NWC 3153H

THE UNITED STATES NAVAL WAR COLLEGE

Joint Military Operations

Reference Guide

"FORCES/CAPABILITIES HANDBOOK"

June 2003

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INTRODUCTION

Every student enrolled at the Naval War College is presumed to have a solid understanding and appreciation of his/her service's capabilities and limitations. However, knowledge of the other services' combat organizations, doctrine, concept of operations, or general information, is likely to be less comprehensive. This reading is intended to provide the *basics* on each of the services, SOF, strategic lift, and operational command and control while establishing a baseline for all students. Each U.S. Armed Force, the Special Operations Forces, strategic lift, and operational command and control will be discussed in greater detail in future sessions.

This reading is designed to neither waste your time nor insult your intelligence. Your personal background, coupled with your educational experiences and/or professional interactions with the other Services/Special Operations Forces, dictates where you stand on the knowledge scale. This reading may assist you as a ready reference, for testing purposes, or serve as a quick reference in your future endeavors.

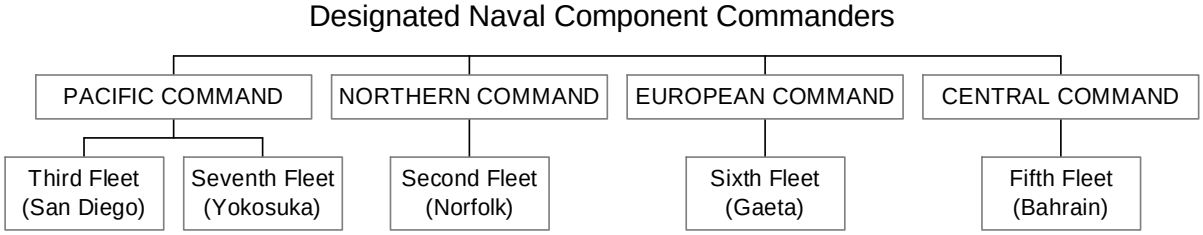
The format of the text is designed to be as succinct as possible, yet to present a complete and accurate description of the subject. Short paragraphs, bullet format, diagrams and appendices are used to convey *general or generic, vice specific,* information. Numbers, ranges, sizes and speeds are either rounded off, cover a broad range of options, or are not discussed at all. In the end, it is hoped that you will realize the significant differences between (for example): an Air Force and a Navy "Major Command;" an SSN and an SSBN; an F-15C and an F-15E; or a MH-53E and a MH-53J.

Finally, in this ever-changing defense environment of budget restraints, base closures, and force reductions, some of the information contained within may already be outdated. Seminar discussions will address the most current information. The material in this document is intended to level the playing field and facilitate your learning experience.

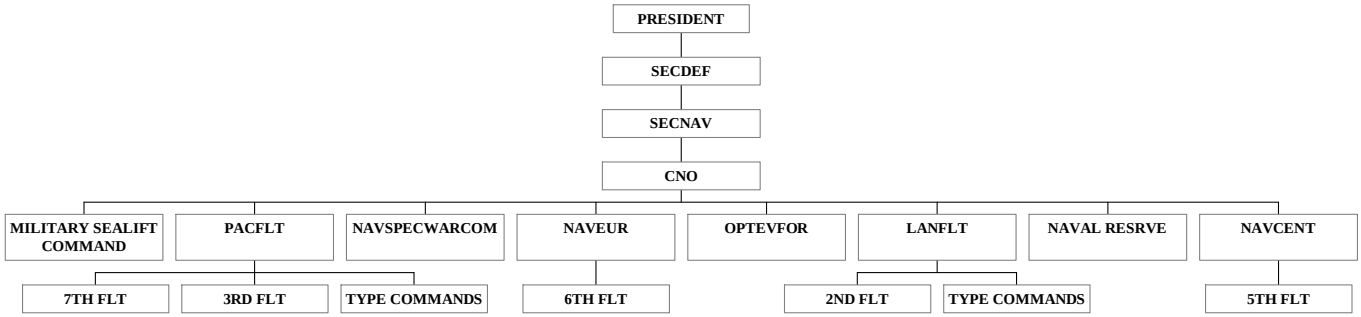
U.S. NAVY

I. ORGANIZATION

U.S. NAVY OPERATIONAL COMMAND

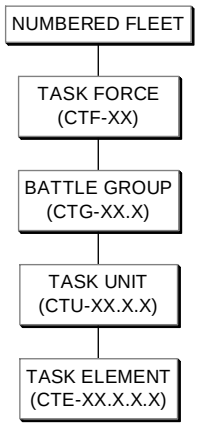


U.S. NAVY ADMINISTRATIVE ORGANIZATION

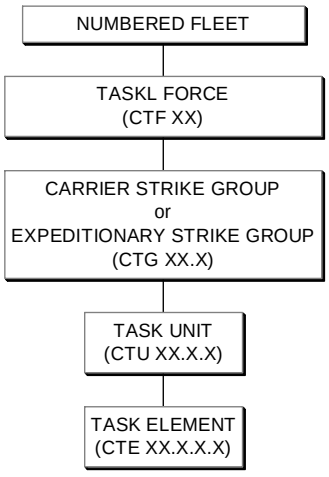


NAVY OPERATIONAL ORGANIZATION

"OLD" NAVY OPERATING ORGANIZATION



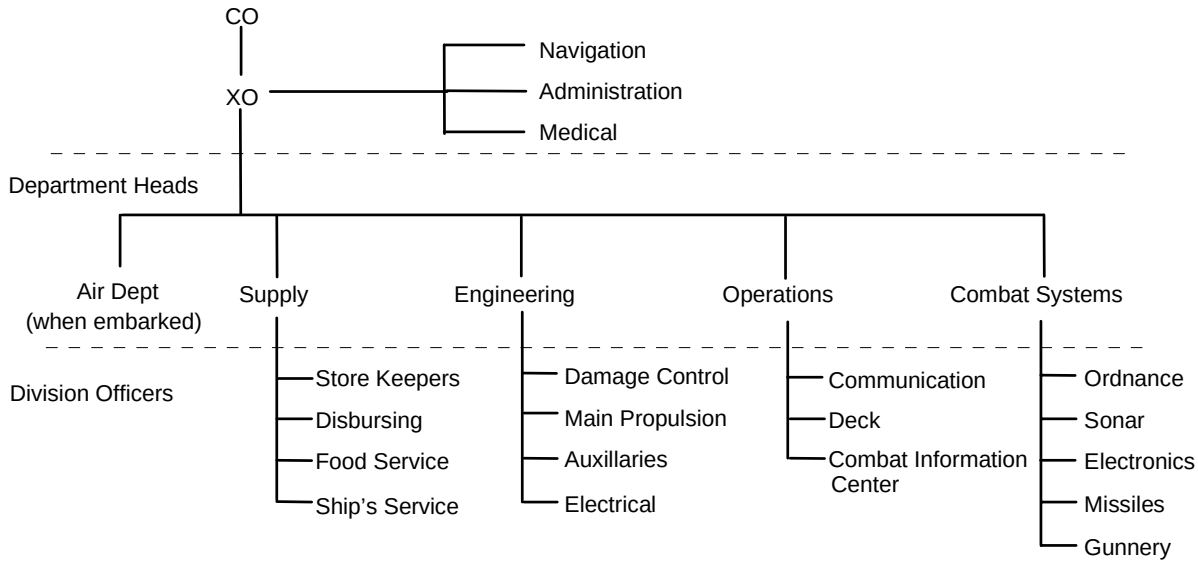
"NEW" NAVY OPERATING ORGANIZATION*



SHIPBOARD ORGANIZATION

The figure below shows a generic shipboard organization for a Frigate size combatant. Different ships have similar organizations but are tailored for the design mission. Destroyer/submarine tenders have a large and robust repair department; larger amphibious ships (and carriers) have medical/dental departments. Supply ships have larger supply and deck departments to facilitate the on-load, inventory, storage, handling, transfer and off-load of stores, ammunition and POL.

GENERIC SHIPBOARD ORGANIZATION (e.g., Frigate)



II. CONCEPT OF OPERATIONS

The U.S. Navy is organized, trained and equipped to conduct joint and sustained operations at sea and to influence events on land. Shaped for joint operations, expeditionary in nature and by operating in the littoral regions of the world, Naval Forces are tailored for our national security needs. Routine peacetime deployments by the Navy are aimed at providing forward presence while being able to respond to emerging crises. In order to provide a more robust capability for crisis response the Navy is changing the groupings of ships deployed forward. Both types of groupings will be seen during the overlap period and they are both discussed below.

Traditional Organization for Deployment and Combat

U.S. Navy operational forces are assigned to numbered Fleet Commanders, as depicted in the previous section. Traditionally, they have operated on a fixed deployment schedule, conducting nominal six-month deployments, followed by an 18-month training and upkeep period in their homeport, usually in the United States. As ships and squadrons conducted inter-deployment training in preparation for their next deployment, they were organized into Aircraft Carrier Battle Groups (CVBGs), Surface Action Groups (SAGs), Amphibious Ready Groups (ARGs) and other functional units assigned to a Navy Task Force organization. Once the inter-deployment training and upkeep is completed these groups deploy overseas. Operational control of the groups and units is passed from the Combatant Commander in

their homeport region to the Combatant Commander in their deployed region. During peacetime, these deployed groups conduct forward presence, training and engagement operations and exercises, normally assigned to an existing static Naval Task Force. During crisis, these groups are already forward deployed and prepared to respond, projecting sea power and presence as required. Often during crisis, additional forces are surged from homeports and combined with existing forward deployed Naval groups. Traditional Naval Group and Force organizations are described below:

An Amphibious Task Force (ATF) is a group of amphibious ships carrying a landing force to an amphibious landing and, following the landing, provides support to the landing force while ashore. Lacking significant defensive armament, an ATF could be imbedded within a SAG or CVBG as part of a Naval Expeditionary Task Force. An ATF would usually include helicopter carriers with USMC helicopters and AV-8B Harrier VSTOL aircraft assigned. These aircraft are trained for and used in the support of ground forces ashore. An ATF can lift a MEU or MEF(FWD) as required. Typical ATF composition would be: 3-36 LCC/LHA/LHD/LPD/LSD; 1 AOR/AO/AE; 2-3 DDG/FFG.

An Amphibious Readiness Group (ARG) is the naval force (ships) that transports and supports the Marine Expeditionary Unit (MEU). (See USMC section for greater detail.) Frequently seen in the forward presence role, the ARG has no self-protection capability and very little (if any) strike capability. Types of ships are similar to those for the ATF, but are considerably fewer in number.

A Convoy Escort Group (CEG) consists of DD/DDG/FFG(s) tasked with protecting military and merchant convoys in transit. Composition of the CEG would depend on the primary threat to the convoy (e.g. air attack, surface or subsurface attack). Land base maritime patrol aircraft (MPA) and/or fighter cover may assist in the successful completion of a convoy mission. Typical CEG Composition would be: 1-2 DD/DDG/FFG.

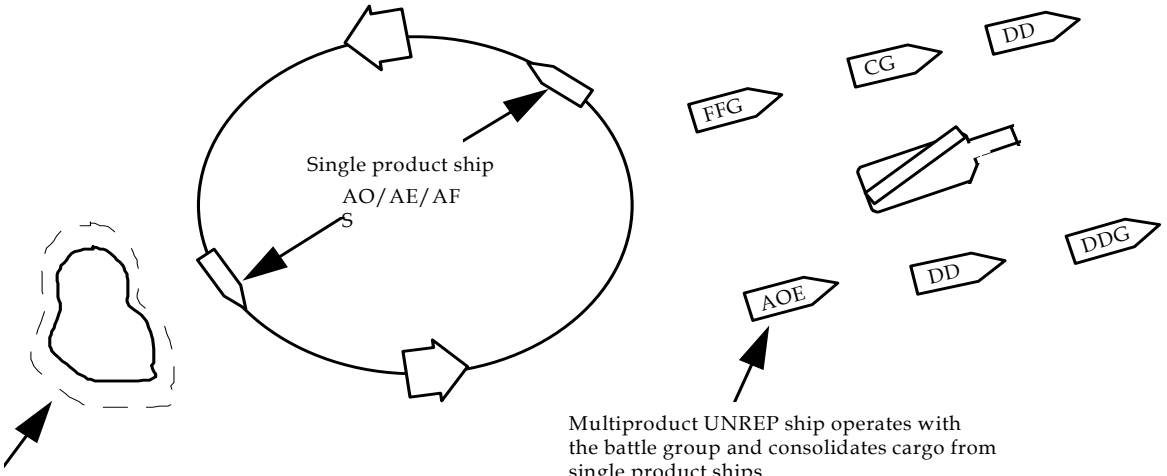
Carrier Battle Force (CVBF). A CVBF is composed of several carriers and their escorts working together under a single commander. It is usually formed by the union of two or more Battle Groups and may easily number over fifteen ships.

Carrier Battle Group (CVBG). A CVBG has significant combat flexibility through the employment of the carrier air wing, surface combatants and support submarine(s). As such, the CVBG has a robust offensive and defensive capability in all warfare mission areas, with the possible exception of mine countermeasure warfare. A carrier's self-defense capability, exclusive of the air wing, is limited to point defense systems such as the NATO Sea Sparrow Missile System (NSSMS), Close-in Weapon System (CIWS) and various ECM/ECCM systems. The composition (and subsequent tactical or theater disposition) of the battle group is designed to take into account the strengths and limitations of all the various platforms (air, surface, subsurface, maritime patrol aircraft (MPA, if available)). The combined effect of all individual units working as a team provides the necessary offensive and defensive capabilities to accomplish a maritime mission. Typical CVBG composition would be: 1 CV/CVN; 1-4 CG/CGN; 2-5 DD/DDG/FFG; 1 AOE; 1-2 SSN.

The Maritime Action Group (MAG), developed by 6th Fleet, may consist of two or more surface ships (usually a cruiser and destroyers/frigates), an attack submarine, and an alert P-3 aircraft. This naval force has impressive intelligence and communications capabilities and can provide substantial AW, USW, SUW and STW capabilities. Teaming the MAG with other systems(e.g. AWACS) generates a more potent task force.

A Surface Action Group/Unit (SAG/SAU) is a naval formation of combatant ships which does not include an aircraft carrier. These would have cruisers (CGs), guided missile destroyers (DDGs), destroyers (DDs), and/or guided missile frigates (FFGs). This group lacks organic fixed-wing air support for USW and AW. Such a group would have USW helicopters aboard several ships for screening, targeting, and surveillance purposes. SAG/SAUs will range in number of ships and type of ships depending on the mission.

An Underway Replenishment Group (URG) is a group of supply ships capable of underway replenishment of naval ships at sea. These ships carry virtually any consumable or spare part. Their mission is to shuttle between port and the group they are supporting. Such ships have little self-defense capability and would be unescorted in only the most benign environments. It would be typical for the URG to be escorted by a SAG while en route to and from a ARG/CVBG. These Groups provide the sustainability to the front line vessels. Underway replenishment (UNREP) is accomplished via CONREP (connected replenishment or the horizontal movement of supplies between ships) and VERTREP (vertical replenishment, done by helo(s)). A CV/CVN may require replenishment every 2 ½ to 3 days (more frequently during periods of high sortie rates). Caught in a cycle of refueling-reloading-refueling in a 72 hour period, crew rest on these ships may occur only during transit times to/from rendezvous points. Typical URG composition might be: 1 AOE or 1 AO and 1 AE plus 1 AFS; 1-2 DDG/FFG. The figure below shows how shuttle ships resupply a battle group.



New Organization for Deployment and Combat

As the U.S. Navy has evolved from a “blue water” Navy to a joint fighting force, often conducting joint and combined operations in the littoral hot spots of the world, the traditional Naval Task Force structure is usually modified to become part of a Joint Task Force, usually specifically organized for a particular operation. Complete CVBGs, ARGs, SAGs and other units may be assigned to the Joint Task Force, as well as individual units assigned directly to the Joint Task Force. The Naval forces are normally assigned to two or more Joint Force Component Commanders, such as the Joint Force Maritime Component Commander (JFMCC) and Joint Force Air Component Commander (JFACC). It is within this Joint Force organization that most operations are conducted today.

Adapting to the changing world environment and operational requirements, the U.S. Navy is reorganizing itself under a new concept titled "Sea Power 21", implemented by a Global Concept of Operations that will provide widely dispersed combat power from platforms possessing unprecedented warfighting capabilities. The Global Concept of Operations disperses combat striking power by creating additional independent additional operational groups capable of responding simultaneously around the world. This increase of combat power is possible because technological advancements are dramatically transforming the capability of our ships, submarines, and aircraft to act as power projection forces, netted together for expanded warfighting effect. Under this concept, Naval capability packages will be readily assembled from forward-deployed forces. These forces will be tailored to meet the mission needs of the Joint Force Commander, complementing other available joint assets. They will be sized to the magnitude of the task at hand. As a result, our Navy will be able to respond simultaneously to a broad continuum of contingencies and conflict, anywhere around the world. The Global Concept of Operations will employ a flexible force structure that includes:

The Carrier Strike Group (CSG) provides the full range of operational capabilities. The CSG remains the core of our Navy's warfighting strength. No other force package comes close to matching their sustained power projection ability, extended situational awareness, and combat survivability. Advanced technologies sustain this operational impact, even as carrier groups become lighter. The CSG has fewer surface combatants and submarines than the traditional carrier battle group, an acceptable risk when operating against transnational enemies that pose a limited at-sea threat to our operating forces. Increases in carrier air wing striking power offset the transfer of surface and submarine striking power to expeditionary striking groups. Using precision ordnance, the carrier-based air wings can hit hundreds of aim points per day for extended periods, generating unprecedented combat power.

An Expeditionary Strike Group (ESG) consists of amphibious ready groups augmented with strike-capable surface warships and submarines. Traditional ARGs are composed of 2,300 Marines with associated armor, artillery, aircraft, and vehicles embarked on amphibious assault ships, amphibious transport docks, and dock landing ships. An ESG will include these forces plus an appropriate number of surface combatants and a submarine. The addition of Ticonderoga (CG-47)-class guided-missile cruisers and Arleigh Burke (DDG-51)-class guided-missile destroyers arms the ESG with the organic air defense, undersea warfare, and strike capability required for operating independently in low-to-medium threat environments, thereby increasing the fleet's responsiveness and strategic impact.

