFLCC's communications system resources into the supported combatant commander's communications system architecture and synchronizing the JFLCC's communications system capabilities in the joint planning and execution process.
- Integrating special operations into overall land operations.
- Providing a joint security coordinator, when directed.
- Establishing a personnel recovery coordination cell to account for and report the status of isolated personnel and to coordinate and control land component personnel recovery events; and, if directed by the CJTF, establish a separate joint personnel recovery center for the same purpose in support of a joint recovery event.

JFMCC

- Develop a joint maritime operations plan to best support joint force objectives.
- Provide centralized direction for the allocation and tasking of forces/capabilities made available.
- Request forces of other component commanders when necessary for the accomplishment of the maritime mission.
- Make maritime apportionment recommendations to the CJTF.
- Provide maritime forces to other component commanders in accordance with CJTF apportionment decisions.
- Control the operational level synchronization and execution of joint maritime operations, as specified by the CJTF, to include adjusting targets and tasks for available joint forces/capabilities. The JFC and affected component commanders will be notified, as appropriate, if the joint force maritime component commander JFMCC changes the planned joint maritime operations during execution.
- Act as supported commander within the assigned area of operations (AO).
- Assign and coordinate target priorities within the assigned AO by synchronizing and integrating maneuver, mobility and movement, fires, and interdiction. The JFMCC nominates targets located within the maritime AO to the joint targeting process that may potentially require action by another component commander’s assigned forces.
- Evaluate results of maritime operations and forward combat assessments to the CJTF in support of the overall effort.
- Support information operations with assigned assets, when directed.
- Function as a supported and supporting commander, as directed by the CJTF.
- Establishing a personnel recovery coordination cell to account for and report the status of isolated personnel and to coordinate and control maritime component personnel recovery events; and, if directed by the CJTF, establish a separate joint personnel recovery center for the same purpose in support of a joint recovery event.

JFSOCC

- Advising the CJTF on the proper employment of special operations forces (SOF) and assets.
- Planning and coordinating special operations (SO) and employing designated SOF in support of the CJTF's concept of operations.
- Issuing planning guidance.
- Analyzing various courses of action.

- Coordinating the conduct of SO with the other joint task force component commanders and subordinate task forces.
- Evaluating the results of SO.
- Focusing on operational-level functions and their control.
- Synchronizing sustainment for SOF.
- Establishing a combat identification standing operating procedure and other directives based on CJTF guidance.
- Establishing an unconventional assisted recovery coordination cell to coordinate and control nonconventional assisted recoveries (including unconventional assisted recoveries) and recovery mechanisms in support of joint personnel recovery center and personnel recovery coordination cell.
- Functioning as a supported and supporting commander, as directed by the CJTF.

JCMOTF

- Advising the CJTF on policy, funding; multinational, foreign, or host-nation sensitivities; and their effect on theater strategy and/or campaign and operational missions.
- Providing command and control or direction of military host-nation advisory, assessment, planning, and other assistance activities by joint US forces.
- Assisting in establishing US or multinational and military-to-civil links for greater efficiency of cooperative assistance arrangements.
- Performing essential coordination or liaison with host-nation agencies, country team, United Nations agencies, and deployed US, multinational, and host-nation military forces and supporting logistic organizations.
- Assisting in the planning and conduct of civil information programs to publicize positive results and objectives of military assistance projects, to build civil acceptance and support of US operations, and to promote indigenous capabilities contributing to recovery and economic-social development.
- Planning and conducting joint and combined civil-military operations training exercises.
- Advising and assisting in strengthening or stabilizing civil infrastructures and services and otherwise facilitating transition to peacekeeping or consolidation operations and associated hand-off to other United States Government (USG) agencies, international organizations, or host-nation responsibility.
- Assessing or identifying host-nation civil support, relief, or funding requirements to the CJTF for transmission to supporting commanders, Military Services, or other responsible USG agencies.
- Establishing combat identification standing operating procedures and other directives based on CJTF guidance.

JPOTF

- Advise the CJTF on psychological operations (PSYOP).
- Conduct PSYOP planning and execution.
- Issue planning guidance.
- Advise the CJTF on the targeting process regarding PSYOP, PSYOP enabling actions, and targeting restrictions.

- Provide public information to foreign audiences within the joint task force operational area.
- Assist in countering propaganda, misinformation, and opposing information to correctly portray friendly intent and action to foreign target audiences.
- Analyze various courses of action.
- Develop, produce, distribute, and disseminate PSYOP products and actions to achieve PSYOP objectives.
- Coordinate with the other subordinate task forces and components to synchronize operation plans and PSYOP efforts in support of CJTF objectives.
- Conduct PSYOP dissemination operations.
- Evaluate the change in behavior of the target audience.
- Conduct liaison with host-nation agencies and other USG organizations.
- Coordinate and synchronize all PSYOP public information activities with public affairs.
- Provide defense support to public diplomacy efforts through a military information support team in the US embassy.

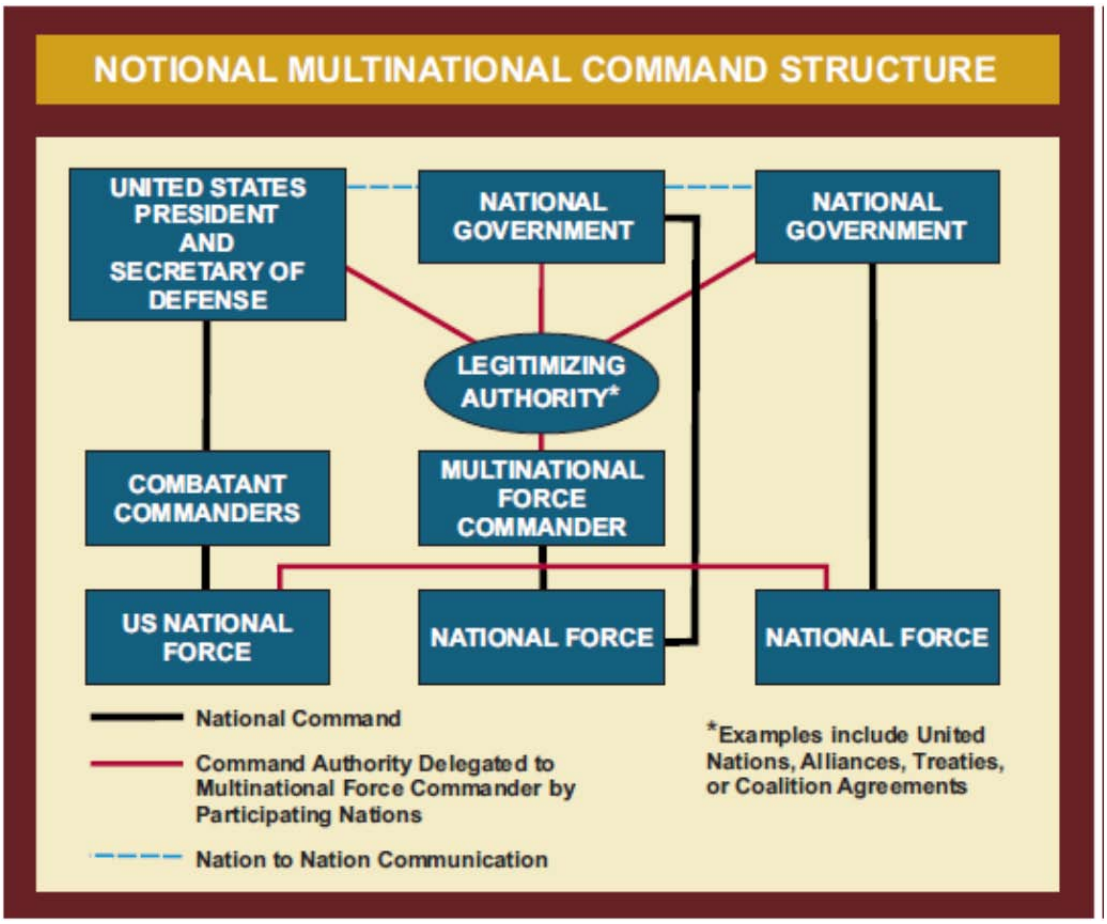
Joint forces are usually organized with a combination of service and functional component commands with operational responsibilities. Normally, a service component will be "dual-hatted" when appointed a functional component. Additionally, service components are normally selected for functional command based upon the weight of their contribution to the effort. Due to their ability to sustain a theater operation, the Army, more often than not, will perform the JFLCC role. However, the Marine Corps may prove the best option for the JFLCC depending upon the given circumstances. For large scale conflicts, the Air Force will normally draw the JFACC role, just as the Navy and perhaps the Marine Corps could be JFACCs in smaller scale contingencies when access to host nation basing is an issue. For the same reasons, the Navy will normally be the JFMCC.
The JFC has full authority to assign missions, redirect efforts, and direct coordination among subordinate commanders. JFCs should allow Service tactical and operational assets and groupings to function generally as they were designed. The intent is to meet the needs of the JFC while maintaining the tactical and operational integrity of the Service organizations.