The Missile-defense Surface Action Group (MD-SAG) increases international stability by providing security to allies and joint forces ashore. There will soon be nine MD-SAGs. At least two units of each group are Aegis ships loaded with missile defense weapons. A third ship, also preferably an Aegis combatant, provides additional striking power and defensive protection to the group. These MD-SAGs also serve as independent crisis-response forces that emphasize the precision-attack capability of their Tomahawk missiles.

The Guided Missile Submarines (SSGN(SOF)) is a specially modified Trident submarine that will provide (starting around 2007) covert striking power from cruise missiles and the insertion of Special Operations Forces. Four nuclear-powered missile-firing submarines will be converted to carry as many as 154 Tomahawk missiles each,

and to embark special operations forces. These ships will also possess enhanced command-and-control connectivity.

The Combat Logistics Force (CLF) is a modern, enhanced-capability that sustains the widely dispersed fleet. The newer, more capable combat logistics force ships support the widely dispersed nature of future operations and the emphasis on sea basing of joint capabilities. These cargo and ammunition (T-AKE) and fast combat support (T-AOE) ships are crewed by Military Sealift Command civilian mariners, have upgraded material handling and transfer systems, and multipurpose convertible cargo holds for dry stores or ammunition. A heavy underway replenishment system doubles both delivery load weight and throughput rates of transfer, and an innovative electric-drive propulsion system provides increased electric power for auxiliary power needs.

These components of the fleet disperse and operate independently when facing transnational enemies, and combine to form expeditionary strike forces (ESF) that maximize offensive power and defensive protection when facing powerful regional actors that manifest serious anti-access capabilities.

The Global Concept of Operations will increase our striking power from the traditional 12 CVBGs, to 12 CSGs, 12 ESGs, and multiple MD-SAGs and SSGN(SOF)s. These groups will operate independently around the world to counter transnational threats and join together to form ESFs when engaged in regional conflict.

III. FUNCTIONAL OPERATIONAL AREAS

Traditional Functional Areas:

Battle space Dominance — Control of the sea, air and land environment where we conduct operations. Control means ensuring effective transition from open ocean to littoral areas, and from sea to land and back, to accomplish the full range of potential missions.

Power Projection — to apply combat power ashore as required (e.g., amphibious assaults, carrier air strikes, missile/gunfire support).

Strategic Deterrence — a mobile and survivable nuclear force; a critical leg of our nation's strategic triad.

Force Sustainment — the ability to move, by sea, those forces and supplies required to support our national policies and objectives.

Command, Control and Surveillance — capabilities to promote efficient joint and combined operations, exploitation of information systems to provide commanders with immediate intelligence.

Fundamental Warfare Tasks:

AW	air warfare
USW	undersea warfare

SUW	surface warfare
MIW	mine warfare
AMW	amphibious warfare
C2W	command and control warfare
STW	strike warfare

Supporting Warfare Tasks:

Command, Control and Communications (C3)

Ocean Surveillance (OS)

Intelligence, Surveillance and Reconnaissance (ISR)

Naval Special Warfare (NSW)

Logistics (LOG)

Space and Electronic Warfare (SEW)

New Functional Concepts: As part of the Navy's transition, three new fundamental concepts lie at the heart of the Sea Power 21 and the Navy's continued operational effectiveness: Sea Strike, Sea Shield, and Sea Basing. Sea Strike is the ability to project precise and persistent offensive power from the sea; Sea Shield extends defensive assurance throughout the world; and Sea Basing enhances operational independence and support for the joint force. Since the Navy is already in the process of transition there will be elements of these concepts apparent now. These concepts are discussed briefly below.

Sea Strike: Projecting Precise and Persistent Offensive Power. Sea Strike capabilities provide Joint Force Commanders with a potent mix of weapons, ranging from long-range precision strike, to covert land-attack in anti-access environments, to the swift insertion of ground forces. Information superiority empowers us to dominate timelines, foreclose adversary options, and deny enemy sanctuary. Sea Strike operations are fully integrated into joint campaigns.

Sea Shield: Projecting Global Defensive Assurance. Traditionally, naval defense has protected the unit, the fleet, and the sea lines of communication. Sea Shield takes us beyond unit and task-force defense to provide the nation with sea-based theater and strategic defense.

Achieving battle-space superiority in forward theaters is central to the Sea Shield concept, especially as enemy area-denial efforts become more capable. In times of rising tension, pre-positioned naval units can sustain access for friendly forces and maritime trade by employing evolving expeditionary sensor grids and advanced deployable systems to locate and track enemy threats. Speed is an ally as linked sensors, high-speed platforms, and improved kill vehicles consolidate area control, including the location and neutralization of mines via state-of-the-art technology on dedicated mine warfare platforms and battle group combatants. Mission-reconfigurable Littoral Combat Ships, manned and unmanned aviation assets, and submarines with unmanned underwater

vehicles will gain and maintain the operational advantage, while sea-based aircraft and missiles deliver air dominance.

Sea Shield provides the ability of naval forces to project defensive power deep overland, assuring friends and allies while protecting joint forces ashore. A next-generation long-range surface-to-air Standard Missile, modernized E-2 Hawkeye radar, and Cooperative Engagement Capability will combine to extend sea-based cruise missile defense far inland. This reinforces the impact of sea-based ballistic missile defense and greatly expands the coverage of naval area defense.

Sea Basing: Projecting Joint Operational Independence. Operational maneuver is now, and always has been, fundamental to military success. The extended reach of networked weapons and sensors tremendously increase the impact of naval forces in joint campaigns. Sea Basing serves as the foundation from which offensive and defensive fires are projected—making Sea Strike and Sea Shield realities. As enemy access to weapons of mass destruction grows, and the availability of overseas bases declines, it is compelling both militarily and politically to reduce the vulnerability of U.S. forces through expanded use of secure, mobile, networked sea bases. Sea Basing capabilities include providing Joint Force Commanders with global command and control and extending integrated logistical support to other services. Afloat positioning of these capabilities strengthens force protection and frees airlift-sealift to support missions ashore.

Sea Basing accelerates expeditionary deployment and employment timelines by pre-positioning vital equipment and supplies in-theater, preparing the United States to take swift and decisive action during crises. Strategic sealift is central to this effort. It remains a primary mission of the U.S. Navy and will be critical during any large conflict fought ashore. Moreover, we build our pre-positioned ships with at-sea-accessible cargo, awaiting closure of troops by way of high-speed sealift and airlift. Joint operational flexibility is greatly enhanced by employing pre-positioned shipping that does not have to enter port to offload.

IV. GENERAL INFORMATION

Ship Information. Listed in block format are a few ship "classes" for review. Note that there are not only significant differences in capabilities within the classes (e.g. Kidd DDG and Burke DDG class) but also there may be significant differences among the ships in each class. 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 a universal shorthand for warship types.

NAVAL SHIP DESIGNATIONS

CVN	Carrier (Nuclear Power)	LKA	Amphibious Cargo Ship
CV	Carrier (Conventional Power)	LPD	Amphibious Transport Dock
CG	Missile Cruiser	LST	Landing Ship, Tank
DD	Destroyer	LSD	Landing Ship, Dock
DDG	Missile (Anti-air) Destroyer	MCS	Mine Countermeasures Support Ship
FF	Frigate	MCM	Mine Countermeasures Ship
FFG	Missile Frigate	MHC	Mine Hunter, Coastal
PC	Patrol Craft	AE	Ammunition Ship
SSN	Submarine, Nuclear Attack	AFS	Stores Ship
SSBN	Ballistic Missile Submarine	AK	Cargo Ship
LCAC	Landing Craft Air Cushion	AO	Oiler
LCC	Amphibious Command Ship	AOE	Fast Combat Support Ship
LHD/ LHA	Amphibious Helicopter Assault	AS	Submarine Tender

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 administered by the Military Sealift Command (MSC) with civil service merchant marine crews and embarked naval detachments.

Aircraft Carrier (CV/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, conventional propulsion carriers endurance is 4-8 thousand nautical miles depending on speed). The embarked air wing helps provide protection to both the carrier and the escort ships. Limited ability to provide UNREP/VERTREP 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	8 active 1 being built	AW, 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: Kitty Hawk Class (1); Kennedy Class (1); Enterprise Class (1)				

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

VF (Fighter)	1 Squadron of 14 F-14 Tomcats	14

VFA (Attack)	2 Squadrons of 12 F/A-18 Hornets	24
VMFA(USMC Fighter/Attack)	1 Squadron of 12 F/A-18 Hornets	12
VAW (Early Warning)	1 Squadron of 4 E-2C Hawkeyes	4
VS (Sea Control)	1 Squadron of 8 S-3B Vikings	8
(now being used as tankers)		
HS (ASW)	1 Squadron of 3 SH-60F & 4 HH-60H	7
VAQ (Electronic Warfare)	1 Squadron of 4 EA-6B Prowlers	5
	TOTAL	**74**

Flight Deck Operations. The Carrier Air Wing Commander (CAG) 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 1.5 to 1.75 hours long, which enables 7-8 cycles in a 12-hour flying day—producing as many as 190 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 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. Aircraft maintenance and flight deck crew rest requirements remain the controlling factors.

Surface Combatants. Surface ships are versatile forces 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.

Cruisers (CG). The 27-ship Ticonderoga-class gas turbine 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 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. More recent R&D has been in the testing of the Aegis system as a Theater Ballistic Missile Defense (TBMD) system. Modification to the standard missile (SM-2 BLK IVA) and the Aegis software may yield a lower tier or area defense capability. The upper tier of the Navy's sea-based TBMD program is building upon on-going efforts to develop a lightweight exo-atmospheric projectile (LEAP) that will provide a high altitude, long range interceptor for theater defense. A towed array sonar and LAMPS MK III helos provide a robust ASW capability. Tomahawk vertical launch systems provide land attack options on the later platforms. 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 new threat upgrade (NTU) combat systems gives the Kidd Class DDGs a very strong AW capability approaching that of the AEGIS cruiser.

Destroyers/Frigates (DD/DDG/FFG). The Arleigh Burke (DDG-51) class was designed as a replacement for the Adams and Coontz class guided missile destroyers, but has become the replacement for the Leahy and Belknap class cruisers. Although less capable and smaller than the Ticonderoga class cruisers, its SPY-1D Aegis Automatic Data Action System (the

ship's combat system), greatly increases the firepower and capability of the surface force. The Burke-class primary mission is AW with extensive USW and SUW capabilities.

The Spruance class DD (24 ships) is primarily an USW platform upgraded with tomahawk missiles to give it a strike warfare and SUW role. Some ships in the class are equipped with vertical launchers and can carry up to 60 tomahawk missiles. The Kidd class DDG (1 ship) has the New Threat Upgrade (NTU) SAM system in lieu of tomahawk missiles and is a very capable AW platform.

The Oliver Hazard Perry Class FFG (28 ships) still in the active fleet serve as escorts, in drug-interdiction, or maritime interdiction operations (blockades). They were built to escort amphibious readiness groups, underway replenishment groups and convoys with particular emphasis on AW and USW. At sea, FFG's require refueling every 3 days to maintain fuel inventory above 75%.

Ship Type	Class	No.	Warfare Missions	Equipment
CG-47 Cruiser	TICONDEROGA 9,600 tons, 563 ft 55 ft beam, 30+ knots 360 crew	27	AW, EW, SUW, CCC, USW, STW	VLS (some) for standard missiles, Tomahawk and ASROC, Harpoon (canisters), 5"/54 cal (two), CIWS, torpedo tubes, ESM/ECM suite, LAMPS. (2)
DDG-51 Destroyer Guided Missile	BURKE 8300 tons, 466 ft 59 ft beam, 30+ kts 323 crew	38 built or authorized	AW, SUW, USW, STW, EW, CCC	VLS for Tomahawk, ASROC, standard missiles, Harpoon (canisters), 5"/54 cal gun, CIWS, torpedo tubes, ESM, LAMP (2) (DDG-72 and later)
DD-963 Destroyer	SPRUANCE 7800 tons, 563 ft 55 ft beam, 33 kts 380 crew	24	USW, SUW, STW, EW, CCC	Some VLS for Tomahawk, NSSMS, CIWS, 5"/54 cal gun (two), torpedo tubes, Harpoon, LAMPS (2), (canisters).
DDG	KIDD (same as Spruance)	1	(same as Spruance) plus AW	MK 26 missile launchers for standard missiles. Other same as Spruance. Four originally built for Iran.
FFG Frigate Guided Missile	OLIVER HAZARD PERRY 4100 tons, 445 ft, 45 ft beam, 29 kts, 300 crew	28 active 10 reserve	AW, SUW, USW, EW, CCC	76 mm gun, LAMPS (2), CIWS, Harpoon and standard missiles.

Submarines

Attack Submarines (SSN) are capable of providing long term self-sustained, 24 hr/day covert I&W (Indication and Warning) for about 60 days without relief. SIGINT, ELINT, COMINT gathering capability limited only by food on board. They have reliable satellite UHF (SHF on some) communications. They can conduct USW/SUW with MK48 ADCAP torpedo or Harpoon against surface ships and can conduct no warning TLAM (Tomahawk Land Attack Missile) strikes. Submarines have no weapon to use against aircraft. One submarine is arguably the best platform in detecting another submarine in the open ocean. An SSN in support of a CVBG does this, among other missions. SSNs are the best covert

minelaying platform in the Navy. The SSN 751 and later have best moored mine detection sonar outside dedicated mine warfare forces. major limitation of the SSN is the inability to rearm or change initial weapons load-out at sea. There are about 53 total fast attack SSNs as of July 2003.

Ballistic Missile Submarines (SSBN). The Ohio Class SSBN is the only class of ballistic missile submarine left in service. These boats and their missiles provide an important leg of the strategic triad. They typically operate for 90 day patrols and rotate crews between patrols. The last 10 boats of the class are configured for the Trident D-5 missile.

Ship Type	Class	No.	Warfare Missions	Equipment
SSBN ballistic missile	OHIO 18,700 tons, 560 ft 42 ft beam, 20+ kts 155 crew	18*	USW, SUW, STW, MIW	24 tubes Trident missiles, 4 torpedo tubes
SSN-688 attack	LOS ANGELES 6,900 tons, 360 ft 33 ft beam, 20+ kts 133 crew	51	USW, SUW, STW, MIW	Tomahawk, MK48 torpedoes
SSN-774 attack	VIRGINIA 7,800 tons, 377 ft 34 ft beam, 25+ kts 113 crew	4 authorized	USW, SUW, STW, MIW	Tomahawk, MK48 torpedoes, mines, unmanned undersea vehicles
SSN-21	SEAWOLF 9,150 tons, 353 ft 40 ft beam, 25+ kts 133 crew	2 1 under construction	USW, SUW, STW, MIW	Tomahawk, MK48 torpedoes, mines
*Four Tridents will be converted to SSGNs, with the first starting conversion in 2003 for a 2007 introduction to the fleet.				

Amphibious Warfare

Amphibious warfare ships provide transportation of landing forces from the embarkation area and launches the aircraft and landing craft for the amphibious operation. The four types of amphibious ships are well-deck and flight-deck configured. This configuration enables putting Marine forces ashore from over the horizon (OTH) using helicopters and LCACs, thereby protecting the identity of the landing sight until the last possible moment and reducing the danger to the amphibious ships. The LHA and LHD classes are large deck ships which can operate helos, AV-8s, V-22s (when fielded), LCACs, and surface craft. They carry large numbers of troops (1000+) and have large hospital capability. LSD and LPD class ships have much smaller flight decks for helos. They are the primary vehicle and heavy equipment carrying ships. An ARG consists of 3-5 Navy ships with embarked Marine Expeditionary Unit - Special Operations Capable (MEU(SOC)) of approximately 2,300 Marines. To date, deficiencies in the ability to accommodate vehicles have restricted amphibious shipping to being able to lift 1.8 MEB -equivalents vice the 2.5 MEB-equivalents required. The gap is being filled by NRF shipping until the arrival of the new LPD-17.

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	5	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	6 (1 under construction)	AMW	Same as Tarawa, can take AV-8B, three LCAC, Outstanding C4I for AMW. 8/50 cal gun.
LSD Dock Landing Ship	WHIDBEY ISLAND 15,800 tons, 609 ft 84 ft beam, 20+ kts 340 crew, 340 troops	12	AMW	CIWS, Helo capable, 4 LCAC capable, LCU also.
LPD Amphibious Transport Dock	AUSTIN 17,000 tons, 570 ft 84 ft beam, 21 kts 388 crew, 900 troops	11	AMW	CIWS, 3"/50 cal guns, large flight deck, large troop capacity. All vessels 21-30 years old.
LPD	SAN ANTONIO 24,900 tons, 684 ft 105 ft beam, 22+ kts 495 crew	12 planned	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 (7th and 2nd), helo capable except for CH-53.
AGF	CORONADO 14,650 tons, 520 ft, 84 ft beam, 20 kts, 499 crew	2	AMW, C3	CIWS, Flagships (3rd & 6th Fleets)
Also: ANCHORAGE LSD (5) HARPERS FERRY LSD (4) same as WHIDBEY ISLAND LSD except only 2 LCAC Note: LCAC - 200 tons, 88 ft, 47 ft beam, 40 kts @ 60 ton max payload, range 200 miles @ 40 kts LPD-17 Class -Proposed new class of ship as functional replacement for four older classes of ships (LST, LSD, LPD, LKA). Crew 495, troops 720, 23,000 tons, 684 ft. Navy plans to build 12.				

Auxiliary Vessels

Auxiliary vessels sustain the fleet at sea. The typical ship will carry 30-90 days worth of supplies and 3-10 days of fuel before fuel state falls below 75% (trigger point for refueling), depending upon the size of the ship. Combat Logistics Ships sustain the forward deployed ships on station by providing food, ammunition, fuel, and supplies. The combat logistics force consists of oilers (AO), Combat Stores ships (AFS), ammunition ships (AE), and a combination (AOE). Combat Support Ships provide the invaluable repair services to ships in remote places of the world. This fleet includes tenders that provide in-theater repair capability. Salvage/tug vessels (ATF/ARS/ATS) allow for safe removal of damaged vessels from a war zone without having to sacrifice a second combatant to provide towing services.

A number of Auxiliary vessels operate regularly under the auspices of the Naval Fleet Auxiliary Force. This fleet includes oilers (TAO) (11), combat stores ships (TAFS) (8), surveillance ships (TAGOS) (12), maritime propositioning ships (TAK) (3 squadrons each carrying 30 days worth of equipment for one MEB - equivalent), and fleet ocean tugs

(TATF). These ships are mostly manned by civilian crews with a naval detachment embarked. The NFAF is USG-owned, administered by MSC, with individual ship OPCON to the specific naval commander being supported.

Ship Type	Class	No.	Warfare Missions	Equipment
AOE Fast Combat Support Ship	SACRAMENTO 53,000 tons, 795 ft 107 ft beam, 30+ kts 600 crew	4	Combat Logistics (ammo, supply, & petroleum products)	NSSMS, CIWS, Two CH-46 Helos, 190,000 barrels of oil (8.5 million gallons), 2,150 tons ammo, 500 tons dry stores, 250 tons frozen stores.
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)	NSSMS, CIWS, 25mm gun, (2) CH-46 Helos, 150,000 barrels oil, 1800 tons ammo, 400 tons dry stores, 250 tons frozen stores.
AE Ammunition Ship	KILUAUEA 18,088 tons, 564 ft, 81 ft beam, 20 kts, 383 crew	1	Ammunition Replenishment	CIWS, deliver ammo via helo or ship-ship cable 4 operated by MSCs.
AO Fleet Oiler	CIMARRON 37,840 tons, 708 ft, 88 ft beam, 20 kts, 333 crew	3	Petroleum Product Replenishment	CIWS, 180,000 barrels fuel, 600 tons cargo ammo, increasingly operated by MSC.
Also: Suribachi Class AE (3), Sirius Class T-AFS (3).				

Ship Type	Class	No.	Warfare Missions	Equipment
AS Submarine Tender	L.Y. SPEAR 23,000 tons, 645 ft 85 ft beam, 20 kts 1325 crew	4	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

Countermeasures

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 all provisions for all the armed services came via sea during Desert Shield/Storm. There are three types of mine countermeasures operations:

Minehunting - methods to determine where (and just as important where not) the mines are located. Usually by SONAR or visual means.

Minesweeping - active measure to counter mines. Mines may be: contact, acoustic, magnetic, seismic, pressure or a combination thereof. Sweeping may result in the neutralization of some mines. 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 countermeasures 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, 32 sonar to be back fitted. Mechanical, acoustic and influence sweep gear.
MHC Coastal Hunter	OSPREY 840 tons, 188 ft 36 ft beam, 15 kts 45 crew	12	MIW	Smaller version of MCM AN/SLQ-48 vehicle AN/SQQ-32 No sweep gear to date.

Aircraft Type	**Warfare Missions**
MH-53E SEA DRAGON	MIW. AN/AQS-14 sonar (AN/AQS-20 in future), MK 103 MOD 2 mechanical sweep, MK 104 MOD 3 acoustic sweep, MK 105 MOD 2 magnetic sweep. GPS. Can sweep or search large area in relatively short time. Seven C-5A/B and eight C-141B required to airlift a six plane AMCM squadron. Need to give up space on air capable platform to support forces. Currently <u>not</u> capable of night operations, under development.

Navy Aircraft

Aircraft Type	Warfare Missions/Armament
F/A-18	Missions: STK, MIW, AAW, ASUW Arms: Sparrow, Sidewinder, Harpoon, HARM, AMRAAM, PGMs, MK-80 series bombs, 20mm cannon, mines, cluster munitions
F-14 Tomcat	Missions: AAW, STK, TARPs capable Arms: Phoenix, Sparrow, Sidewinder, 20 mm cannon, PGMs, MK-80 series bombs
EA-6B Prowler	Missions: C2W Arms: HARM, jamming pods
S-3B Viking	Missions: ASW, ASUW, MIW, TNK, C2W, CCC Arms: MK-46 torpedo, MK-80 series bombs, mines, rockets, cluster munitions, Harpoon, aerial refueling store, sonobuoys, AIRBOC
E-2C Hawkeye	Missions: AEW, CCC Arms: None
C-2A Greyhound	Mission: COD, delivery to/from carrier Arms: None
SH-60B Seahawk LAMPS III	Missions: ASW, ASUW, SAR Arms: MK-46 torpedo, Penguin Hellfire Missiles, sonobuoys, and door, gun, radar, ESM
SH-60F Seahawk	Missions: ASW, SAR Arms: MK-46 torpedo, sonobuoys, dipping sonar
HH-60H Seahawk	Missions: SAR, VERTREP, MIO Arms: Door gun, Hellfire missile
MH-53 Sea Dragon	Mission: MCM Arms: mine sweeping equipment
CH-46 Sea Knight	Missions: VERTREP, LOG Arms: None
P-3C Orion	Missions: ASW, ASUW, MIW, C2W, CCC Arms: MK-80 series bombs, torpedoes, mines, Harpoon, Maverick, sonobuoys, cluster munitions
EP-3 Aries III	Missions: C2W Arms: None
E-6A TACAMO (Modified 707)	Missions: Strategic Comm. Arms: None
C-9B Skytrain	Missions: Transport Arms: None

V. NAVAL RESERVE

Organization: The Naval Reserve is organized into two general types of units:

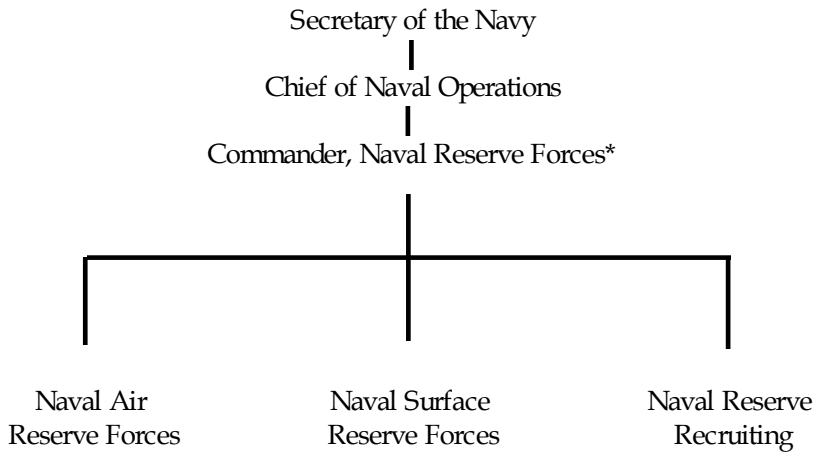
Commissioned Units: Reserve units, with organic equipment, such as aircraft squadrons, Naval Reserve Force (NRF) ships, cargo handling battalions, mobile inshore undersea warfare units, and mobile construction battalions. These units are tasked to deliver a complete operational entity to the operating 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. 32 percent of Selected Reserve personnel are assigned to commissioned units.

Augmentation Units: 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.

Roles, Missions, and Functions: The function of the Naval Reserve is to provide trained and qualified personnel and units to provide swift augmentation to the Navy. The Naval Reserve is composed of personnel in the Selected Reserve, the Individual Ready Reserve, and the Retired Reserve. The Selected Reserve is the primary source of units and personnel for immediate expansion of the Navy. The Naval Reserve is an integral part of the Navy's total capability across the full spectrum of conflict and is available for crisis response and contributory support.

Naval Reserve Command and Control



*The Commander, Naval Reserve Forces also serves as Director, Naval Reserve and as Chief of Naval Reserve

U.S. ARMY*

I. Mission and Purpose

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 2001

The Army contributes forces to combatant commands to conduct prompt and sustained combat operations on land. The objective of Army forces is land force dominance- defeating adversary land forces, seizing and controlling terrain, and destroying the adversary will to resist. The Army has the capability to bring conflict to decisive, lasting resolution. The Army, supported by the Air Force and Navy, has forcible entry capability that allows it to conduct land operations anywhere in the world. The Army also can achieve prompt and sustained land dominance across the spectrum of conflict. It concludes conflict decisively to achieve national political and military objectives.

The Army's unique, sustained land power capabilities offer the National Command Authorities and combatant commanders more options for engagement, crisis response, and warfighting.

U.S. Army Posture Statement 2003

America's military is the most powerful in the world, and *The Army* remains the most respected land power to our allies, the most feared ground force to those who would threaten the interests of the United States. For over 227 years, the American Soldier has been fulfilling the Army's non-negotiable contract with the American people to fight and win our nations wars-decisively.

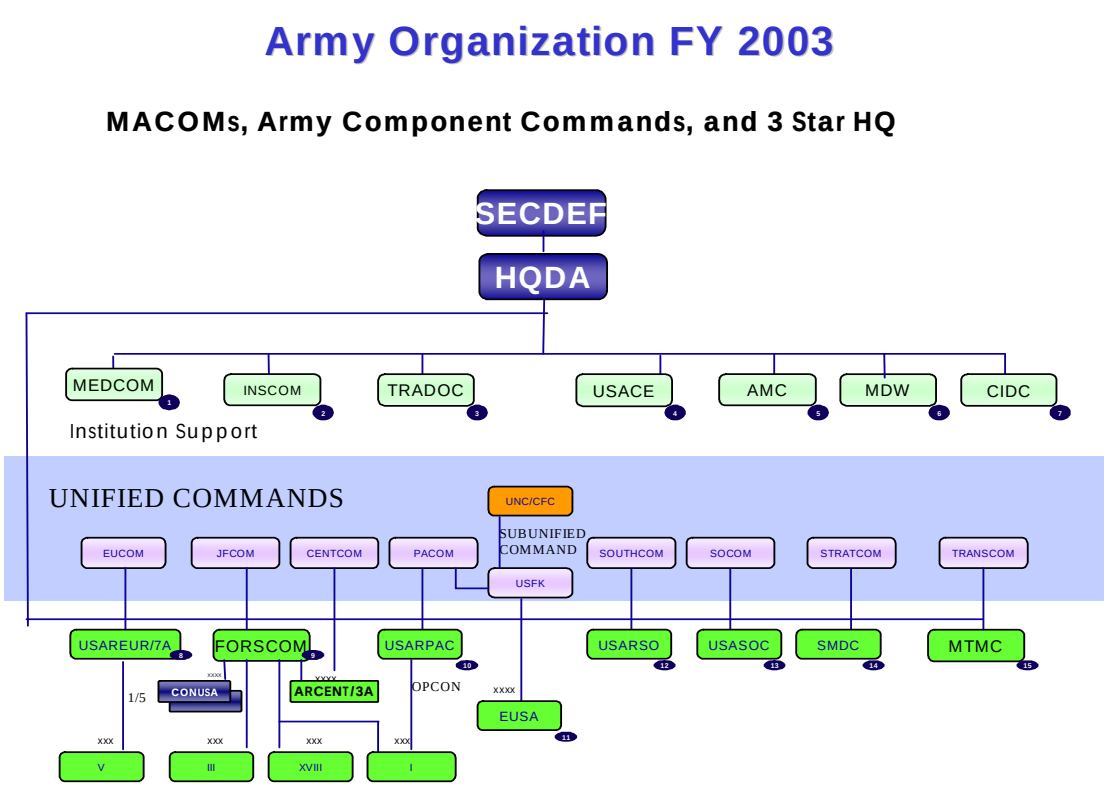
The Army is in the midst of one of the most profound periods of transformation in our history. In October 1999, we unveiled our vision for future-"Soldiers on point for the Nation, transforming this, the most respected Army in the world, into a strategically responsive force that is dominant across the full spectrum of operations.

The attacks against our nation and the ongoing Global War on Terrorism (GWOT) validate the Army's Vision-People, Readiness, and Transformation- and our efforts to quickly change into a more responsive, more deployable, more agile, more versatile, more lethal, more survivable, and more sustainable force. The Stryker Brigade Combat Teams-our Interim Force,- will bridge the gap between our lethal heavy forces and our rapidly deployable light forces even as they prepare for way for the arrival of the Objective Force.

***The source of this information are direct excerpts from Army Employment Data, May 2003, U.S. Army War College, Carlisle Barracks, Pennsylvania as revised by John A. Bonin, COL, USA (Retired), Concepts and Doctrine Office. While most of the information has been copied verbatim, edits to the text have been made for this audience.**

II. Army Organization and Concept of Operations

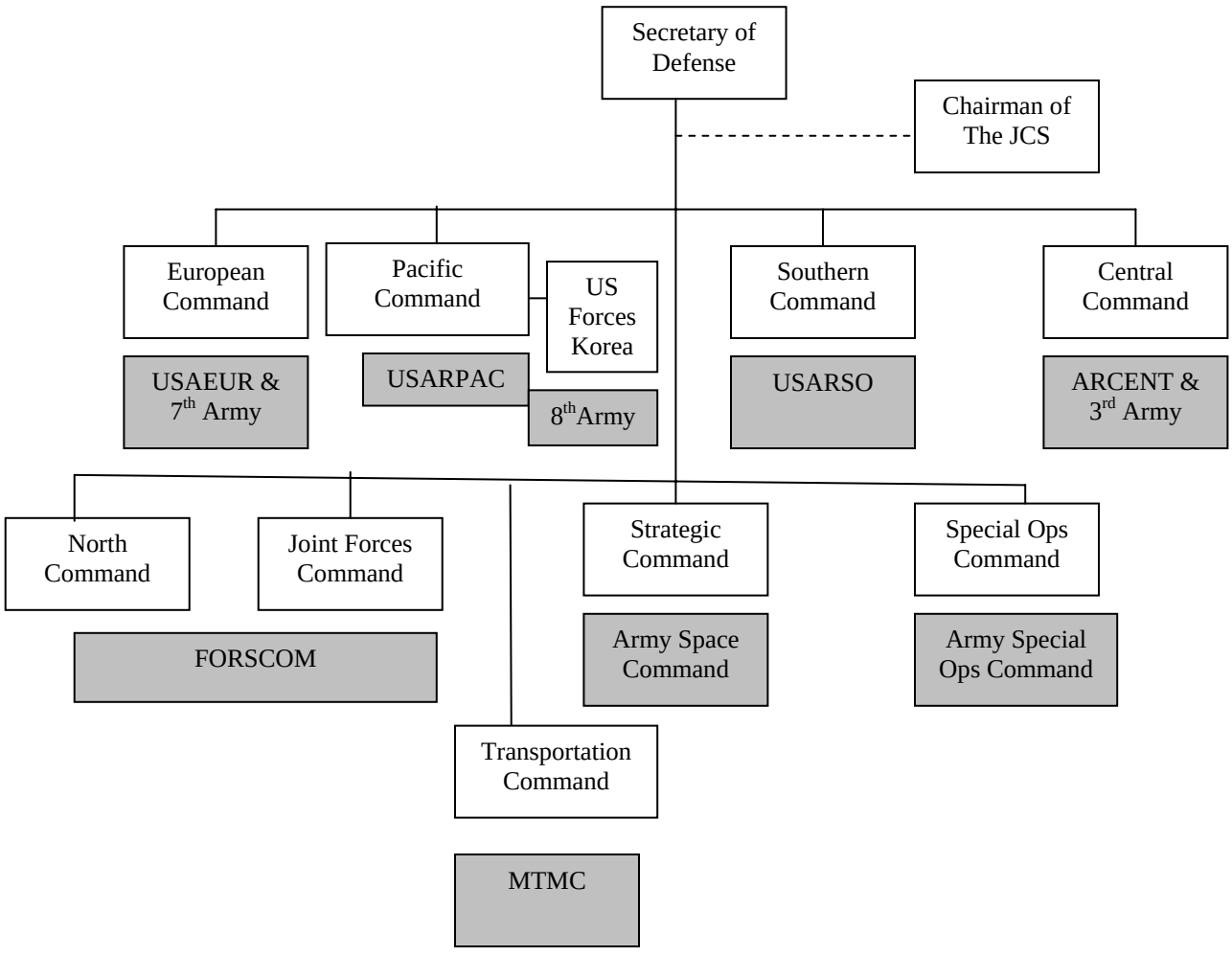
There are two branches to the US military chain of command. Subject to the authority, direction, and control of the Secretary of Defense and the provisions of Title 10 United States Code, the Department of the Army operates under administrative command of the Secretary of the Army with the advice of the Chief of Staff. In carrying out its functions as prescribed in DOD Directive 5100.1 the U.S. Army currently has fifteen Major Commands and seven other three star level commands. Nine of these commands are also Army component commands of unified or subunified joint commands. See Figure 1.



In January 2003, the Army announced its plan to transform Major Commands and Field Operating Agencies. MEDCOM, INSCOM, MDW, and CIDC will become Direct Reporting Units (DRU) to designated Headquarters DA staff principals. In addition, The Network Enterprise Technology Command (NETCOM) created out of FORSCOMs former Army Signal Command will also be a DRU.

I. COMBATANT WARFIGHTING UNITS

U.S. Unified Commands and Army Components. Currently nine Unified Combatant Commands exist. Their missions are assigned by the Secretary of Defense with the advice and counsel of the Chairman of the Joint Chiefs of Staff. Most Unified Commands consist of Army, Navy, Air Force, and Marine Corps components. The Major Army Command (MACOM) assigned as the Army component of its respective Unified Command are shown in Figure 2. The Third US Army is a subordinate element of Forces Command as well as being the Army component of the US Central Command. The US Army Space Command is an element of the US Army Space and Missile Defense Command as well as being the Army component of the new US Strategic Command (now also responsible for space). All these units are trained and equipped for combatant warfighting missions---they may also be assigned operations other than war during peace and periods of conflict.