IV. Multinational Command Organization

US commanders should expect to conduct military operations as part of a multinational force (MNF). These operations could span the range of military operations and require coordination with a variety of USG agencies, military forces of other nations, local authorities, IGOs, and nongovernmental organizations (NGOs). Much of the information and guidance provided for unified action and joint operations remains applicable to multinational operations. However, commanders and staffs must account for differences in partners' laws, doctrine, organization, weapons, equipment, terminology, culture, politics, religion, and language. Fusing a coalition together is much more complex, therefore attaining unity of effort can be very challenging.

Although nations will often participate in multinational operations, they rarely, if ever, relinquish national command of their forces. As such, forces participating in a multinational

operation will always have at least two distinct chains of command: a national chain of command and a multinational chain of command (see Figure below).



National Command

As Commander and Chief, the President always retains and cannot relinquish national command authority over US forces. National command includes the authority and responsibility for organizing, directing, coordinating, controlling, planning employment, and protecting military forces. The President also has the authority to terminate US participation in multinational operations at any time.

Multinational Command

Command authority for a MNC is normally negotiated between the participating nations and can vary from nation to nation. Command authority could range from operational control (OPCON), to tactical control (TACON), to designated support relationships, to coordinating authority.

Multinational Command Structures

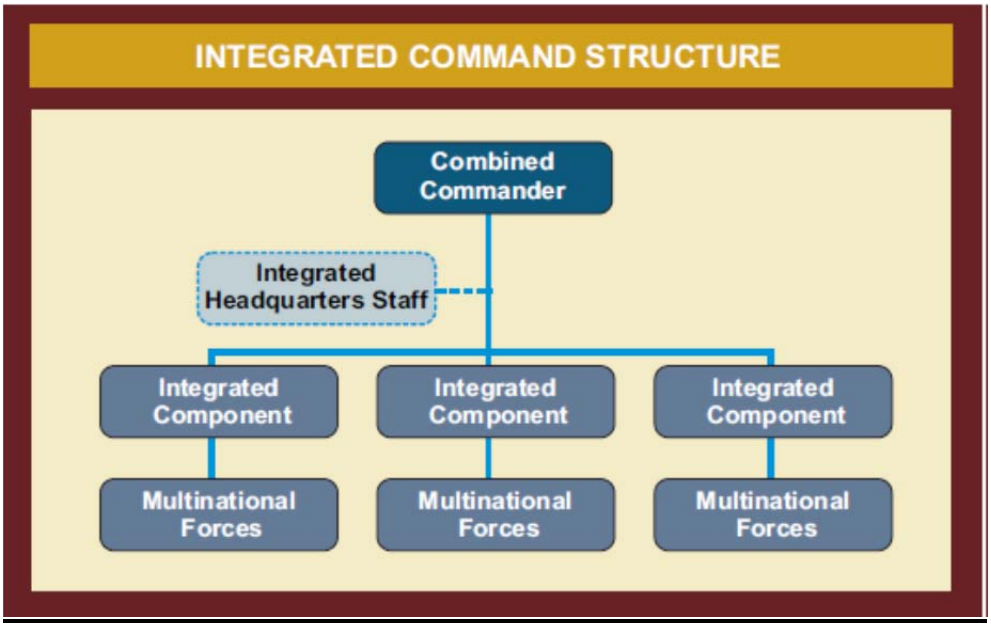
No single command structure meets the needs of every multinational command but one absolute remains constant; political considerations will heavily influence the ultimate shape of the command structure. However, participating nations should strive to achieve unity of command for the operation to the maximum extent possible, with missions, tasks,

responsibilities, and authorities clearly defined and understood by all participants. While command relationships are fairly well defined in US doctrine, they are not necessarily part of the doctrinal lexicon of nations with which the United States may operate in coalition or combined operations. The basic structures for multinational operations fall into one of three types: integrated, lead nation, or parallel command.

Integrated Command Structure

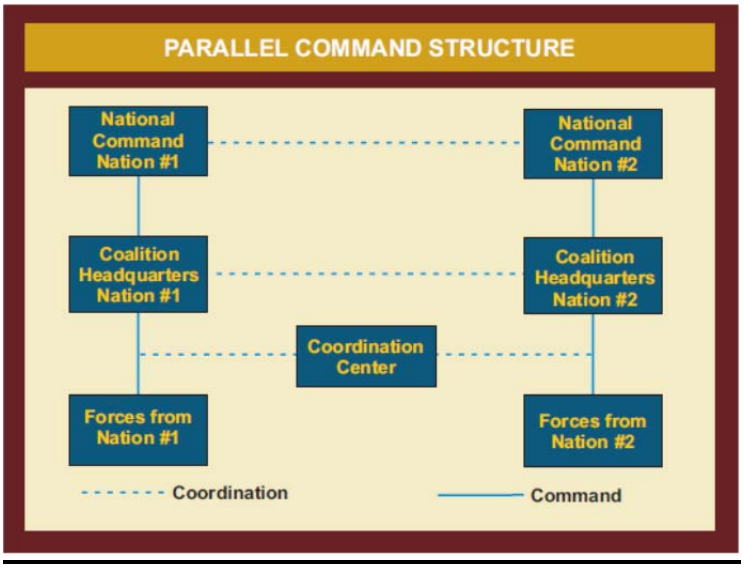
Multinational commands organized under an integrated command structure provide unity of effort in a multinational setting (see Figure below). A good example of this command structure is found in NATO where a strategic commander is designated from a member nation, but the strategic command staff and the commanders and staffs of subordinate commands are of multinational makeup. The key factors in an integrated combined command are:

- A designated single commander.
- The staff is composed of representatives from all member nations.
- Subordinate commands and staffs are integrated into the lowest echelon necessary to accomplish the mission.