The specific missions and organizational structure of each are presented in the following nine subsections:

- **US Army Europe and Seventh US Army (USAREUR)**

Mission

- Responsible for defense of US interests in Western Europe
- 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 US Central Command (CENTCOM) missions.

Organization

- Major Army Command and Army Service component of US EUCOM
- Commands US Army units in Germany, Italy, England, and the Netherlands
- Includes V Corps, 1st Armored Division, 1st Infantry Division, Southern European Task Force (with the173d Airborne Brigade (Separate), 21st Theater Support Command, and Area Support Groups

- **US Army South (USARSO)**

Mission

- Command and control Army Forces in the US Southern Command
- Provide theater support for US Army Forces and Headquarters USSOUTHCOM as directed by USCINCSO
- Plans, programs, and provides US Army support for USCINCSO's regional security strategy.

Organization

- Major Army Command and Army Service component of US Southern Command
- Organized around major subordinate elements which consist of forward stationed aviation and signal units, as well as the Ft. Buchanan, PR Garrison.
- USARSO HQ will move to Ft Sam Houston in 2004 and become a subordinate of FORSCOM.

- **US Army Pacific (USARPAC)**

Mission

- Serve as the Army Service Component Command to Combatant Commander, US Pacific Command 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 US Pacific Command (USPACOM)
- 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

- Major Army Command

- Subordinate Units: 25th Infantry Division (Light); 172d Infantry Brigade (Separate) and US Army Garrison, Alaska; US Army Japan and 9th Theater Support Command; US Army Chemical Activity Pacific; 196th Infantry Brigade (Training Support Pacific); and 9th U. S. Army Regional Support Command.

- **Eighth US Army (EUSA)**

Mission

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

Organization

- US Major Army Command and Army Service component 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; 6th Cavalry Brigade (Air Combat); 17th Aviation Brigade; 18th Medical Command; and the 19th Theater Support Command.
- Largest component of the US Forces Korea which also includes US Air Forces, Korea (7th Air Force), and US Naval Forces Korea
- Commands assigned USAR units

- **US 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
- Responsible to NORTHCOM for planning the land defense of Continental United States (CONUS) and the combined Canada - United States defense of Canada,
- Provides support to civil authorities in domestic emergencies
- Provides support to federal, state, and local law enforcers in Homeland Security.

Organization

- Major Army Command and Army Component of US Joint Forces Command and provides Third US Army as Army component to US Central Command
- Provides support to NORTHCOM when designated.
- FORSCOM commands assigned active Army units in CONUS, the Continental U.S. Armies (CONUSAs), and when federalized Army National Guard units. Commands US Army Reserve Command and Army Reserve units in CONUS, Puerto Rico, and Virgin Islands.

- The major subordinate commands of FORSCOM are; three Army corps, two CONUSAs, the US Army Reserve Command, and Third U.S. Army. Major subordinate commands and locations:

Corps:	I (COCOM PACOM)	Fort Lewis, WA
	III	Fort Hood, TX
	XVIII	Fort Bragg, NC
CONUSAs:	First Army	Fort Gillem, GA
	Fifth Army	Fort Sam Houston, TX
Third U.S. Army (ARCENT) Army Service component of USCENTCOM		Fort McPherson, GA
USA Reserve Command (USARC)		Atlanta, GA

Other deployable FORSCOM Echelons Above Corps (EAC) units include:

7th Trans Group (Composite) - Ft. Eustis
32d Air and Missile Defense Command-Ft. Bliss
11th and 35th ADA Bdes - Ft. Bliss
52d Explosives Ordnance Group- Ft. Gillem, GA
49th Quartermaster Group Ft. Lee, VA.

- **Third US Army and US Army Central Command (USARCENT)**

Mission

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

Organization

- Designated US Army Forces Central Command (USARCENT) as the Army Service component command of US Central Command (USCENTCOM).
- Under the combatant command (COCOM) of USCENTCOM
- Command and control of assigned and attached US Army forces in wartime as in Operation Desert Storm
- Major subordinate, less COCOM, of US Army Forces Command
- Has as permanent subordinates, ARCENT-Kuwait, Saudi Arabia, and Qatar.

- **US Army Space Command (USARSPACE)**

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 US Army Space and Missile Defense Command (USASMDC), the Army Space Command 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.

- **US Army Special Operations Command (USASOC)**

Mission

- Provide trained and ready Special Forces, Ranger, Special Operations Aviation, Psychological Operations and Civil Affairs Forces to Warfighting Commanders-in-Chief, 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 USSOCOM, 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
- Major Army Command 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, US Army Civil Affairs and Psychological Operations Command, 160th Special Operations Aviation Regiment, 75th Ranger Regiment, and US Army Special Operations Support Command.

- **US Army Military Traffic Management Command (MTMC)**

Mission

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

Organization

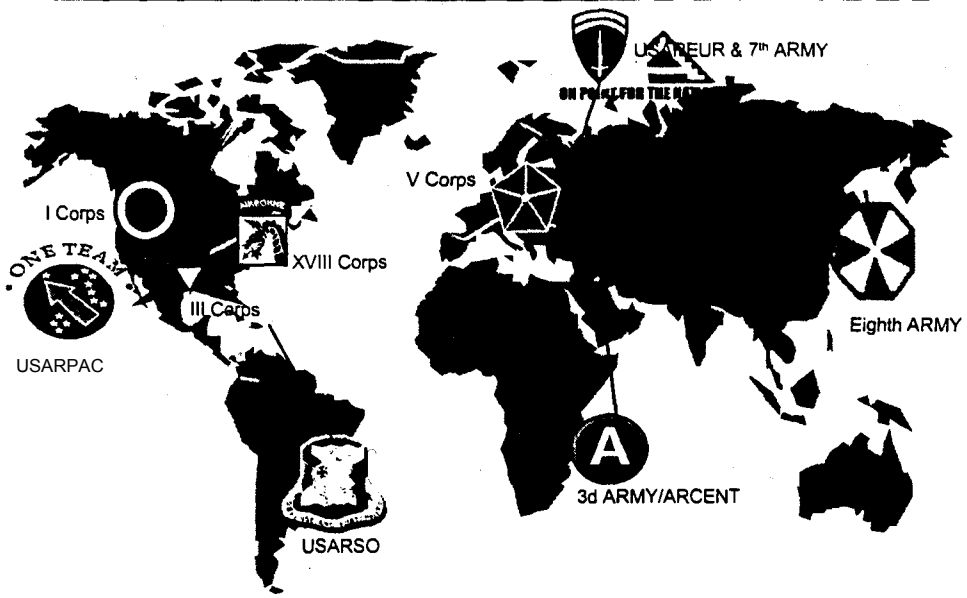
- A jointly-staffed Major Army Command and Army component of the US Transportation Command

- Subordinate overseas area commands in Europe and the Pacific – active and reserve component elements located worldwide.

· **Network Enterprise Technology Command (NETCOM)** Formerly Army Signal Command (Ft. Huachuca) 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.

5th Signal Command-Germany
1st Signal Brigade-Korea
516th Signal Brigade-Hawaii
160th Signal Brigade-Middle East (AY04)
11th Signal Bde - Ft. Huachuca; 93d Signal Bde -Ft. Gordon, Ga

LOCATIONS OF MAJOR U.S. ARMY COMBAT HEADOI JARTFRS



U.S. Army Theater Forces

ARMY SERVICE COMPONENT COMMAND

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

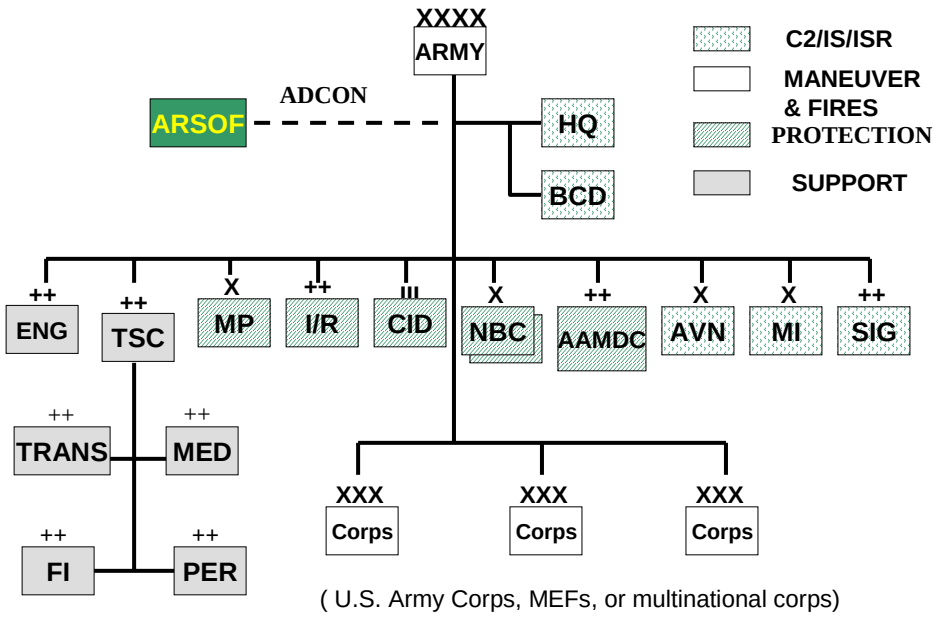
- The ASCC is responsible to the unified commander (and selected subunified commanders) for the tactical employment of assigned Army forces.
- The ASCC support responsibility is to organize, equip, train, maintain, and logistically sustain Army forces.
- The organization of an ASCC is not fixed, but tailored to meet theater requirements.
- The commander of the ASCC (COMASCC) is normally assigned territorial control over the COMMZ and may be designated the Joint Rear Area Coordinator (JRAC).
- Army component forces'in a theater are place under the operational command 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 support to other services under Wartime Executive Agent Responsibilities.

- During Desert Shield/Desert Storm, 3rd Army/ARCENT totaled over 333,000 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 185,000 USA, 62,000 USMC and some 26,000 coalition forces. Of these 56,000 were EAC troops.
- There are five ASCCs: USAREUR, USARSO, EUSA, 3d ARMY/ARCENT, and USAREUR & 7th ARMY.

Organization

The organization of the ASCC is dependent upon such planning considerations as the overall mission, the stage of theater development, and the number of combat units deployed or projected to be deployed. Mission requirements determine the allocation of major maneuver elements-corps and divisions (including requisite combat, combat support and combat service support (CSS) units), and are the primary factors in any decision to expand the number of operational echelons. Additionally, operational-level tasks for the Army Force (ARFOR) of a joint force will determine the theater protective elements (Army Air & Missile Defense Commands, MP Bdes, Internment/Resettlement Command/Brigade, CID Group, and NBC Brigades); theater logistical and personnel support elements (Theater Support Command, Engineer Command, Transportation Command, Personnel Command, Medical Command, and Finance Command); Theater Army Special Operations elements (SF Groups, Rangers, Special Ops Aviation, Civil Affairs, and PSYOPS); and theater command & control, information superiority, and intelligence, surveillance, and reconnaissance units committed to the theater (Theater Aviation Brigade, Theater MI Brigade, Theater Signal Command, Battlefield Coordination Detachment, Army Space Elements).

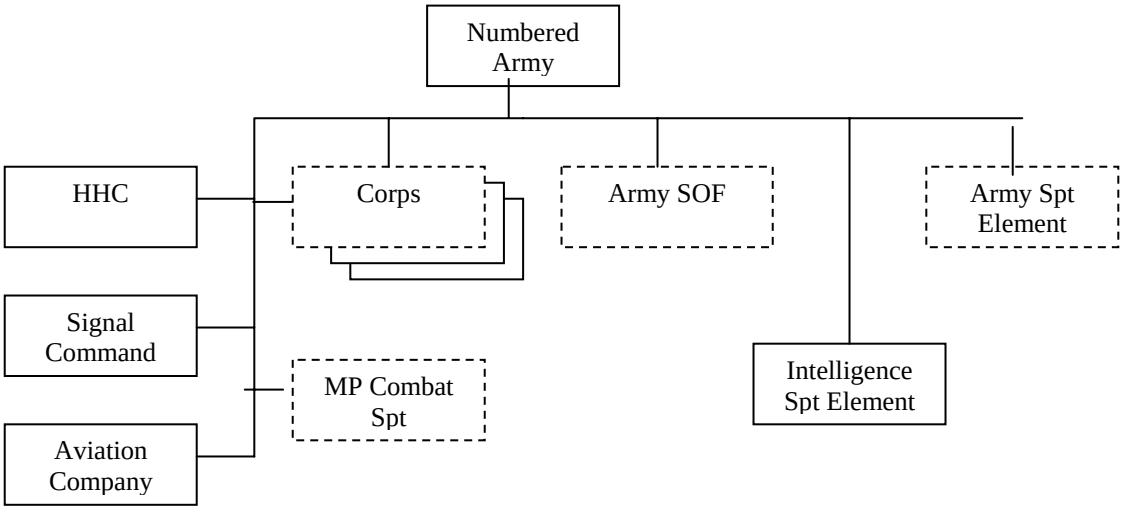
ASCC WITH MULTIPLE CORPS FOR A DECISIVE DEFEAT



(U.S. Army Corps, MEFs, or multinational corps)

NUMBERED ARMY

The numbered Army is primarily an operational (as opposed to support) headquarters designed to control from two to five Corps. Its commander must have an operational-level perspective. The COMASCC, with the concurrence of the Combatant Commander, establishes a numbered Army, when the command and control environment exceeds the capability of a Corps headquarters. A numbered Army may be used when required to conduct a major complex operation, when the ground forces are widely dispersed geographically or when a political situation requires a larger U.S. Army operational headquarters. The administrative and support activities of the numbered Army are much less than those of the ASCC, and the ASCC would continue to focus on sustainment and support functions. A numbered Army is a flexible organization as shown below:



ARMY CORPS

Corps' are the largest tactical units in the U.S. Army, the instruments by which higher echelons of command conduct maneuver at the operational level. Corps are tailored for the theater and the mission for which they are deployed. For this reason, there is no standard organizational structure of a corps. Once tailored, they contain all the organic combat, combat support, and combat service support capabilities required to sustain operations for a considerable period.

Corps may be assigned divisions of any type required by the theater and the mission. They possess support commands and are assigned combat and combat support organizations based on their needs for a specific operation. Armored cavalry regiments, field artillery brigades, engineer brigades, air defense artillery brigades, and aviation brigades are the nondivisional units commonly available to the corps to weight its main effort and to perform special combat functions. Separate infantry or armored brigades may also be assigned to corps. Signal brigades, military intelligence brigades, military police brigades, civil affairs brigades, chemical brigades, and psychological operations battalions are the usual combat support organizations present in a corps. Other special operations forces may support corps combat operations as required, particularly when the corps is conducting an independent operation. The combat service support organizations of the corps are the personnel group, the finance group, and the corps support command.

The critical roles of the corps include:

- Planning and conducting operations in consonance with other elements of the joint force to achieve campaign objectives.
- Integrating available Air Force, Navy, and Marine combat, combat support, and combat service support into tactical operations. This includes joint efforts in intelligence, target acquisition, target attack, electronic warfare, SEAD, and CSS.
- Collecting intelligence, anticipating enemy activities and intentions, and planning at least 72 hours into the future.
- Planning and conducting deep and rear operations to support the close operations.
- Planning the employment of tactical nuclear weapons in support of campaign objectives.
- Planning and conducting effective deception operations in consonance with the higher echelon's deception plan.

The planning and execution of tactical-level battles is the major role of the corps. The corps commander must clearly understand the intent of the commanders of the next two echelons above him in order to plan and execute battles that will constitute lead to the achievement of the operational objectives. The corps must simultaneously conduct the close, deep, and rear operations as well as plan at least 72 hours into the future.

When planning into the future, the corps commander must identify those critical operations that assist accomplishment of the principal operations (main and supporting attacks, commitment of the reserve, etc.) that are best controlled at corps level. These collateral operations consist of major activities that must be conducted within the scope

of any combat operation. Collateral operations are assigned as specific tasks in the operation order and are keyed to the commander's overall concept of operation. Although they require their own internal concept of operation, these concepts must be consistent with the corps commander's overall concept of operation. Examples of possible collateral operations are intelligence, counterfires, deep fires, J-SEAD, deception, and nuclear/chemical fires.

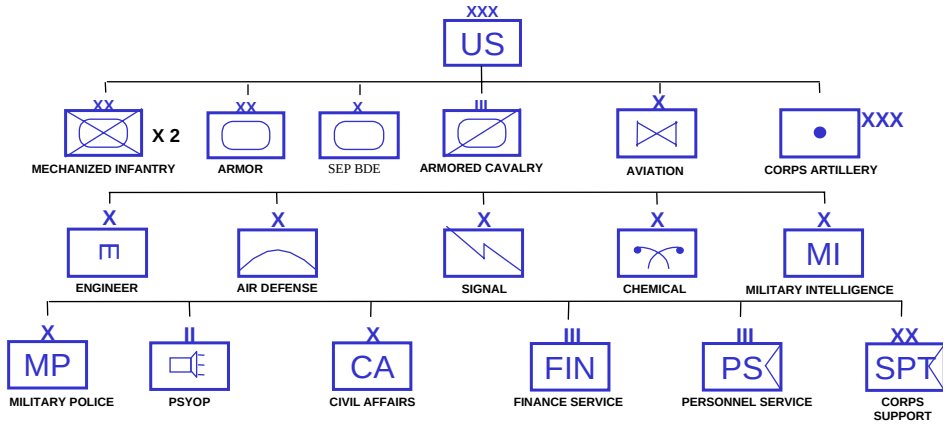
In a contingency operation, a corps headquarters may function as the land component headquarters of a joint task force or as the joint task force headquarters. In such cases, the corps will have the responsibility for both operational (campaign) and tactical campaign. The centerpiece of the corps' operational responsibilities is to participate in development of a joint campaign plan.

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 fight as part of multinational combined forces in any mid- to high-intensity theater.

Corps size may vary with the task organization. For Operation Just Cause in Panama in 1989, XVIII Corps had only 12,000 troops, while for Desert Shield/Desert Storm, XVIII Corps 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 four corps: I, III, V, and XVIII.