Parallel Command Structure

Under a parallel command structure, no single force commander is designated (see Figure below). The political factors present in coalition building often preclude integrated C2 organization in which case unity of effort must be achieved through coordination and cooperation (CO_2) vice C2. The coalition leadership must develop a means for this coordination among the participants in order to attain unity of effort. This can be accomplished through the use of coordination centers. Nonetheless, because of the absence of a single commander, the use of a parallel command structure should be avoided if at all possible.

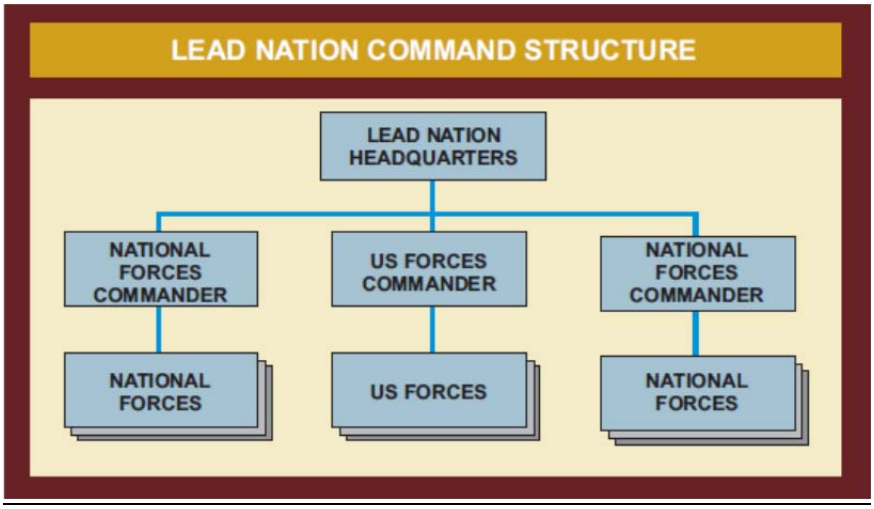


Lead Nation Command Structure

A lead nation structure exists when all member nations place their forces under the control of one nation (see Figure below). The lead nation command can be distinguished by a dominant lead nation command and staff arrangement with subordinate elements retaining strict national integrity.

A lead nation command may also be characterized by an integrated staff and multinational subordinate forces. Integrating the staff allows the commander to draw upon the expertise of allied or coalition partners in areas where the lead nation may have less experience.

Rotational command, a variation of lead nation command sometimes found in combined commands, allows each participating nation to be the lead nation in turn. To be effective, command tour lengths should be adjusted so that participating nations may alternate exercising the authority of the lead nation. However, command tours should not be so short to be operationally meaningless.



V. US vs. Alliance Command Relationships

The figure below offers a comparison between US command relationships and the two alliance command relationships of NATO and CFC/USFK.

Authority	Most control → Least control						
	US COCOM	US OPCON	NATO OPCOM	NATO OPCON	CFC/USFK COMBINED OPCON	NATO TACOM	US & NATO TACON
Direct authority to deal with DOD, US diplomatic missions, agencies	X						
Coordinate CINC boundary	X						
Granted to a command	X		X				
Delegated to a command		X		X	X	X	X
Set chain of command to forces	X	X					
Assign mission/designate objective	X	X	X				
Assign tasks	X	X	X			X	
Direct/employ forces	X	X	X	X	X		
Establish maneuver control measures	X	X	X	X	X	X	X
Reassign forces	X						
Retain OPCON	X	X	X				
Delegate OPCON	X	X	X	X with approval			
Assign TACOM	X	X					
Delegate TACON	X	X	X	X	X		
Retain TACON	X	X	X	X			
Deploy forces (information/within theater)	X	X	X	X			
Local direction/control designated forces	X	X					X
Assign separate employment of unit components	X	X	X				
Directive authority for logistics	X						
Direct joint training	X	X					
Exercise command of US forces in MNF	X	X					
Assign/reassign subordinate commanders/officers	X	May suspend or recommend reassignment					
Conduct internal discipline/training	X						

NATO *Full Command* and CFC/USFK *Command less OPCON* are basically equivalent to US COCOM, but only for internal matters

X – has this authority

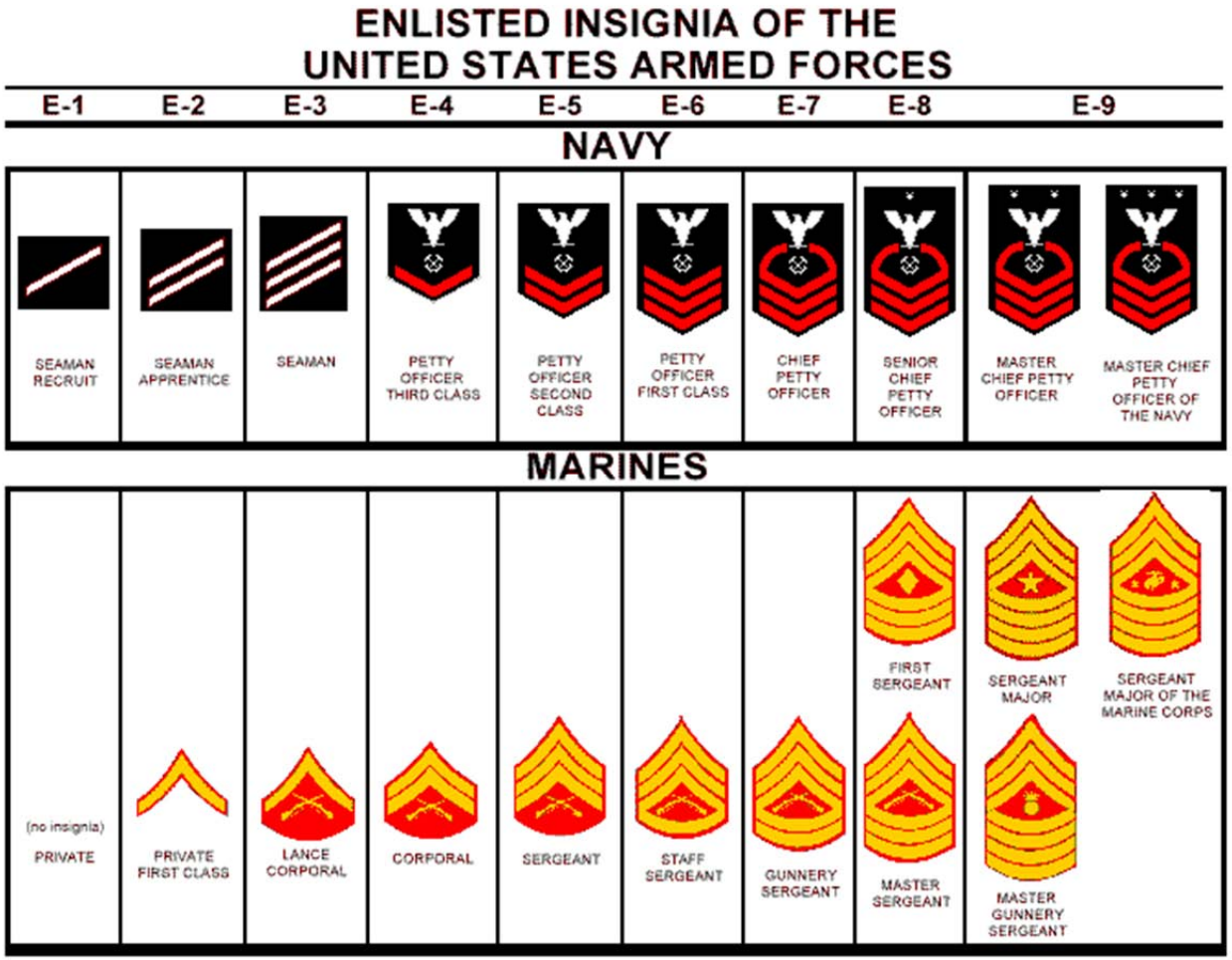
– denied this authority, or not specifically granted it