A "HEAVY" CORPS



ORGANIZATION TAILORED TO MEET MISSION

DIVISIONS

Divisions are standard combined arms organizations which may be tailored IAW conditions of METT-TC. They are capable of performing any tactical mission and are largely self-sustaining. Divisions are the basic units of maneuver at the tactical level and

perform major tactical operations for the corps. Divisions occasionally function as operational-level; headquarters, but can conduct sustained battles, engagements, and operations other than war (OOTW).

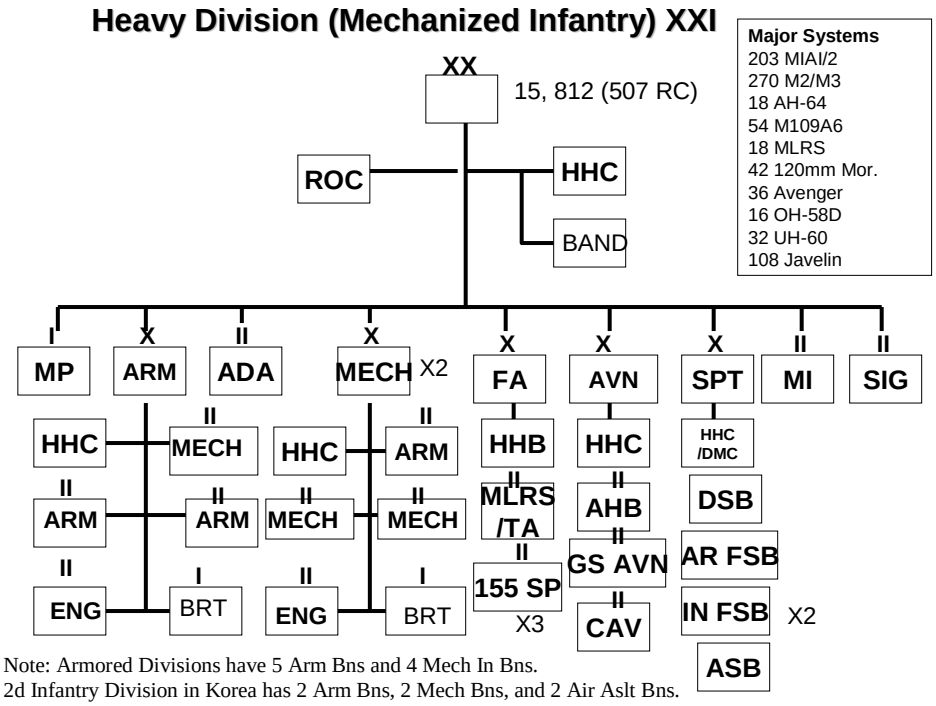
A corps normally has from two to five divisions of any type and combination. Armored, mechanized infantry, light infantry, airborne, air assault, and integrated divisions are all presently in the U.S. force structure. Each type of division has its own unique capabilities and limitations. The following are the types of divisions and other units that a U.S. Army Corps can employ.

Armored and Mechanized Infantry Divisions (New Heavy Division, Limited Conversion XXI)

The armored and mechanized divisions are mobile, ground-gaining forces with significant armor-protected firepower. These divisions are very similar in their organizations and capabilities and are commonly referred to collectively as heavy divisions. These divisions operate most effectively in open terrain where they can move quickly and use long-range, direct-fire weapons to their best advantage. They seek to rapidly concentrate combat power against the enemy on the mobile battlefield. They are somewhat limited in exploiting their mobility in operations in restrictive terrain, such as cities, mountains, and heavily forested areas.

Heavy divisions are excellent for use in developed theaters, but their ability to deploy rapidly in contingency operations is dependent on the strategic lift assets of the other services.

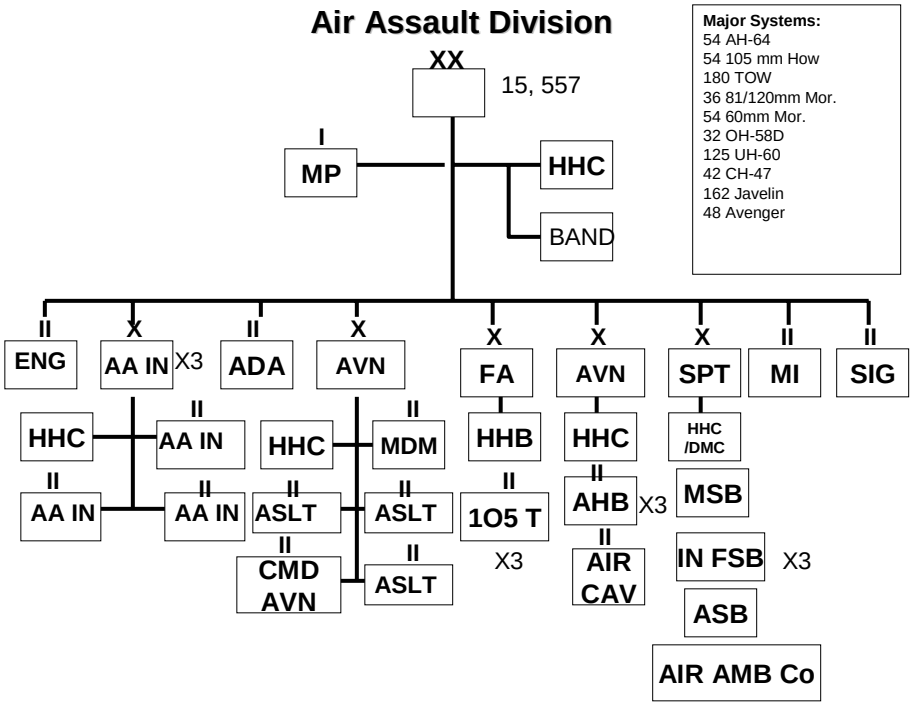
Additionally, these forces have high consumption rates of supplies, can deploy relatively few dismounted infantry, and have only limited use in restrictive terrain.



Air Assault Division

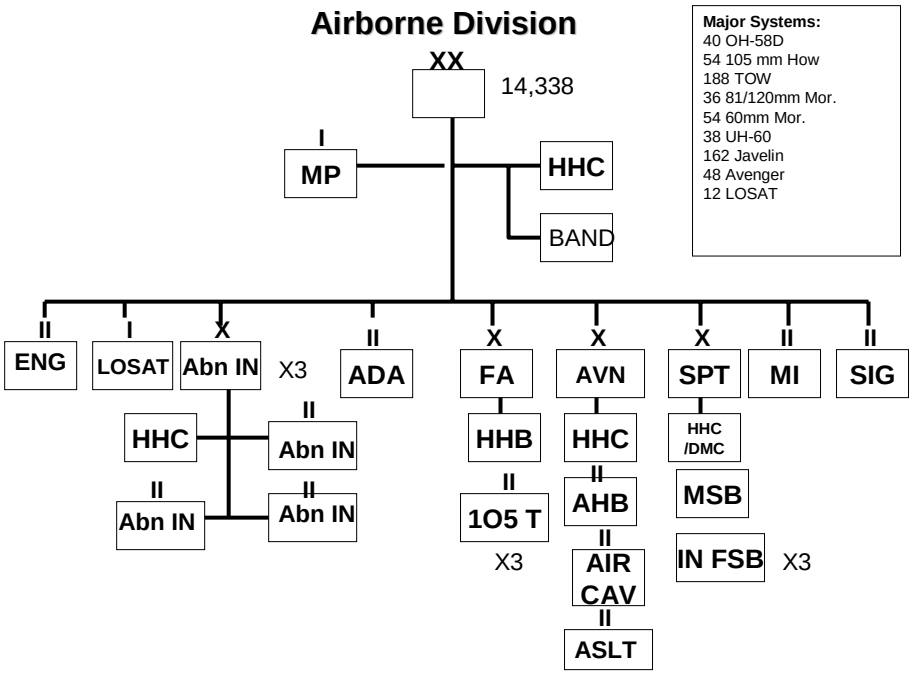
The air assault division is designed to conduct rapid tempo tactical operations over extended ranges. The division can fight by projecting significant combat poser to the enemy's rear by transporting infantry, field artillery, and other combat and combat service support using organic helicopter assets. The air assault division can rapidly concentrate, disperse, and redeploy its force, making it a highly responsive mobile reserve. Aviation is the prime mover and aircraft are integrated with ground forces. Air assault operations generally involve insertions and extractions under hostile conditions, as compared to mere air movement of troops to and form secure locations on the battlefield.

The division normally relies on air or sea lift for strategic mobility. Using organic aircraft the division can conduct an air assault operation for one brigade combat team out to 150 KM once every 24 hours, and can attack deep with three attack battalions out to 150 KM every 24 hours.



Airborne Division

The airborne division is designed to rapidly deploy anywhere in the world. It is specifically organized, equipped, and trained to conduct parachute assaults. The division can conduct airdrops in the enemy's rear to secure key terrain or to interdict the enemy's routes of resupply or withdrawal. The division is dependent on the Air Force for airlift, close air support, and aerial resupply. Once on the ground, it is essentially a dismounted force. The airborne division can be used in a developed theater, especially to add depth to the offense. It is particularly well suited for the power projection required in contingency operations and can rapidly deploy in situations calling for early buildup of combat forces. It provides limited combat power early in the development of a contingency situation to capture initial lodgments. It will require reinforcement to sustain contingency operations.

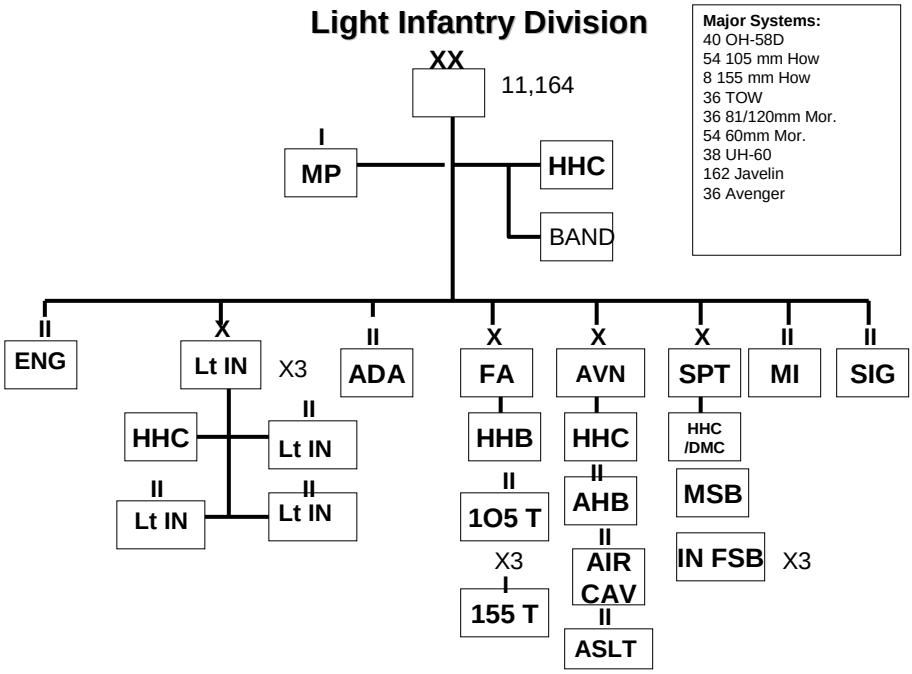


Light Infantry Division

The light infantry division provides an important new dimension to the strategic mobility of Army forces. Their rapid deployability will enable them to arrive in a crisis area before a conflict begins. On short notice, these divisions can rapidly reinforce forward deployed U.S. forces, and they are capable of operating for 48 hours without resupply. They are also available for worldwide contingencies, including regions which lack a developed support infrastructure.

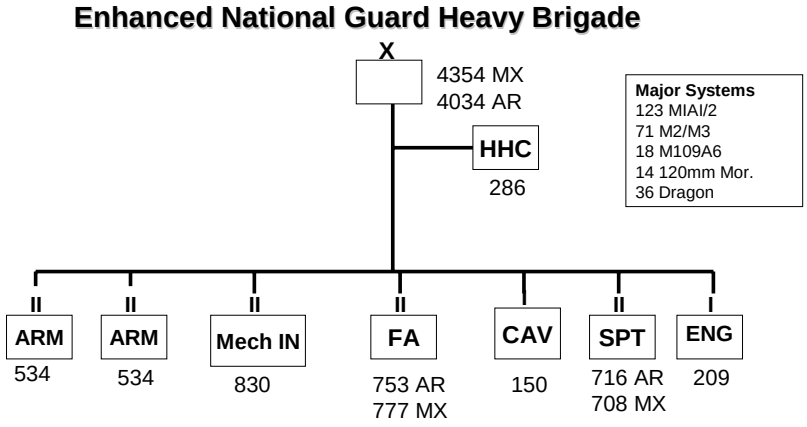
Light infantry division operations are characterized by flexibility in both tactical deployment and organization for combat. Light forces habitually operate as combined arms teams with organic engineers, artillery, aviation, and air defense. When suitably augmented and task organized for the mission, they are capable of operating independently at the brigade, battalion, and company levels. In addition, they can be reinforced with or can themselves reinforce airborne, air assault, special operations, armored, or mechanized forces. The division is most effective in restricted terrain and conditions of limited visibility.

Light infantry divisions are offensively-oriented units, especially adept at operating in a low-intensity scenario; however, these units can be highly effective in mid- to high-intensity conflicts when augmented with additional corps units to strengthen their combat power and sustainability. In such situations, light infantry divisions can be assigned missions which will free up mechanized and armored forces for employment elsewhere on the battlefield. Limitations include austere CS/CSS, requiring support from outside the division and need for survivability enhancements.



Enhanced Separate Brigades in the National Guard

In 1993, the Army designated 14 separate brigades and one Armored Cavalry Regiment in the National Guard as Enhanced Separate Brigades. They are authorized higher personnel and equipment levels than divisional units, and are anticipated to be the first to mobilize. These units currently consist of seven infantry brigades (29, 32, 39, 41, 45, 53, 76th), two armored brigades (116th, and 155th), five mechanized brigades (30, 48, 81, 218, 256), and the 278th Armored Cavalry Regiment.



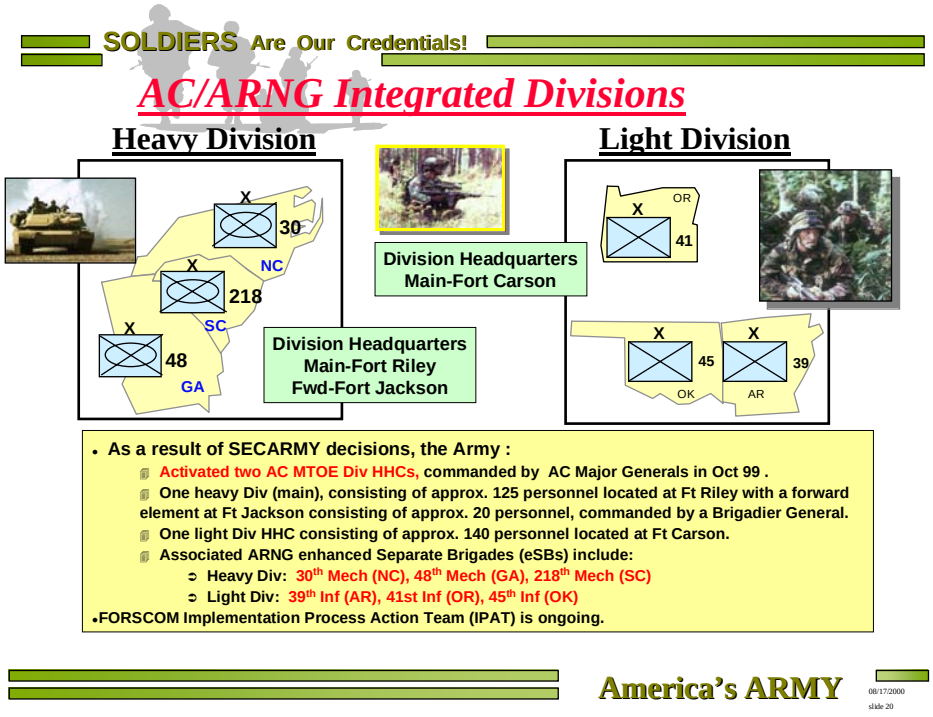
Note: Two Mech In Bns,
one AR Bn in Mech Bde.

Integrated Division

To make the ARNG combat structure more relevant to the warfight, the Army established two AC/ARNG Integrated Divisions. The initial phase of this process puts

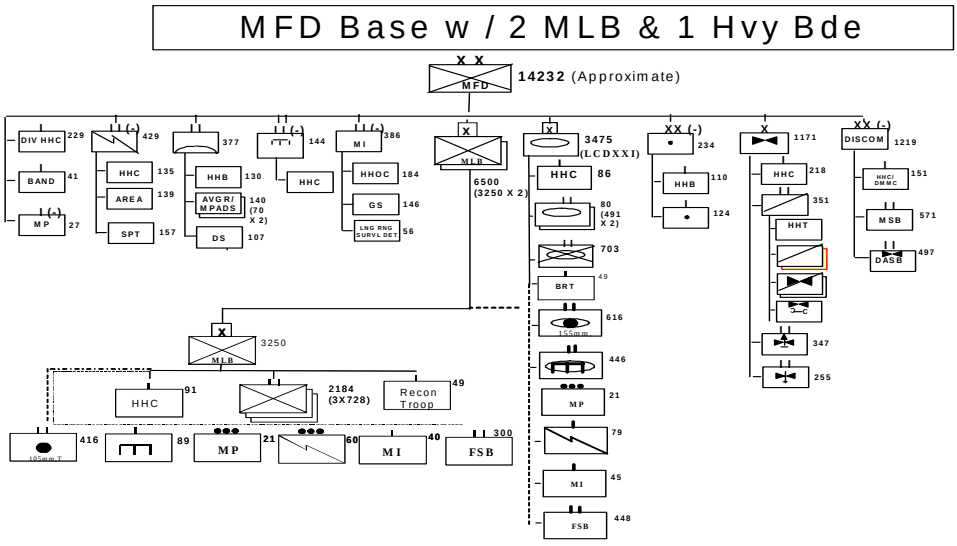
three ARNG Enhanced Brigades under command of an AC/ARNG division headquarters. This alignment improve training readiness for early deploying ARNG combat elements, facilitates more rapid deployment of these brigade, and enhances post mobilization preparation for war. This phase lays the foundation of the future transition of these forces to fully structured, integrated warfighting divisions. The Commanding General, U.S. Army Forces Command leads the process with active participation from the Army Deputy Chief of Staff for Operations and Plans, the National Guard Bureau, and the Adjutants General.

On 6 April 1999, the U.S. Army announced the 7th and 24th Infantry Divisions as this new type of division that integrates an active HQ with three NG separate enhanced Brigades. The Division HQ has training oversight over the tree brigades during peacetime. The 7th Division at Fort Carson will supervise the 39th (AR), 41st (OR), and 45th (OK) Infantry Brigades while the 24th Division at Fort Riley will supervise the 30th (NC), 48th (GA) and 218th (SC) Mechanized Infantry Brigades. Currently, these divisions lack a divisional base and are not intended to be employed in combat as a division.



Multifunctional Divisions

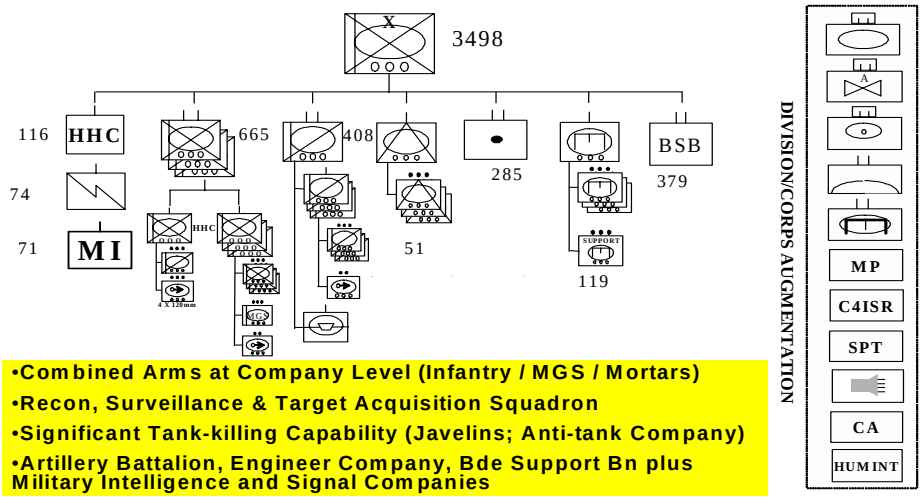
In September 2002, the Secretary of the Army announced a plan to convert four NG Heavy divisional brigades to Mobile Light Brigades as part of two National Guard Multifunctional Divisions. These will be formations prepared for full spectrum operations that range from major combat to duty in the homeland.



Stryker Brigade Combat Team

As part of the Interim Force, the Army plans on fielding six Stryker Brigade Combat Teams. Each of these will be equipped with some 330 Stryker Light Armored Vehicles in some ten variants. The first of these will be the 3d Brigade, 2d Infantry Division and the 1st Brigade, 25th Infantry Division, both at Fort Lewis, Washington, with the Initial Operational Capability for 2003. One of these brigades may be re-stationed to Europe. Additional brigades are to be converted from light infantry brigades in Hawaii and at Alaska. The 56th Infantry Brigade, 28th Infantry Division (Pennsylvania National Guard) is also to be converted. The 2d Cavalry Regiment at Fort Polk, LA is to become a Stryker Cavalry Regiment to serve as XVIII Corps reconnaissance unit.

Stryker Brigade Combat Team



- **Combined Arms at Company Level (Infantry / MGS / Mortars)**
- **Recon, Surveillance & Target Acquisition Squadron**
- **Significant Tank-killing Capability (Javelins; Anti-tank Company)**
- **Artillery Battalion, Engineer Company, Bde Support Bn plus Military Intelligence and Signal Companies**

Representative corps support elements in a heavy division sector
(Total strength approx 12,000-15,000)

1-2 Field Artillery Bde Headquarters

- 1 155 mm SP Artillery Battalions*
- 2 MLRS Battalions (3x18)

1 Attack Helicopter Battalion (Corps) (21 AH-64)

1 Command Helicopter Co (8 UH-60)

1 Medium Helicopter Company (14 CH-47)

1 Air Defense Artillery (PATRIOT) Battalion (-)

1 Engineer Group Headquarters

- 2 Combat Engineer Battalions (Mech)
- 1 Engineer Combat Support Equipment Company
- 1 Combat Engineer Battalion (Corps) (Wheeled)
- 1 Medium Girder Bridge Company
- 1 Ribbon Bridge Company
- 1 Engineer Team, Terrain Analysis (DS)

1 Chemical Battalion (DS)

- 1 Smoke Generating Company (Mech)
- 1 Smk/Decon Company (DS)
- 1 Biological Integrated Defense Platoon (7 BIDS)

1 Civil Affairs Battalion (DS)

1 Long Range Surveillance Detachment

1 PSYOP Tactical support Company (DS)

1 Corps Area Signal Company

1 Combat Support MP Battalion/Company

1 Electronic Warfare Company

Public Affairs, Chaplain Support, CID, History, Personnel Support, and Finance Teams/Detachments

1 Medical Company, Air Ambulance (15 UH-60L)

1 Medical Company, Ground Ambulance

1 Area Support Medical Company

1 Corps Support Group (Forward)**

*The type of corps field artillery battalions will vary. Typically, three to five battalions provide support in the division sector.

**The number of battalions and types of companies of supply, maintenance, transportation, and field services will be dependent upon the situation, but will normally total approximately 2-3000 personnel.

UNIT COMPARISON:
NOTIONAL MEF & NOTIONAL CORPS

	MEF	CORPS (5 DIVISIONS)
TOTAL PERSONNEL	48,000	174,000
DISMOUNTED RIFLE SQUAD MEMBERS	3,912	9153
MAJOR EQUIPMENT		
MBT	58	774
AAV	208	0
LAV-25/BFV	56	805
105T	0	162
155T	96	116
155SP	0	234
MLRS	0	234
TOW	144	420
DRAGON/JAVELIN	216	918
60mm MORTAR	108	162
81mm MORTAR	72	108

120mm MORTAR	0	142
4-6 MAN RECON TMS	73	117
Mk 19 40 mm	600	1779

AVIATION/ MISSILES	MEF	CORPS
AV-8	60	0
F-18A/C	48	0
F-18D	24	0
EA-6	6	0
RC-12	0	12
KC-130	12	0
AH-64	0	180
AH-1	24	0
0H-58D	0	176
CH-46/47	60 (CH-46)	98 (CH-47)
CH-53	44	0
E/UH-60	0	463
UH-1	24	0
STINGER	45	132
AVENGER	45	246
PATRIOT	0	80
BSFV/LAV-AD	8	72

COMMAND RELATIONSHIPS DOWN TO SEPARATE BRIGADE/CAVALRY REGIMENT LEVEL (AC only)

The following outlines the command relationships from Combatant Commander down to divisional, separate brigade-level. The Major Army Commands are in italics.

- Joint Forces Command
  - *US Army Forces Command (FORSCOM)* Ft McPherson, GA

- 1st US Army(CONUSA) Ft Gillem, GA
- 5th US Army(CONUSA) Ft Sam Houston, TX
- I Corps (COCOM to PACOM) Ft Lewis, WA
- 3d Brigade, 2d Infantry Division (SBCT)
- 1st Brigade, 25th Infantry Division (SBCT)
- III Corps Ft Hood, TX
  - 1st Cavalry Division Ft Hood, TX
  - 4th Infantry Division (Mechanized)(-) Ft Hood, TX
  - 3d Armored Cavalry Regiment Ft Carson, CO
- XVIII Airborne Corps Ft Bragg, NC
  - 10th Mountain Division (Light)(-) Ft Drum, NY
  - 3rd Infantry Division (Mechanized) Ft Stewart, GA
  - 82nd Airborne Division Ft Bragg, NC
  - 101st Airborne Division (Air Assault) Ft Campbell, KY
  - 2d Cavalry Regiment (Light) Ft Polk, LA
- 7th Infantry Division (Light) (Integrated) Ft Carson, CO
- 3d Brigade, 4th Infantry Division Ft Carson, CO
- 24th Infantry Division (Mechanized) (Integrated) Ft Riley, KS
- 1st Brigade, 1st Infantry Division Ft Riley, KS
- 3d Brigade, 1st Armored Division Ft Riley, KS

- <u>European Command</u>
  - *US Army Europe and 7th US Army (USAREUR)*
    - V Corps
      - 1st Infantry Division (Mechanized)(-)
      - 1st Armored Division (-)
    - Southern European Task Force (SETAF)
      - 173d Airborne Brigade (Separate)
    - 21st Theater Support Command
- <u>Pacific Command</u>
  - *U.S. Army Pacific (USARPAC)*
    - U.S. Army Japan and 9th Theater Support Command
    - 25th Infantry Division (Light)(-)
    - U.S. Army Alaska
      - 172d Infantry Brigade (Separate)
- <u>UN Command and US Forces Korea</u>
  - *8th US Army*
    - 2nd Infantry Division (-)
    - 19th Theater Support Command
    - 6th Cavalry Brigade (Air Attack)
    - 17th Aviation Brigade (Theater)

III. Army National Guard and Army Reserve

Organizations

The army relies heavily on the Army National Guard and the Army Reserve. *The Army* in FY03 consists of 1,035,000 of which 480,000 are Regular Army (46%). The National Guard has 350,000 (34%) and the Army Reserve has 205,000 (20%). Of this total force, some 791,000 reside in the deployable (MTOE) field Army, 23,000 are in special operating forces, while over 200,000 are in general support (TDA) activities and some 63,000 active duty are in individual personnel accounts. The National Guard currently provides 54% of the combat maneuver forces, 63% of non-divisional field artillery, and 46% of the combat support units above division, as well as 98% of the Civil Affairs and Psychological Operations Forces.

The Army National Guard currently consists of eight divisions and 15 enhanced brigades. The Army Guard is currently in the process of converting twelve combat brigades (including the remaining two non-enhanced combat brigades and the Scout group) and some 47,300 spaces into CS/CSS units that have been identified as force deficiencies. Additionally, two integrated divisions composed of three enhanced guard brigades and an Active Army division headquarters have been instituted. Two new Multifunctional NG Divisions have also been proposed which will convert four of the divisional heavy brigades into lighter mobile brigades suitable for both overseas and homeland security missions. These structure changes will result in no change to the current light infantry division (29th); conversion of two heavy divisions to multifunctional divisions of two Mobile Light Brigades and one heavy or Styker Brigade Combat Team; loss of one combat brigade in each of three other divisions; and conversion of all three

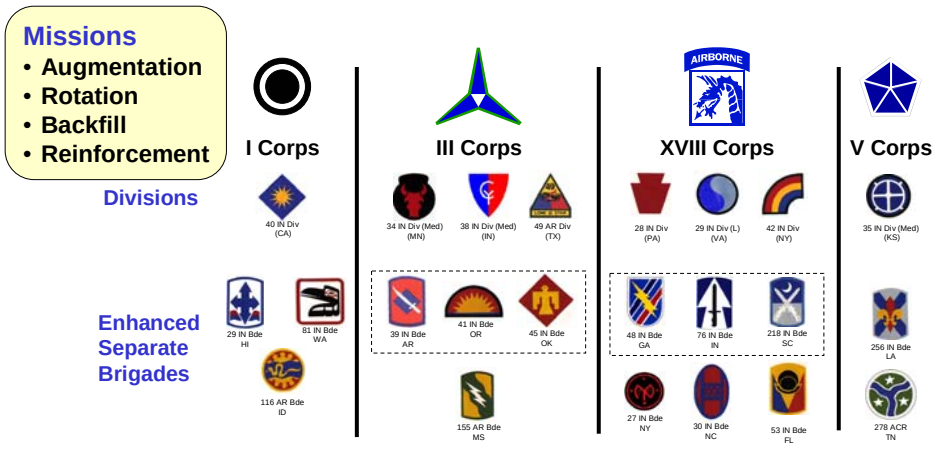
combat brigades in the remaining two divisions to CS/CSS. The resulting ARNG divisional brigade composition will be: one SBCT, four MLB, three light infantry brigades, and seven heavy brigades.

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.

ARNG Alignments

On 14 Sep 00, the CSA announced some of the results from the deliberate planning process at the 122d National Guard Association of the United States in Atlantic City.



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. A large share of the early deployed (w/in 10 days of mobilization) combat service support units come from the Reserve Components.

V. Army Logistical Data

The existing Army Strategic Mobility Program (ASMP) Action Plan calls for the Army to develop the capability to provide a force projection crisis response force of up to corps size with the following standards:

> The Army must provide a corps of five divisions that is tailorable, sustainable, and with airborne, vertical insertion capability. The lead brigade must be on the ground by C+4, the lead division by C+12. Two heavy divisions (sea lifted) arrive from CONUS by C+30 (armored, mechanized, air assault, (mix per CC)). The full corps (five divisions and a COSCOM) closes by C+75. A fully supported heavy combat brigade, with sufficient supplies to sustain the corps until lines of communication are established, must be prepositioned afloat.
>
> In order to accomplish this goal, the Army has established the:

<u>Army Prepositioned Stocks (APS) Program</u>

The Army Prepositioned Stocks (APS) Program consist of three categories:

- Army Prepositioned sustainment. Equipment and supplies to sustain the warfight until SEALOC is established.
- Army Prepositioned Operational Projects. Tailored equipment to meet specific CC, geographic unique, or common user requirements.
- Army Prepositioned Sets (APS). Brigade-sized combat unit sets of equipment (8 each), one division base set, and one echelon-above divisions CS/CSS set positioned worldwide both ashore and afloat.

APS Stockpiles:

- APS-1 (CONUS); Project and sustained stocks
- APS-2 (Europe); Project and sustained stocks in Norway, Central Europe and Italy. Artillery battalion set in Norway, 2 brigade sets in Central Europe, and one brigade set in Italy.
- APS-3 (afloat); Project and sustainment stocks and one APS brigade set. This will consist of 16 ships to include: 4 new LMSRs carrying a 2x2, 4500 personnel configured brigade; 4 new LMSRs carrying a Theater Opening Combat Service Support Package with the unit equipment for 15,000 personnel; 3 LASH and 2 container ships for sustainment and 2 HLPS and 1 T-ACS for port opening. A second brigade set afloat has been approved as 1x1 initially.
- APS-4 (Pacific); Consists of sustainment and project stocks and one brigade APS (2x1) in South Korea
- APS-5 (Southwest Asia); Consists of sustainment and project stocks and two brigades sets as well as a divisional base.

Capabilities of the APS 3 (Army Pre-Positioned Afloat)

- Major Equipment

- M1A1	123
- M2/M3	126
- Other tracks	344
- M109, 155SP	24
- HMMWV w/40mm	40
- STINGERS	16 (8 BSFV, 8 MANPAD)
- Heavy EQP Transports (HETs)	192
- Other wheeled vehicles	3500
- MLRS	9

- Personnel

- 2x2 (AR x MX) Brigade	4500
- Theater Opening Package	15400

- Mobility Requirements
  - Airlift sorties required 144 C141, 8 C5
  - Assembly times 10 days or less

- Supplies
  - 15 days complete for the heavy Brigade
  - 30 days for selected critical theater requirements

The Army's future deployment goals for the Objective Force include deploying a brigade in 96 hours, a division in 120 hours, and five divisions in 30 days.

The Army's Combat Service Support (CSS) System provides both logistics and personnel support, which together are the foundation of the Army's Military Power. Army operational support to theater force includes planning and providing a significant amount of support to joint forces under Army Title X Wartime Executive Agent Requirements.

Representative Army responsibilities for WEAR

Executive Agent For	Spted Svc or Agency
Inland logisitics support	USMC
Inland Class I support	All services
Supply to peacekeeping forces	All services
Operation of common user ocean terminals	All services
Intermodal container management	All services
Trans engineering for highway movement	All services
Common user ocean terminals	All services
Automated marking and symbols for logistics	All services
Military customs inspections	All services
Military troop construction	USAF Overseas
Airdrop equipment and systems	All services
Power generation equip and systems	All services
Land-based water resources	All services
Overland POL support	All services
Military postal service	All services
DOD enemy POW/detainee program	All services
Blood support	USAF
Military veterinary support	All services
Medical battlefield evacuation	All services
Mortuary svcs and graves registration	All services
Conventional ammunition	All services
Disposal of munitions & waste explosives	All services
Currency and banking support	All services

Logistic Requirements for Committed Army Forces
(Typical usage for selected, committed 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
FA Brigade (Hvy)	30,000 Gals/Day	2600 T/Day	40 T/Day
ACR/Sep Bde (Hvy)	150,000 Gals/Day	800 T/Day	90 T/Day
Corps Armored Brigade	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
Heavy 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
Light Inf Bde Cbt Team	75 C-17	N/A	N + 96 Hrs
Light Inf Div	375 C17	N/A	N + 96 Hrs
Stryker Bde Combat Team	350 C17	N/A	N + 96 Hrs
Heavy Division	77 CRAF	2 FSS, 5 LMSR	C + 30 Days
Air Assault Div	70 CRAF	4 LMSR	C + 30 Days
Corps Troops (-)	200 CRAF	8 LMSR 21 RO/ROs	C + 75 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 Assemble Areas (TAA) after beginning deployment.