LEGEND

COCOM – Combatant command
OPCON – Operational control
OPCOM – Operational command
TACOM – Tactical command
TACON – Tactical control

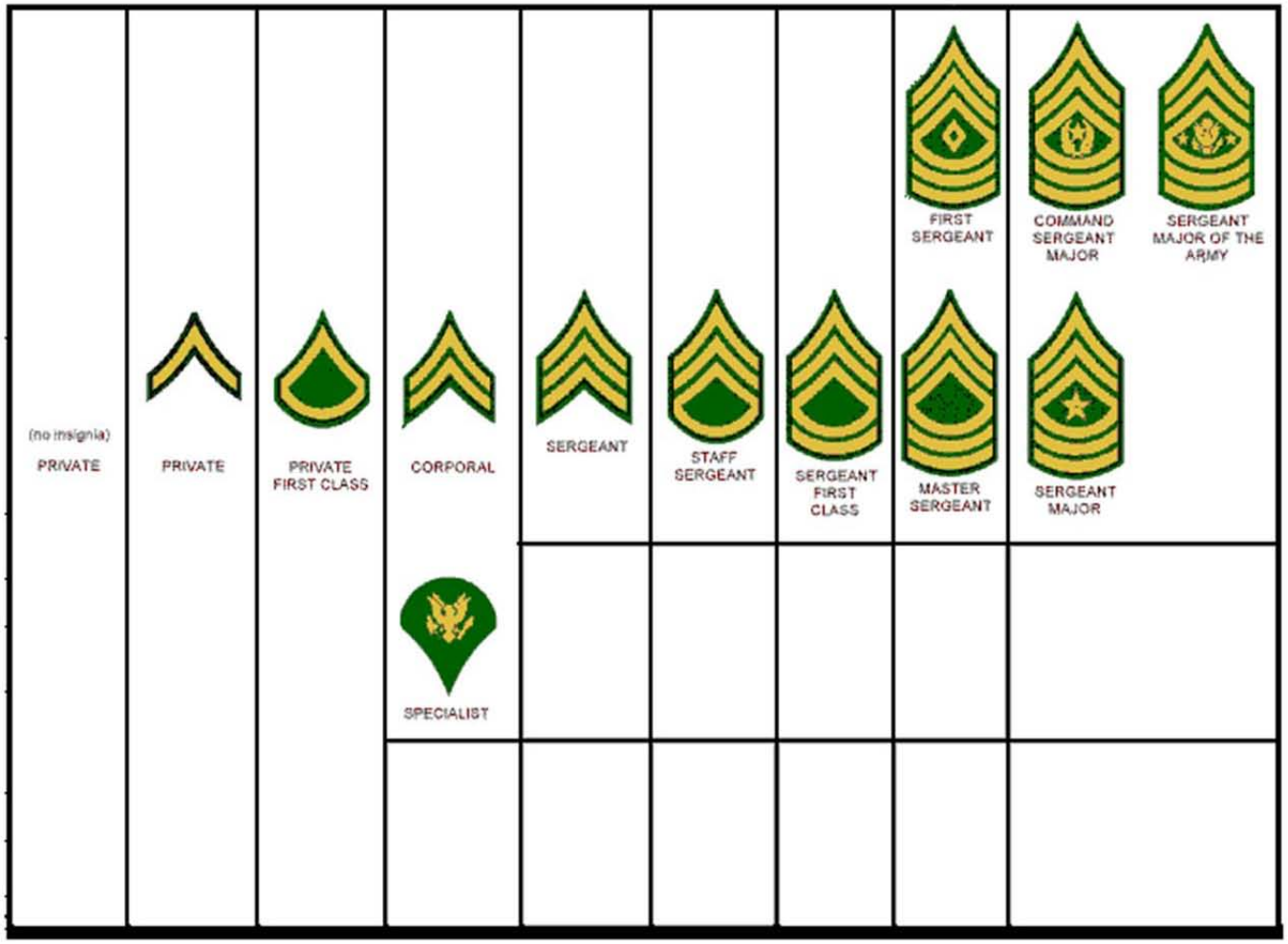
APPENDIX A

SERVICES' INSIGNIA

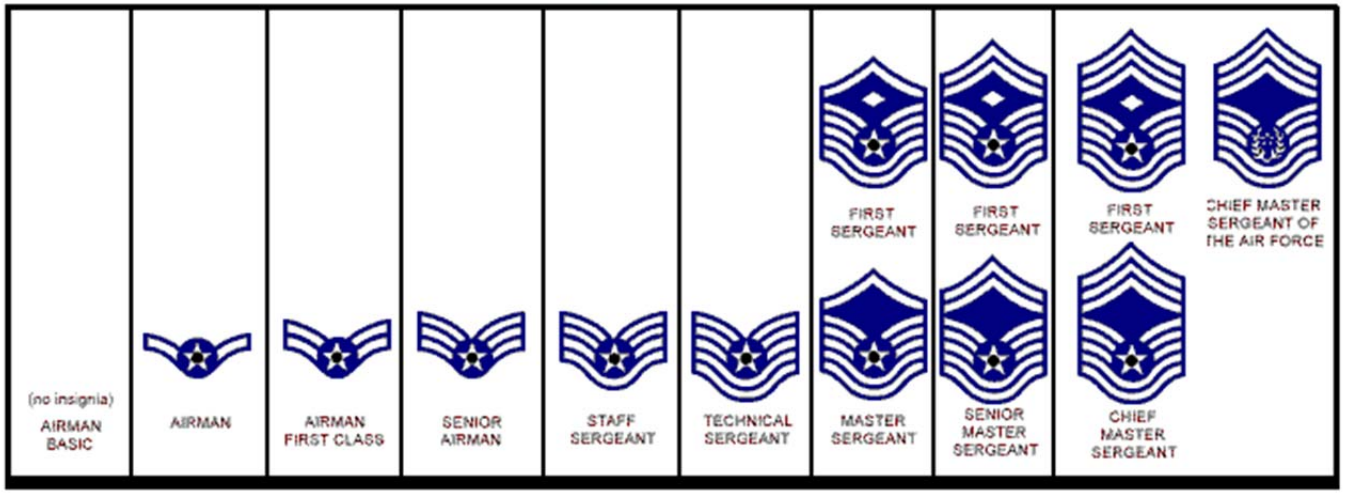


**Coast Guard insignia are identical to Navy.

ARMY


(no insignia)
PRIVATE
PRIVATE
PRIVATE FIRST CLASS
CORPORAL
SPECIALIST
SERGEANT
STAFF SERGEANT
SERGEANT FIRST CLASS
FIRST SERGEANT
MASTER SERGEANT
COMMAND SERGEANT MAJOR
SERGEANT MAJOR
SERGEANT MAJOR OF THE ARMY

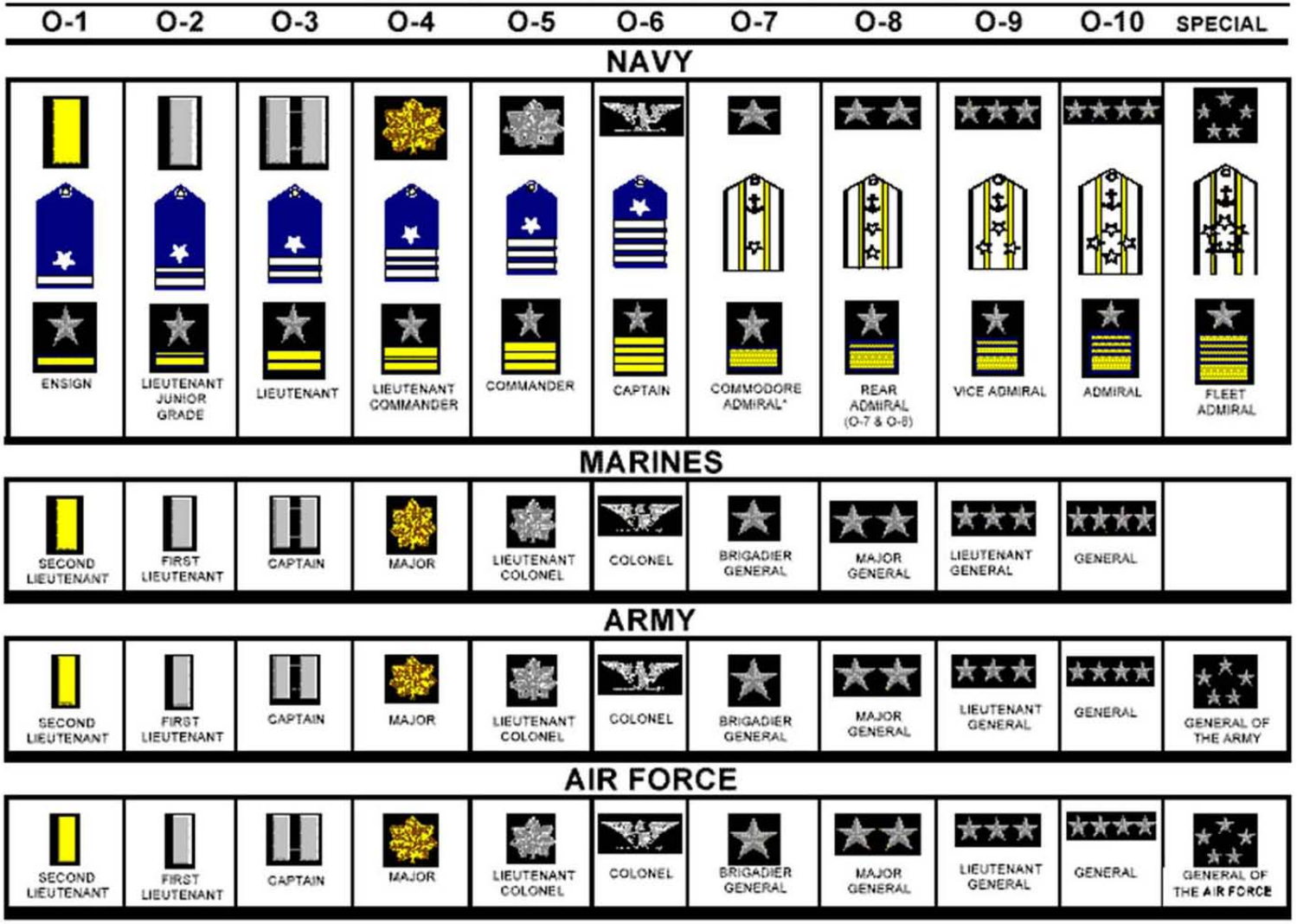
AIR FORCE



WARRANT

	NAVY	MARINES	ARMY
W-1		WARRANT OFFICER	WARRANT OFFICER
W-2	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER
W-3	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER
W-4	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER
W-5		CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER

OFFICERS INSIGNIA OF THE UNITED STATES ARMED FORCES



**Coast Guard insignia are identical to Navy.

APPENDIX B

CONVERSION TABLE

To convert A to B, multiply A by C. To convert B to A, multiply B by D.

1	2	3	4
Unit	Factor		Unit
A	C	D	B
Length:			
Miles	63,360 [b]	0.00001578	Inches
Miles	5,280. [b]	0.0001894	Feet
Miles	1.609	0.6214	Kilometers
Nautical miles	1.1508	0.869	Miles
Meters	3.281	0.3048	Feet
Kilometers	3,280.8	0.0003048	Feet
Inches	2.540	0.3937	Centimeters
Feet	.1667	6.0	Fathom
Surface:			
Square miles	27,878,400.	0.00000003537	Square feet
Square miles	640 [b]	0.001563	Acres
Acres	43,560 [b]	0.00002296	Square feet
Acres	4,047	0.0002471	Square meters
Square inches	6.452	0.1550	Sq centimeters
Square meters	10.76	0.09290	Square feet
Volume:			
Cubic feet	0.025	40.0	Tons (shipping)
Cubic feet	1,728 [b]	0.0005787	Cubic inches
Cubic inches	16.39	0.06102	Cu. centimeters
Cubic meters	35.31	0.02832	Cubic feet
Cubic feet	7.481	0.1337	U.S. gallons
Cubic feet	6.232	0.1605	Imperial gals.
Cubic feet	28.32	0.03531	Liters
U.S. gallons	231 [b]	0.004329	Cubic inches
U.S. gallons	3.785	0.2042	Liters
Imperial gallons	1.201	0.8327	U.S. gallons
Fluid ounces	1.805	0.5540	Cubic inches
Velocities:			
Miles per hour	1.467	0.6818	Feet per second
Meters per second	3.281	0.3048	Feet per second
Meters per second	2.237	0.4470	Miles per hour
Pressure:			
Atmos. (mean)	14.70	0.0680	Lbs per sq in
Atmos. (mean)	29.92	0.03342	In. of mercury
Lbs. per sq inch	2.036	0.4912	In. of mercury
Feet of water	62.42	0.01602	Lbs. per sq foot

APPENDIX B

CONVERSION TABLE (CONTINUED)

Weight:			
Ounces	0.0625	16.0	Pounds
Pounds	7,000 [b]	0.0001429	Grains (avoir.)
Kilograms	2.205	0.4536	Pounds
Short tons	2,000	0.0005	Pounds
Long tons	1.120 [b]	0.8929	Short tons
Angular Measure:			
Circle	360.0		Degrees
Degree	60.0		Minutes
Degree	17.8	0.056	Mils
Mil [a]	3.37	0.297	Minutes
Minute	60.		Seconds

NOTE: [a] A mil is the angle subtended by an arc of 1 unit on a radius of 1,000 units (an angle the tangent of which is approximately (small angles) 1/1,000). The arbitrary value of the mil adopted by the United States Army is 1/6,400 of a circle

[b] Exact values.

APPENDIX C

Navy Composite Warfare Commander (CWC) Concept

The CWC Concept was developed in concert with the "defense in depth" concept during the Cold War. It was designed to permit the Carrier Battle Group (CVBG) Commander to fight "fleet on fleet" engagements across multiple warfare areas simultaneously against the Soviet Union. The key operational assumption was that the CVBG would fight simultaneously in all three dimensions (air, surface, subsurface) within roughly 200 to 300 miles of the aircraft carrier (CV). The prevailing thought was that the CVBG Commander would be overwhelmed with so much simultaneous information that it would impact speed of command and tactical proficiency. Therefore, the Navy developed the CWC Concept and implemented its two central tenets: command by negation, and decentralized control. The CVBG has evolved into the Carrier Strike Group (CSG) and integrated into the joint operational domain.