. Major Army Systems

Armor and Mechanized Combat Vehicles

System	*Distr per unit*	*Weapons*	*Max eff range (meters)*	*Carried on veh*	*Fuel consumption (gal/hr)*	*Fuel capacity (gal)*	*Cruising range (miles)*	*Max speed (mph)*	*Obs negotiation*
M1A1 tank ABRAMSa,d	14 per tank Company	120-mm, Cdr .50 cal MG (or 7.62 MG) Coax 7.62 MG Loader 7.62 MG Smoke GL Thermal Sights	2,500 1,200-1,600 (900) 900 900 30 2000+	40 1,000 10,000 14,000 24 ----	Idle avg: 10.80 Cross country: 56.60 Secondary roads: 44.64	505	289	Highway: 41.5 Cross country: 30	Vertical step: 3'6" Trench crossing width: 9'
M2 IFV BRADLEY		TOW (LOSAT) 25mm Chain Gun Coax 7.62 MG Smoke GL Thermal	3750 APDS: 1,700[b] HEI-T: 3,100[c] 900 30 2000+	7 225,675 total 900 2340 16 ----	Idle avg: 6.4 Cross country: 18.0 Secondary roads: 8.6	175	300	Hwy: 41 Cross country: 30 Water: 4.5	Vertical step: 3' Trench crossing width: 8'4"
M3 CFV BRADLEY	6 per sct PLT (HHC—mech. inf. or tank bn)	TOW (LOSAT) 25mm Chain Gun Coax 7.62 MG Smoke GL Thermal	3,750 APDS: 1,700[a] HEI-T: 3,100[b] 900 30 2000+	12 425, 1,280 total: 1,705 4,610 16 ------	Idle avg: 6.4 Cross country: 18.0 Secondary roads: 8.6	175	300	Hwy: 41 Cross country: 30 Water: 4.5	Vertical step: 3' Trench crossing width: 8'4"

[a] Tank and Bradley Bns going from 58 tanks /57 Bradleys to 45 tanks/57 Bradleys (4 Co's to 3 Co's/ Bn) [b] Tracer burnout, otherwise 2,700 meters. [c] Range at which impact is observable and at which round self-destructs. Tracer burnout occurs at 2,500 meters.d M1A2 will have a commanders independent thermal viewer which greatly enhances view of battlefield.

Field Artillery Weapons

Weapon	*Rds on Veh/Prime Mover*	*Rds Bulk Loaded*	*Range (Meters)*	*Weight (Pounds)*	*Time to Emplace (Min)*	*Max Rate of Fire— No. Rds First 3 Min*	*Sustained Fire Rds per Hour*	*No of Weapons per Unit*
105-mm how towed M119A1	40	150	14,000 19,000 (RAP)	4,100	3	18	180	Lt inf bn-18
155-mm how SP M109A5 (Res only)	28/36	206	18,100 23,500 (RAP)	53,940	1	12	60	Armed or mech div bn- 24 Corps bn- 24
155-mm how M109A6	39	203	22,400 30,000 (RAP)	64,000	1.3	12	60	Bn- 18
155-mm how towed M198	28	161	18,000 30,000 (RAP)	15,800	5	12	Variable	Corps bn- 24 Lt Inf btry- 8
ATACMS	2 LP/Cs of 6 rockets each		Block I 165km IA- 300km	3,609	2-20	6		Bn-27
MLRS	12	96	30 km	54,000	2-20	12	12	Armed or mech div bn- 18 SPLL (3x6 SPLL Btrys) Note 1 Corps bn- 27

Notes: 1. Self-propelled loader-launcher.

2. High mobility Artillery rocket System (HIIMARS)- wheeled MLRS. C130 transportable MLTS for lt inf. Same capability as MLRS, but faster road movement, cheaper, and lighter (20% fewer sorties). Fielding FUE 2005. 18th ABC has 3 portotypes.

3. XM777 Lt wt 155mm Howitzer (towed). Replaces M198 as GS weapon in lt units and DS in IBCT, and only Howitzer in USMC. Fielded USMC FUE 2003, Army 2005. Prime mover is 5 ton truck. Rg 24.7 and 30km RAP. Rate of fire 5 rpm, wt 9000 lbs, emplaces in 2-3 mins.

4. XM 2001 Crusader 155mm SP howitzer. Replaces Paladin. DS Howitzer in all hvy divs. Fielded FUE 2008. Wt is 38-42 tons. 1st rd response in 15-20 seconds. Max ROF 10-12 rds/min. Rg greater than 40 km. New engine common to Abrams and Crusader.

Anti-Armor Missiles

Missile	*Prime Mover*	*Weight (lbs)*	*Guidance Linkage*	*Rounds Aboard*	*Range (meters)*
TOW	Bradley IFV/CFV or TOW HMMWV AH-1S Reserve only	40 (round only)	Wire	10 8 7 12	3,750 max 65 min
Hellfire	AH-64 Atk Hel AH-58D	100 (round only)	Laser-designated	16/4	7000+ 7,000+ max
Javelin	Hand held, 49lbs, Range 2000 meters. Fire and forget weapon				

Air Defense Missiles and Equipment

System	*Range (Kilometers)*	*Weight (Pounds)*	*Number Launchers per Unit*	*Fuel*	*Guidance*	*Type Warhead*	*Rds on Launcher*

PATRIOT air Defense missile	80	3,740	Bn- 48	Solid	Command	Hit to kill	4
M2A2 Bradley Stinger Vehicle	4+		8/Btry Hvy Div; 8/Enhanced Bde 12/Corps Btry 24/light ACR 6/hvy ACR		Heat Seeker	HE/ 25 mm gun	6 Stinger Missiles
Stinger Manpads	4+ 4	34.9	6 per crew	Solid	Heat seeker	HE	1 per 8 stingers
Avenger Air Defense System.	Standard vehicle mounted launchers contain eight "ready to fire" stinger missiles. Vehicle also has AA machine guns (.50 cal).						

Attack Helicopters

Type Aircraft	*Weapon Systems*[1]	*Maximum Number of Rounds*	*Maximum Effective Range (meters)*	*Endurance (hrs: min)*	*Maximum External Load (pounds)*	*Average Speed*[2] *(knots)*
AH-1S COBRA (Res only)	20-mm Cannon M197 (Vulcan)	950	1,500	1:30	1,380	120
	70mm Rocket	38 (Two rocket pods of 19 each) or 14 (Two pods of 7 each)	5,500			
	TOW	8	3,750			
AH-64 APACHE -3 x Bn of 24 ea at Corps -1 x Bn of 24 at Div -3 x Bn of 24 each at AASLT Div	30-mm Chain Gun	1,200	3,000	1:45	6,200	140
	70 mm Rocket	76 (Four rocket pods of 19 each)	5,500			
	Hellfire Missile	16	7,000+			
AH 58 D	Hellfire	4	7,000	2:00	2000	80
	.50 cal	400	1100			
	70 mm rockets	14	5500			
	Stingers	4				

1. Can be armed with any system or combination, if maximum rounds are reduced.

2. Low-level flight for planning route to and from deep attack target. Map of the earth flight speed averages 35 knots (65 KMPH).

Note: SOF aircraft discussed briefly in SOF Section, RAH-66 COMANCHE helicopter is currently under development. COMANCHE will have a crew of two, 170 kts cruising speed, 2.5 hour endurance and a 1,260nm self deployment range.

3. AH64 can be fitted with aux 230 gallon fuel tanks (up to 4) on wing pylons. Each aux tank provides approx 70 mins of additional endurance. Use of aux tanks limits number of weapons stations.

Utility Helicopters

Type aircraft	*Max range*		*Cruise speed (knots)*	*Endurance(hours)*	*Normal internal payload (lbs)*	*MAX external payload*
	(NM)	*(KM)*				
UH-60 -114/ Corps -48/ Hvy Div	326	604	145	2.25	3,360	8,000

-38/ Lt Div -114 / AASLT Div						
CH-47D -64/Corps -48/AASLT Div	387	717	140	2.5	20,206	26,000
UH-1H (reserve only)	276	511	110	2.5	———	———

Observation Helicopter						
Type aircraft	*Max range*		*Cruise speed (knots)*	*Endurance (hours)*	*Normal internal payload (lbs)*	*MAX external payload*
	(NM)	*(KM)*				
OH-58C -1 x Bn of 24 at Lt/Abn Div -2 x Troops of 8 ea at Hvy - 1 x Bn of 32 at AASLT Div	300	556	110	2.5	———	———
Also: Quick fix aircraft - EH-1H COMINT EH-1X SIGINT/EW- Retire prior to FY 04 EH-60A SIGINT/EW- Converting to UH						

VI. Army Issues

- Targeting Process The ARFOR/JFLCC needs to be able to request additional fire support (especially Close air Support) from other components to support the conduct of land operations in accordance with the JFC's overall guidance. A Joint Fires Element (JFE) as part of the J3 can provide staff coordination. Additionally, a Joint Targeting Coordination Board (JTCB), preferable under the Deputy CC, with authority to recommend targeting priorities at the macro level is a method of providing that support.

- 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 aircraft and ATACMS or USMC Aviation) when employed for sustained land operations. 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. 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. Joint Doctrine for a JFLCC is being established in the JFLCC Handbook being developed by the Army and Marines as well as in the proposed JP3-31, Command and Control of Joint Land Forces.

- Deep Fires. The ARFOR/JFLCC needs to have a forward boundary sufficiently far in front of the FLOT to be able to shape and influence the ground battle. Additionally, it should not e 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. Forward of the FSCL, but short of the forward boundary, the JFACC may be the Coordinating Authority for deep fires due to the assets he controls. The ARFOR/JFLCC may establish a Fires and Effects Coordination Cell to plan and monitor deep operations. (JP 3-09, FM 3-93)

- Air and Missile Defense. Theater Missile Defense 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 through the use of an Army Air and Missile Defense Command (AAMDC). This command would consist of a Theater Missile Defense Element with JTAGS connectivity under a Brigadier General that would conduct theater level planning and execution for the ARFOR/JFLCC and in support of the JFACC. (FM 3-01.12 Draft).

- Joint Rear Area Commander. As the JFLCC normally commands the most personnel in the Joint Rear Area, the JFC may designate the JFLCC or one of his subordinates as the JRAC. Since the Theater Support Command is usually the largest activity in the JRA and may require dedicated security forces for this function. A Joint Security Brigade (JSB) may be formed from Army MPs, Air Force security forces, USMC security units, and Navy port security groups. (JP 3-10)

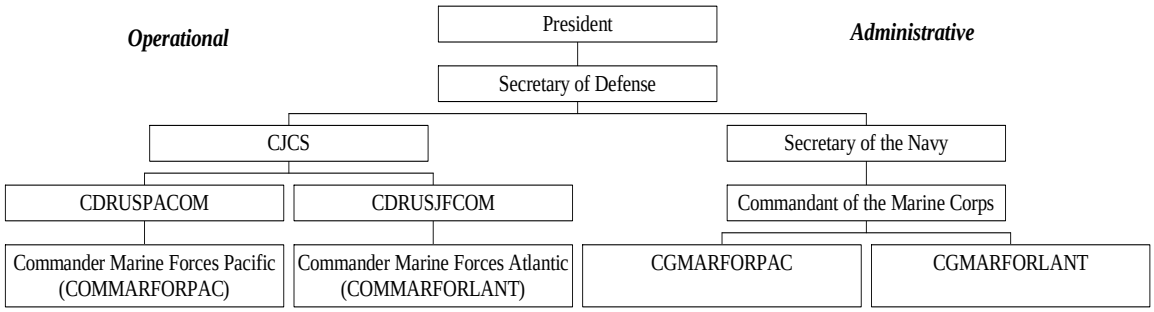
- Joint Forces Logistical Commander. The Army's logistical concepts for EAC are evolving to a Theater Support Command that may also be tasked as the joint theater-level command. The other components can be expected to contribute appropriate CSS forces. Examples could be Navy Construction Battalions (SEABEES) or Fleet

Hospitals ashore as well as Air Force Engineering units. (FM 4-93.4 Theater Support Command)

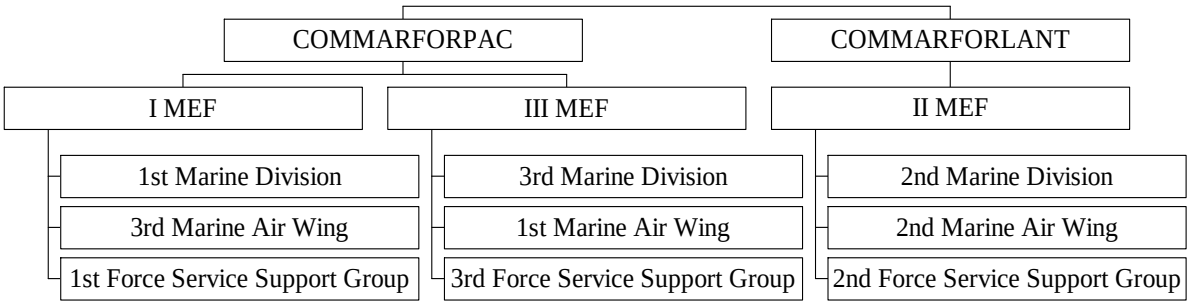
U.S. MARINE CORPS

I. ORGANIZATION

The Marine Corps and the Navy are separate services within the Department of the Navy.

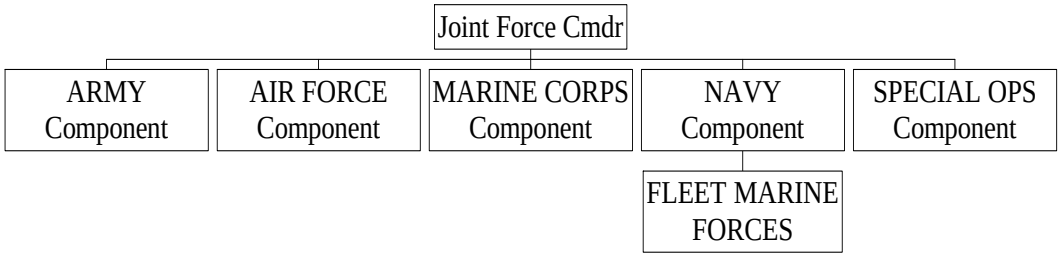


Note:
COMMARFORPAC is also the Marine Corps Component Commander to CDRUSCENTCOM.
COMMARFORLANT is also the Marine Corps Component Commander to CDRUSEURM and CDRUSSOUTHCOM.



COMMARFORPAC and COMMARFORLANT are also dual-hatted as type commanders (CGFMFPAC and CGFMFLANT) for the U. S. Pacific and Atlantic Fleets. They are responsible to the Fleet Commanders for providing combat-ready expeditionary forces for service with the operating fleet. This includes, for example, Marine expeditionary units deployed with amphibious ready groups.

The Marine Corps Component and
Fleet Marine Forces in a Joint Force



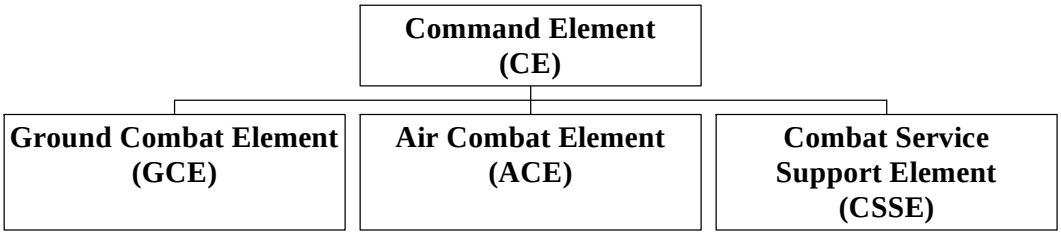
The Marine Corps Forces commander (COMMARFORLANT or COMMARFORPAC) is designated simultaneously as the Marine Corps component commander (in relation to the joint force commander) and as the commanding general of Fleet Marine Forces (in relation to the Navy component.)

MAGTF Organization and Capabilities

Consistent with its statutory charter to "provide forces of combined arms, including aviation," the Marine Corps organizes for operations into Marine Air-Ground Task Forces (MAGTFs.) Assigned a mission, Fleet Marine Force commanders organize appropriately tailored MAGTFs by drawing ground, aviation, and combat service support capabilities from the division, wing, and force service support group structure of the Fleet Marine Force.

MAGTFs provide the joint force commander with a readily available, self-sustaining, combined arms force capable of operating as the landing force of an amphibious task force; as a force in sustained operations ashore; as part of, or nucleus headquarters of, a joint or combined task force; as a forward presence in an area of interest; or as a single-service command capable of responding across the spectrum of conflict in all levels of war.

All MAGTFs are comprised of four elements:



Command Element (CE). The CE is the MAGTF headquarters. Like all other elements of the MAGTF, it is task organized to provide the command, control, and coordination essential for effective planning and execution of joint operations. It is composed of CO/CG, his staff and headquarters augmentation that provides liaison, communications, force reconnaissance, UAVs, sensors, topographic support, imagery interpretation, counterintelligence, interrogator/translators, and tactical deception capabilities. It also serves as MAGTF's all-source intelligence fusion center.

Ground Combat Element (GCE). The GCE is task organized to conduct ground operations to support the MAGTF mission. It is formed around an infantry organization reinforced with requisite artillery, reconnaissance, armor, and engineer forces and varies in size and composition from small teams to one or more Marine Divisions.