The Navy's CWC Concept shares similarities with the joint force command and control construct, albeit with a more tactical focus. Under the CWC architecture, the Officer in Tactical Command (OTC) delegates command authority in tactical warfare areas to subordinate commanders within his organization. Subordinate commanders then execute assigned tasks within those warfare areas with assigned assets based on the OTC's guidance. The CWC concept is the Navy's C2 construct for tactical execution. This construct, though designed for tactical level maritime operations, is not unlike the construct utilized by Joint Force Commanders (JFC), who employ decentralized execution and a form of command by negation in directing the operational execution of subordinate component commanders. The relationship between the JTF Commander and his subordinate component commanders is similar to the relationship between the CWC/OTC and his subordinate warfare commanders.

The CWC retains responsibility and accountability for the conduct of Carrier Strike Group (CSG) operations and delegates authority for employing forces to his principle warfare commanders. In order to decide the assignment and location of subordinate warfare commanders and coordinators, the CWC must take into account the tactical situation, force size, and capabilities required to cope with an expected threat.

Principle warfare commanders employ forces assigned to them by the CWC and respond to threats according to the CWC's guidance. The CWC's guidance is promulgated via a naval message called the OPGEN. The OPGEN describes the operational environment, assigns warfare commanders and warfare areas, allocates assets, outlines mission priorities, defines command relationships, and provides commander's guidance. The OPGEN also provides a common framework (and battle rhythm) which allows warfare commanders to manage their specific warfare areas and control their assets. Therefore, the CWC does not become overwhelmed with the volume of detail associated with CSG operations. Regardless of the delegation of command authority, the CWC ultimately retains overall responsibility. As stated above, warfare commanders control their individual warfare specialties; however, the CWC may intervene by negating the warfare commander's orders or tactics.

CWC / OTC:
The Composite Warfare Commander is the central command authority and overall commander. The CWC is usually a Rear Admiral (O7/O8) in command of a CSG (Carrier Strike Group Commander) who is embarked in the aircraft carrier (CVN) along with a support staff. Under the CWC architecture, the Officer in Tactical Command (OTC) delegates command authority in particular warfare areas to subordinate commanders within the CWC organization. Usually, the OTC is also the CWC, but in certain situations the CWC and OTC may be separate officers. The OTC has the option to delegate overall coordination of defensive warfare areas to a CWC and can retain direct command in any one (or more) warfare area(s) if desired. Because this rarely occurs, the terms CWC and OTC are usually interchangeable. However, great care must be exercised when applying the CWC or OTC distinction to coalition operations. In a coalition environment, misunderstanding the CWC/OTC relationship may either facilitate or hinder warfare integration with joint or coalition partners.

Subordinate to the CWC are principal warfare commanders to include: Sea Combat Commander (SCC), Surface Warfare Commander (SUWC), Undersea Warfare Commander (USWC), Air Warfare Commander (AWC), Information Warfare Commander (IWC), Strike Warfare Commander (STWC), and Mine Warfare Commander (MIWC).

Principle Warfare Commanders:
Principle warfare commanders are usually individual ship Commanding Officers (CO's) or embarked Commanders (Destroyer Squadron (DESRON) or Carrier Air Wing (CAG). They usually exercise tactical control (TACON) of all assets assigned to their warfare area. Each principle warfare commander reports directly to the CWC.

SCC:
The SCC is normally the DESRON Commander (a Navy O6) and is embarked on the CVN. The SCC is responsible for conducting operations in multiple warfare areas. Originally conceived as a combination of Surface Warfare (SUW) and Undersea Warfare (USW); SCC's operational reach has expanded to include (MIWC) and other supporting functions as well. At the discretion of the SCC (with the CWC's concurrence), the SCC may divest warfare area responsibilities to other commanders in the CSG or to coalition partners. Some examples include assigning the CO of the CVN as SUWC, or a coalition partner as USWC.

SUWC:
The SUWC is an incorporated responsibility of the SCC, but may be executed separately as the situation dictates. The mission of the SUWC is the conduct of both offensive and defensive maritime operations to defeat enemy surface threats (primarily ships). The SUWC; if divested from the SCC will normally have an alternate warfare commander assigned. Candidates include the CO of the CVN, CAG, or a coalition partner. Both the SCC and the SUWC (when divested) place a high demand signal on limited aviation assets in order to support surface surveillance and anti-surface operations. The Force over the Horizon Coordinator (FOTC) support function is usually associated with this warfare area.

USWC:
The USWC is also an incorporated responsibility of the SCC responsible for anti-submarine warfare (ASW) operations. It may be executed separately from the SCC as the situation dictates. The mission of the USWC is the conduct of both offensive and defensive maritime operations to defeat enemy subsurface threats (primarily submarines). When divested, the USWC will also have an alternate warfare commander assigned. Candidates include the CO's of either the Guided Missile Cruiser (CG) or Guided Missile Destroyer (DDG); or a coalition partner. The Screen Coordinator (SC) and the Light Air Multi-purpose System (LAMPS) Element Coordinator (LEC- responsible for coordination of ASW helo assets) support functions are also associated with this warfare area.

AWC/ADC:
The ADC is normally the CO (a Navy O6) of one of two AEGIS guided-missile cruisers (CG). The mission of the ADC is to defend the CSG against air threats (primarily airplanes and missiles). The alternate ADC is normally the other CG Commanding Officer or the CO of a DDG if only one CG is assigned to the CSG. The ADC, CAG and the CVN must coordinate their efforts in order to effectively conduct air operations. Within the joint air defense architecture the ADC will typically be a RADC/SADC (Regional Air Defense Commander/Sector Air Defense Commander) supporting the JFACC AADC functions.

IWC:
The IWC includes the function of Space and Electronic Warfare Commander (SEWC). The IWC is normally a part of the CWC's support staff embarked on the CVN and responsible for all CSG Information Operations. This individual serves as the principle advisor to the CWC for the exploitation of the electromagnetic spectrum by friendly forces and the denial of its use to enemy forces. The IWC promulgates Emissions Control (EMCON) restrictions, monitors intelligence, sensor operations, develops operational deception, and counter-targeting plans for the CSG among other functions. The CO of the non-ADC CG may also be assigned as an alternate.

STWC:
The STWC is normally the Carrier Air Wing (CAG) Commander. The mission of the STWC is power projection. The STWC promulgates strike policy, and employs manned aircraft and tactical missiles in accordance with either the Air Tasking Order (ATO) in a joint/combined environment, or the AIRPLAN in an exclusively naval environment. The alternate STWC may be a senior officer on the embarked CWC or CVN staff. In rare cases, the CWC may choose to retain this warfare area and augment his staff with officers from the CVN and CAG staffs.

MIWC:
The MIWC performs those tasks within the CWC organization relating to mine warfare – to include both mining (offensive and defensive) and mine countermeasures (MCM). Usually embarked on a CVN, the MIWC works closely with STWC to plan and conduct mine-laying operations due to the requirement for airborne strike assets as mine layers. The MIWC also works closely with the other principle warfare commanders to ensure that offensive and defensive mine warfare is conducted across the full spectrum of warfare specific areas. Today, the MIWC is a relatively new addition to the CWC organizational staff and has been integrated

into the organizational structure due to the asymmetric nature of the mine threat in littoral areas of operations.

Functional Coordinators:
Supporting the CWC and the principle warfare commanders are the Air Resource Element Coordinator (AREC), the Helicopter Element Coordinator (HEC), the LAMPS element Coordinator (LEC), the Submarine Element Coordinator (SEC), the Force Over-the-Horizon Track Coordinator (FOTC), and the Screen Coordinator (SC). The functional coordinators play important roles in the CWC concept. Their specific responsibilities cross warfare areas boundaries and require information to be shared between warfare commanders in order for all concerned to be effective. These functional coordinators can be staff members embarked on the carrier, principle warfare commanders who are "dual-hatted", or individual ship CO's.

AREC:
The AREC is responsible for managing and coordinating the distribution of aircraft and keeping the CWC and other warfare commanders/coordinators apprised of air operations. Normally the AREC is the CVN CO and does not function as a warfare commander. Instead, the AREC's responsibilities include serving as an air operations advisor to the CWC and producing the daily air plan that allocates CSG aircraft to the various warfare commanders.

HEC:
The role of the HEC in the strike group is to advise the CWC of all non-logistics helicopter operations to support the strike group. Usually the HEC is embarked on board the carrier and has warfare expertise in helicopter platforms. The HEC is normally a member of the CAG staff.

LEC:
The LEC performs a similar function as the AREC for LAMPS helicopters only in advising the CWC and OTC. Usually the LEC is a staff officer who has expertise in the LAMPS helicopter community (usually assigned to a Destroyer Squadron).

SEC:
The SEC is a usually assigned to the USWC staff when submarines are assigned in direct support of CWC CDRs. The SEC acts as the executive agent in planning submarine operations, conducting waterspace management and battle space deconfliction.

FOTC:
The FOTC is either the Destroyer Squadron Commander or a staff officer aboard the CVN. FOTC serves as the chief advisor to the CWC and manages the CSGs common operational picture (COP) or recognized maritime picture (RMP). Therefore, FOTC spend the majority of their time managing, processing, and disseminating all-source contact information.

SC:
The SC is responsible to the SCC and AWC for coordinating ship positioning in the carrier strike group. He positions the ships in screening or picket stations around the CVN or defended asset/area to provide protection against expected threats. SCC is normally assigned SC duties, but SC may be assigned to AWC (rare) or the CO of the CVN if the SCC is not embarked.

The CWC Concept and Amphibious Operations:
When a CSG is tasked to support an amphibious operation the command and control environment is challenging. Conducting amphibious operations in a joint environment with coalition partners adds another layer of complexity. The command and control challenges are both positional and sequential. The first challenge is the command relationship between the CSG Commander and the Amphibious Ready Group – Marine Expeditionary Unit (ARG-MEU) Commander. The second challenge is within the ARG-MEU between the Commander Amphibious Task Force (CATF) and the Commander of the Landing Force (CLF).

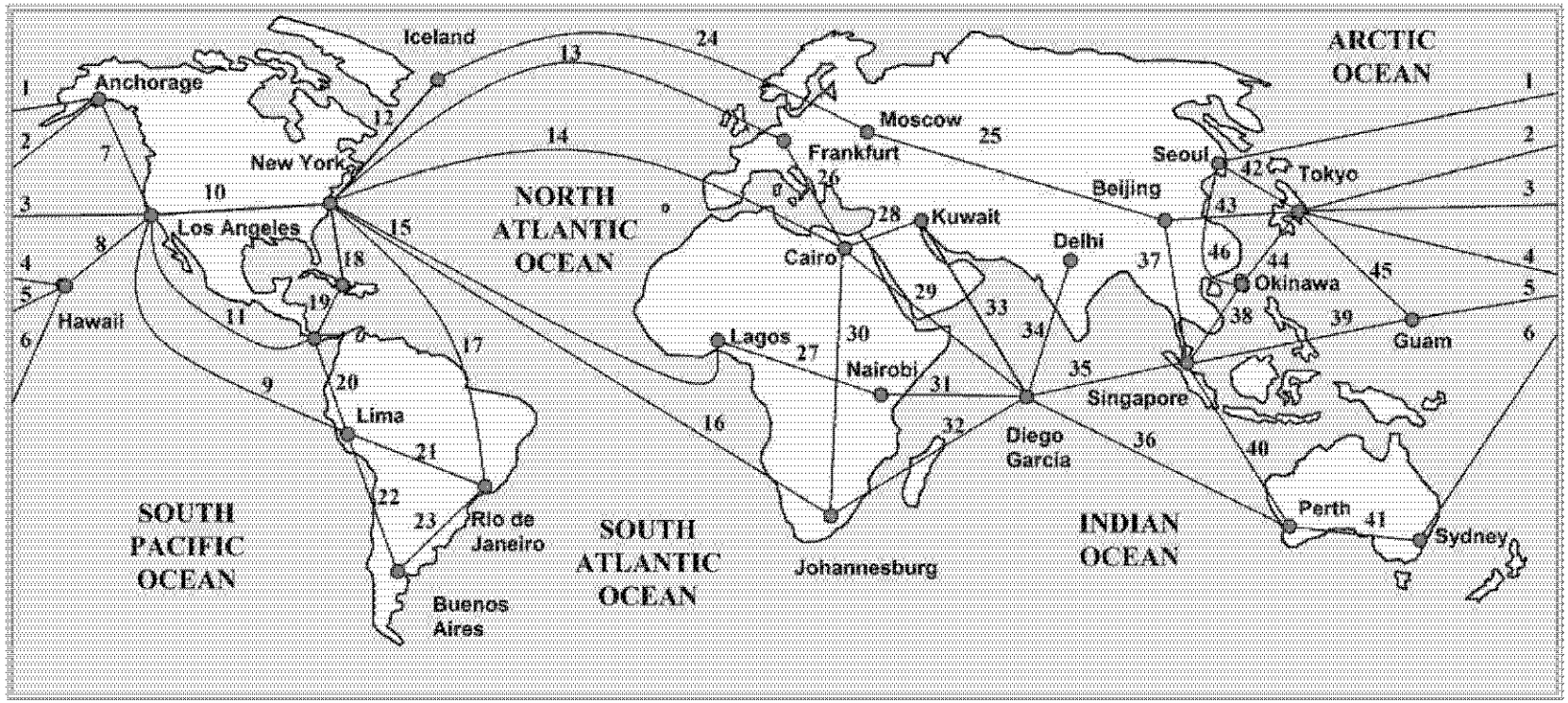
The CWC concept is relevant to the first challenge. The CWC architecture allows for the establishment of two separate CWC organizations; one for the CSG, the other for the ARG-MEU or a combined CWC which encompasses the entire force. Another solution could be to apply the support command relationship to the conduct of an amphibious operation when both the CSG and ARG-MEU are operating in the same battle space. For example, during the transit to the area where the amphibious landing will be conducted, the CSG Commander will be the supported commander. Once amphibious operations begin, the ARG-MEU Commander will be the supported commander.

Summary:
Supporting coordinators differ from the warfare commanders in one very important respect. Warfare commanders have TACON of resources assigned and may employ forces. The supporting coordinators execute policy, but do not employ forces. The CWC concept provides a command structure which facilitates operations at the tactical level. Command by negation and decentralized control allow subordinate warfare commanders to support the conduct of CSG operations within their warfare areas. The CWC Concept permits the CWC to perform effective command and control (C2) over his forces regardless of the operational disposition: offensive, or defensive – wartime, or in peacetime.

APPENDIX D

AIR ROUTE TIMES (HOURS)

Route	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
NM	3303	3024	4802	3997	3385	4413	2060	2211	3612	2160	2589	2283	3339	4868	4559	6895	4153	1260	761	1223	2038	1690	1069
460 Kts [1]	7.2	6.6	10.4	8.7	7.4	9.6	4.5	4.8	7.9	4.7	5.6	5.0	7.3	10.6	9.9	15.0	9.0	2.7	1.7	2.7	4.4	3.7	2.3
425 Kts [2]	7.8	7.1	11.3	9.4	8.0	10.4	4.8	5.2	8.5	5.1	6.1	5.4	7.9	11.5	10.7	16.2	9.8	3.0	1.8	2.9	4.8	4.0	2.5
290 Kts [3]	11.4	10.4	16.6	13.8	11.7	15.2	7.1	7.6	12.5	7.4	8.9	7.9	11.5	16.8	15.7	23.8	14.3	4.3	2.6	4.2	7.0	5.8	3.7



Route	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
NM	1781	3161	1583	2052	856	3356	3342	2169	2755	2607	2153	1938	2833	2407	2046	2547	2089	1796	638	1135	829	1357	670
460 Kts [1]	3.9	6.9	3.4	4.5	1.9	7.3	7.3	4.7	6.0	5.7	4.7	4.2	6.2	5.2	4.4	5.5	4.5	3.9	1.4	2.5	1.8	3.0	1.5
425 Kts [2]	4.2	7.4	3.7	4.8	2.0	7.9	7.9	5.1	6.5	6.1	5.1	4.6	6.7	5.7	4.8	6.0	4.9	4.2	1.5	2.7	2.0	3.2	1.6
290 Kts [3]	6.1	10.9	5.5	7.1	3.0	11.6	11.5	7.5	9.5	9.0	7.4	6.7	9.8	8.3	7.1	8.8	7.2	6.2	2.2	3.9	2.9	4.7	2.3

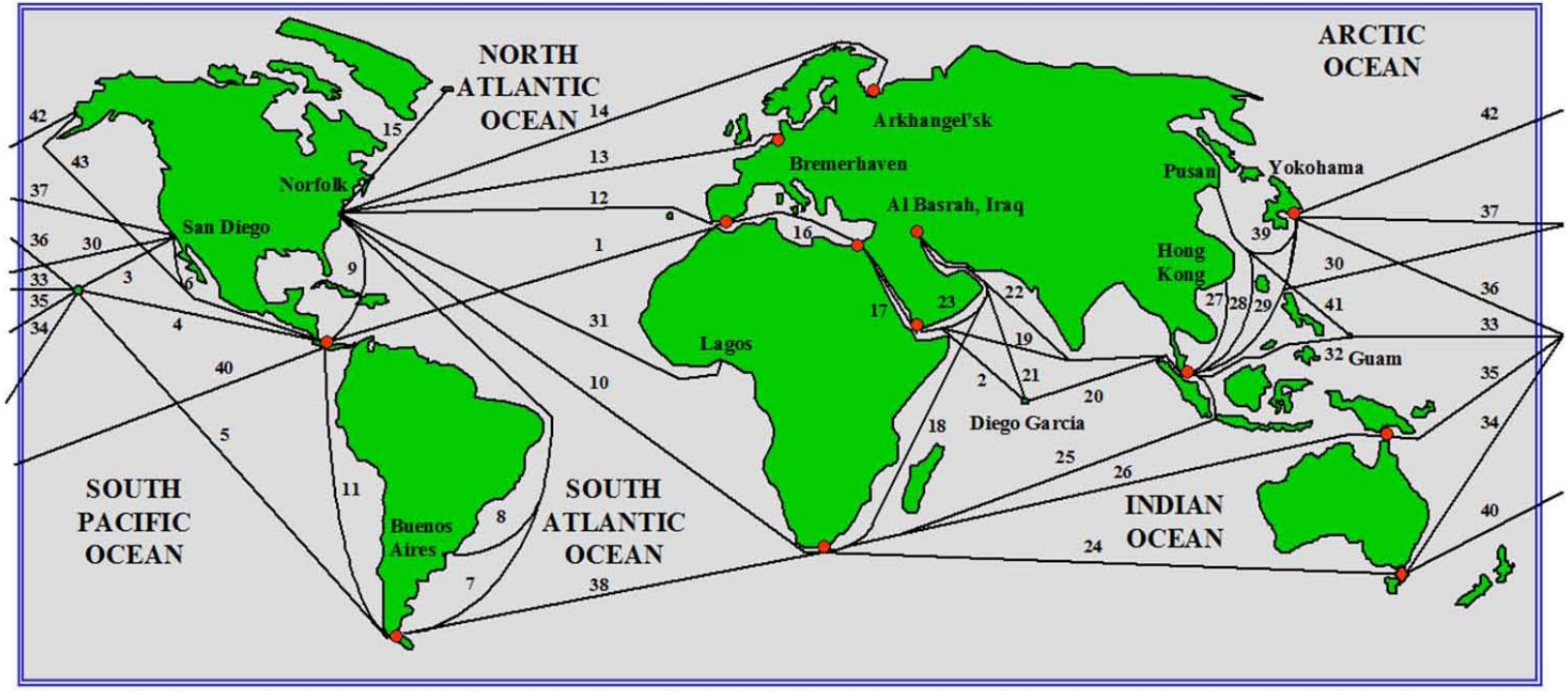
[1] Heavy Bomber [2] Heavy Airlift, Tanker, Ferrying Fighter [3] Intra-Theater Airlift

Reference: http://www.atinet.org/~steve/cs150/ "Great Circle Distance Calculator"

5/2/02

SEA ROUTE TIMES (DAYS)

Route	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21*	22
NM	4351	2090	2278	4685	6370	2843	6900	5786	1825	6802	3932	3335	3758	4399	2677	1943	1400	5232	3627	2710	2655	3916
18 KTS [1]	10.1	4.8	5.3	10.8	14.7	6.6	16.0	13.4	4.2	15.7	9.1	7.7	8.7	10.2	6.2	4.5	3.2	12.1	8.4	6.3	6.1	9.1
25 KTS [2]	7.3	3.5	3.8	7.8	10.6	4.7	11.5	9.6	3.0	11.3	6.6	5.6	6.3	7.3	4.5	3.2	2.3	8.7	6.0	4.5	4.4	6.5



Route	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41*	42	43
NM	1967	5530	5696	6854	1454	2502	2889	7736	4941	2585	3318	4792	4191	3397	4932	4362	665	7770	1740	2696	5840
18 KTS [1]	4.6	12.8	13.2	15.9	3.4	5.8	6.7	17.9	11.4	6.0	7.7	11.1	9.7	7.9	11.4	10.1	1.5	18.0	4.0	6.2	13.5
25 KTS [2]	3.3	9.2	9.5	11.4	2.4	4.2	4.8	12.9	8.2	4.3	5.5	8.0	7.0	5.7	8.2	7.3	1.1	13.0	2.9	4.5	9.7

[1] SEALIFT CONVOY [2] CARRIER BATTLE GROUP Reference: "Distances Between Ports" DMA Pub. 151 dated 1995 *Estimated 5/2/02