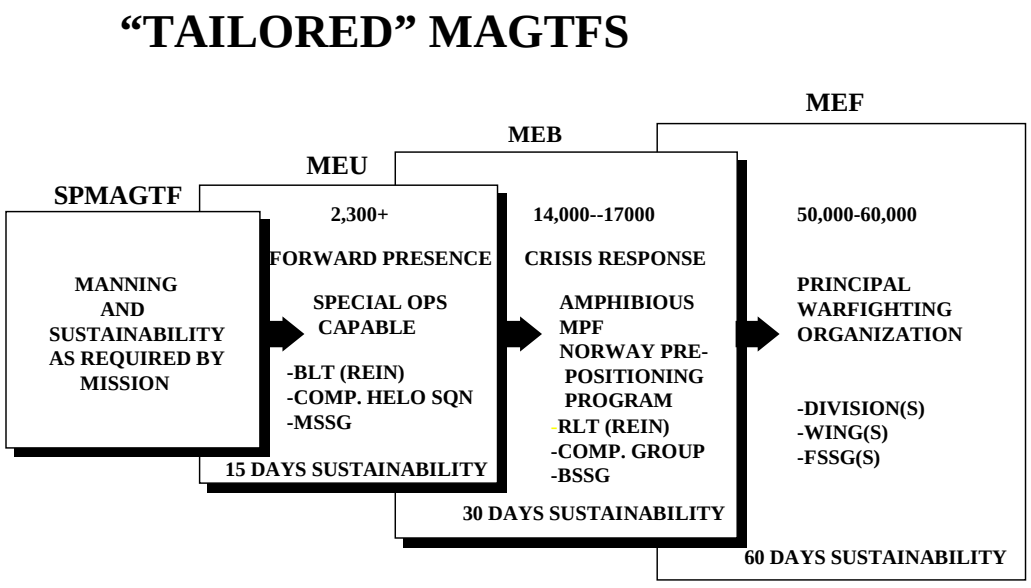
Aviation Combat Element (ACE). The ACE is task organized to provide the functions of Marine Corps aviation based on the tactical situation and the MAGTF mission and size. These functions are air reconnaissance, anti-air warfare, assault support, offensive air support, electronic warfare, and aircraft and missile control. The ACE is organized around an aviation headquarters and varies in size from a small aircraft/air control detachment to one or more Marine aircraft wing(s). It includes aviation command (including air control agencies), combat, combat support, and combat service support units required by the situation.

Combat Service Support Element (CSSE). The CSSE is task organized to provide the full range of combat service support to accomplish the MAGTF mission. The CSSE can provide support in supply, maintenance, transportation, engineer, health, postal, disbursing, prisoner of war handling, automated information systems, exchange, utilities, legal, and graves registration services. The combat service support element varies in size from a Marine Expeditionary Unit Service Support Group (MSSG) to a Force Service Support Group (FSSG.)

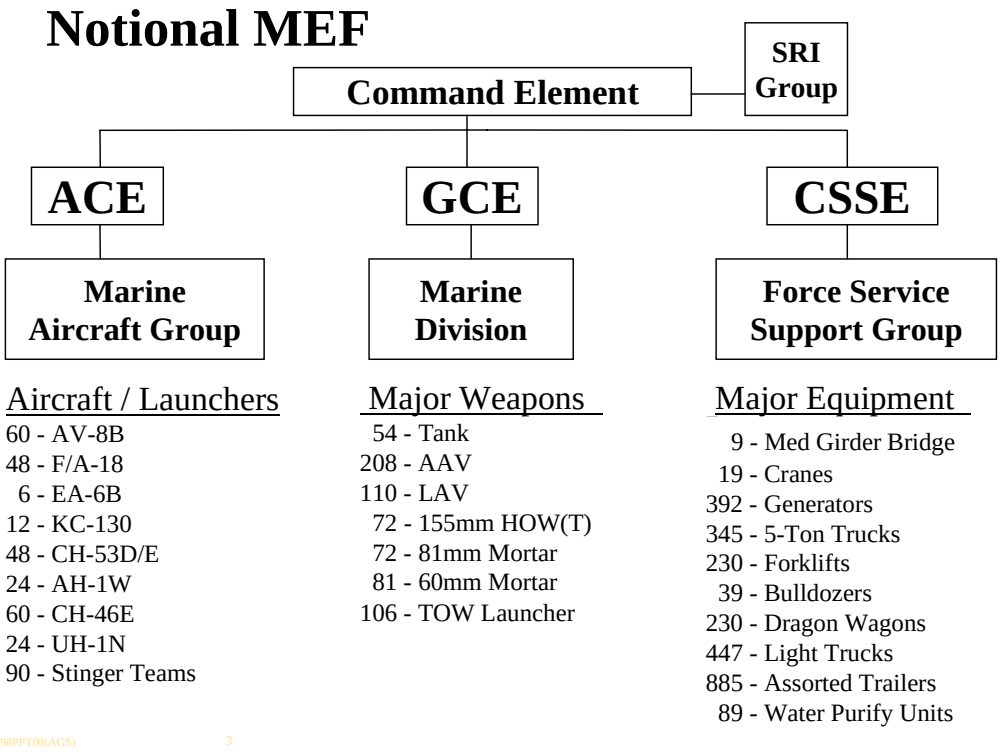
Types of MAGTFs

Regardless of size, all MAGTFs are "expeditionary" forces. An expeditionary force is a capability, vice a structure. Any size MAGTF could be referred to as a Marine "expeditionary" force. To provide a frame of reference for general sizing, MAGTFs are categorized as follows:

- Marine Expeditionary Force (MEF)
- Marine Expeditionary Brigade (MEB)
- Marine Expeditionary Unit (MEU)
- Special Purpose MAGTF (SPMAGTF)

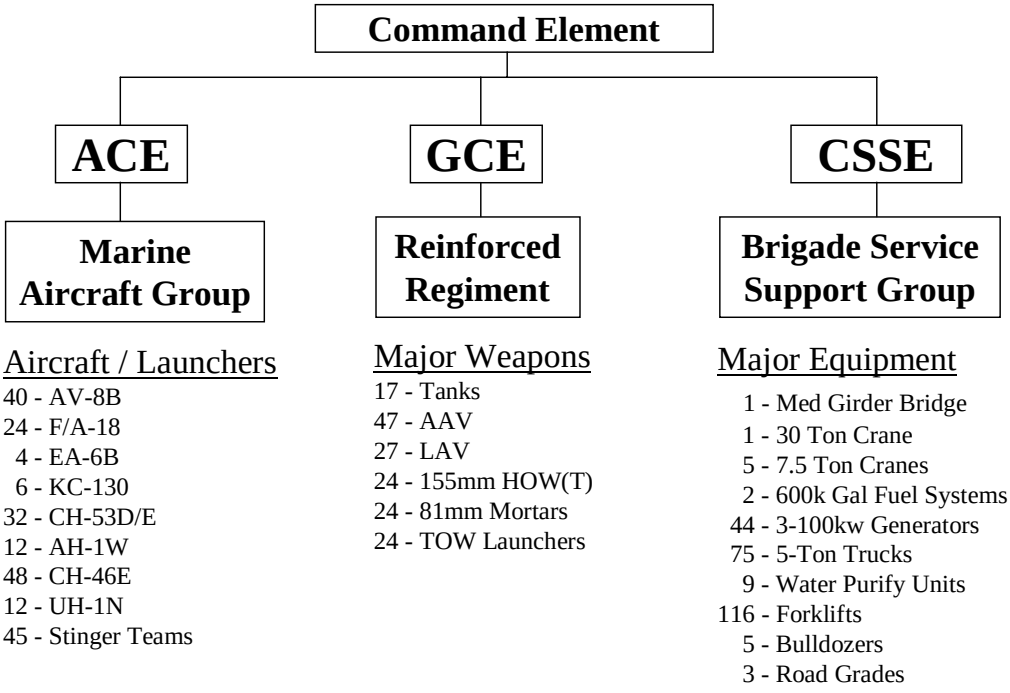


Marine Expeditionary Force (MEF). The MEF, the largest of the Marine air-ground task forces, is normally built around a division/wing/FSSG team, but can include several divisions and aircraft wings, together with an appropriate combat service support organization. The Marine Expeditionary Force is capable of conducting a wide range of amphibious assault operations and sustained operations ashore. It can be tailored for a wide variety of combat missions in any geographic environment. It comes with 60 days of supply.



Marine Expeditionary Brigade (MEB). The MEB is a task organization which is normally built around a regimental landing team, a Marine Aircraft Group, and a combat service support group. It is capable of conducting either amphibious assault or MPF operations. During potential crisis situations, a MEB may be forward deployed afloat for an extended period to provide an immediate combat response. The command element of this particular MAGTF is embedded in the MEF Command Element, which facilitates compositing with the remainder of the MEF if it is deployed. A MEB will deploy with 30 days of supplies. A MEB is associated with each of the MEFs.

Notional Amphibious MEB



As an example of an enlarged MEB sized MAGTF, Operation Desert Storm had 17,000 Marines embarked under NAVCENT as follows:

4 MEB (7000 Marines):	**5 MEB** (About 8340 Marines):	**13 MEU(SOC)** (2300 Marines):
1 LHA	1 LHA	1 LPH
2 LPH	4 LPH	1 LSD 1 LSD
3 LPD	3 LPD	1 LKA
3 LSD	4 LSD	1 LST
4 LST	2 LKA	4 ships
13 ships + 1 RO/RO	4 LST	
	18 ships + 4 MSC	
(1300 hospital beds)	(1800 hospital beds)	(440 hospital beds)

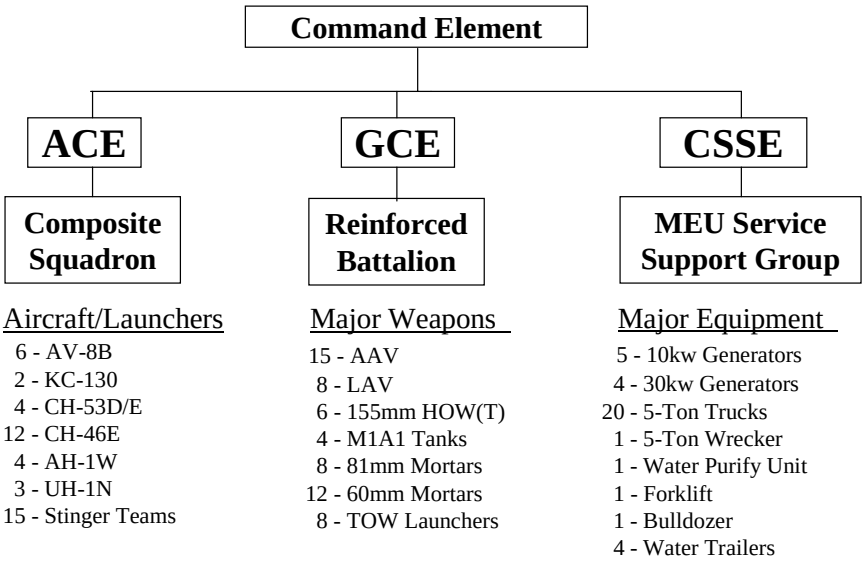
* These MEBs are small compared to the notional MEB because they do not include much of the fixed wing personnel who were ashore.

Marine Expeditionary Unit (MEU) Special Operations Capable (SOC). The MEU is normally composed of a reinforced infantry battalion, a helicopter squadron reinforced with fixed wing AV-8B aircraft, and a MEU service support group (MSSG). MEU(SOC)s are routinely deployed as immediately available, sea-based MAGTFs to meet forward presence and limited power projection requirements. These Amphibious Ready Group (ARG)/MEU deployments have become routine taskings. The forward-deployed MEU(SOC) is task organized, trained, and equipped to conduct a wide variety of conventional and selected maritime special

purpose missions. All forward-deployed MEUs have completed specialized training and evaluation and are designated special operation capable. Currently, MARFORLANT and MARFORPAC maintain forward-deployed MEU(SOC)s in the Mediterranean, Persian Gulf, and Western Pacific regions. The MEU(SOC) is commanded by a colonel and deploys with 15 days of accompanying supplies. Within each Maritime Prepositioning Squadron a single ship is configured with stand-alone capability to support a MEU with equipment and supplies for operations in excess of 15 days. The addition of any single maritime prepositioning ship to a forward-deployed MEU(SOC) adds significant sustainment and the ability to rapidly expand the force. MEU(SOC) mission capabilities include (among others):

- Amphibious raids/limited objective attacks (w/o electronic emission, in darkness and adverse weather conditions, with 6 hour notice.)
- NEO.
- Security Ops/counter Intel.
- Mobile training teams.
- SIGINT/electronic warfare Ops.
- Civic action Ops.
- Clandestine recon and surveillance Ops.
- Tactical recovery of aircraft and personnel.
- *In-extremis* hostage rescue

MEU (SOC) Organization



Special Purpose MAGTF (SPMAGTF). MAGTFs organized to accomplish specialized missions for which other MAGTFs would be inappropriate or too large. SPMAGTFs fill the niche of providing Marine capabilities for special purposes such as disaster relief or unique instances such as an oil spill. They are also capable of limited combat operations such as

noncombatant evacuations. Special purpose MAGTFs are designated as a SPMAGTFs with their locations, e.g.: SPMAGTF (Liberia) or SPMAGTF (Philippines.) As with the MEU, the SPMAGTF may be the forward element of a larger MAGTF.

4th MEB(AT). After the terrorist attack on 11 September 2001, the Marine Corps established the 4th Marine Expeditionary Brigade, Anti-Terrorist. This Brigade has a standing headquarters, located at Camp Lejeune, NC, and includes the Marine Security Force Battalion, the Marine Security Guard Battalion, the Chemical, Biological, Incident Response Force (CBIRF), and an Infantry Battalion specially trained in anti-terrorist operations. They are capable of deploying in six hours of notification to reinforce embassies and Fleet Anti-Terrorism Support Teams worldwide.

II. CONCEPT OF OPERATIONS

Expeditionary in nature, with special emphasis in conducting a wide range of operations from the sea, and providing a combined arms team and a national swing force, the United States Marine Corps is capable of conducting worldwide stability operations; limited objective operations; amphibious operations and sustained operations ashore. USMC 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. Emphasis is on Operational Maneuver from the Sea (OMFTS.)

Amphibious Warfare

Amphibious Operations. Attacks launched from the sea by naval and landing forces, embarked in ships or craft involving landings on a hostile shore. As an entity, the amphibious operation includes the following phases (*acronym: PERMA*):

Planning. The period from issuance of the initiating directive to embarkation.

Embarkation. The period during which the forces, with their equipment and supplies, are embarked in the assigned shipping.

Rehearsal. The period during which the prospective operation is rehearsed to test adequacy of plans, timing of detailed operations, and combat readiness of participating forces; ensuring that all echelons are familiar with plans; and testing communications.

Movement. The period during which various components of the amphibious task force move from points of embarkation to the objective area.

Assault. The period between arrival of major assault forces of the amphibious task force in the objective area and accomplishment of the amphibious task force mission.

Amphibious Task Force/Group. The task organization formed to conduct an amphibious operation. The amphibious task force/group always includes Navy forces and a landing force, with their organic aviation, and may include Army and Air Force forces when appropriate.

Amphibious Objective Area. A geographical area, delineated in the initiating directive for purposes of command and control, within which is located the objective(s) to be secured by the amphibious task force. This area must be of sufficient size to ensure accomplishment of the amphibious task force's mission and must provide sufficient area for conducting necessary sea, air, and land operations.

Commander, Amphibious Task Force (CATF). The CATF has overall command and responsibility for the Amphibious Operation from the planning phase, where he shares responsibility with the Commander, Landing Force (CLF), through the assault phase until the amphibious forces are established ashore. He exercises tactical control over all amphibious shipping, escorting combatants, and embarked landing forces. After reaching the AOA, he exercises tactical control (TACON) of all ships and aircraft within the AOA. The CATF transfers control of the assault forces to the CLF when the latter has established his requisite command and control capabilities ashore.

Commander, Landing Force (CLF). The CLF has command of all assault forces assigned to the amphibious operation. He shares planning responsibility with the CATF but relinquishes TACON until he has established headquarters ashore and can assume command of the assault operation.

Tactical Air Command Center (TACC). The principal U.S. Marine Corps air operation installation from which aircraft and air warning functions of tactical air operations are directed. It is the senior agency of the Marine Air Command and Control System (MACCS) from which the Marine Corps tactical air commander can direct and control tactical air operations and coordinate such air operations with other services.

III. GENERAL INFORMATION

Air Contingency Force (ACF). These combat ready forces have been developed by both FMF commanders. ACFs provide air-deployable forces to the unified commanders, with lead elements ready to deploy within 18 hours notification. ACFs provide great versatility in that they can be used as part of the fly-in-echelon of a maritime prepositioning force, as reinforcement for an amphibious force, or as lead element of a MAGTF. ACFs are on standby on each coast and on Okinawa.

Maritime Prepositioning Force (MPF). MPFs give combatant commanders a greater dimension in mobility, readiness, and global responsiveness. The MPF program involves a total of 13 ships, organized into three squadrons. MPSRON-1 operates in the Eastern Med., MPSRON-2 operates in the Indian Ocean, and MPSRON-3 in the Western Pacific. With these ships already loaded with unit equipment and 30 days of supplies, Marines and sailors can be airlifted to the objective area to “marry-up” with these specially designed, strategically deployed ships. Each MPSRON is configured to not only support a MEB size force using all assigned ships, but smaller MAGTFs as well, using less than the entire squadron. Indeed, following Desert Storm, the ships were reconfigured to support crisis action modules, which allow the option of using this concept in response to a future crisis.

Norway Prepositioning Program/Norway Air-Landed MAGTF (NALM). Similar in concept to the MPF, this program provides prepositioned supplies and combat equipment in Norway for an airlifted MEB.

T-AVB Aviation Logistics Support Ship. Two ships (*Wright* and *Curtiss*), kept in reduced operating status during peacetime, provide the capability to carry the vans and equipment of a Marine Corps aviation intermediate maintenance activity and transport them to the desired theater of operation. They have both a roll-on/roll-off and self-sustaining containership configuration which permit them to off-load both alongside and offshore. After the aviation equipment is off-loaded, they can revert to a standard sealift role to carry 600 containers if required. Both ships were activated for Desert Storm.

T-AH Hospital Ship. (*Mercy* [Oakland CA] and *Comfort* [Baltimore MD]). Each has 1000 hospital beds and 12 operating rooms. Both ships normally maintain a skeleton crew during peacetime. The medical staffs are supplied by personnel from naval hospitals and clinics in CONUS.

Marine Corps 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	Same as Army M1A1. See Army section for details.

Marine Corps Aircraft. (See Navy section for info on F/A-18, EA-6B, CH-46E, CH-53E)

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.
V-22 Osprey	275 MPH cruise, 300 MPH dash, 24 Troops or 12 litters, cargo capacity: 10k internal, 15k external. Has potential SOF application. Fielding to begin FY99.
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.

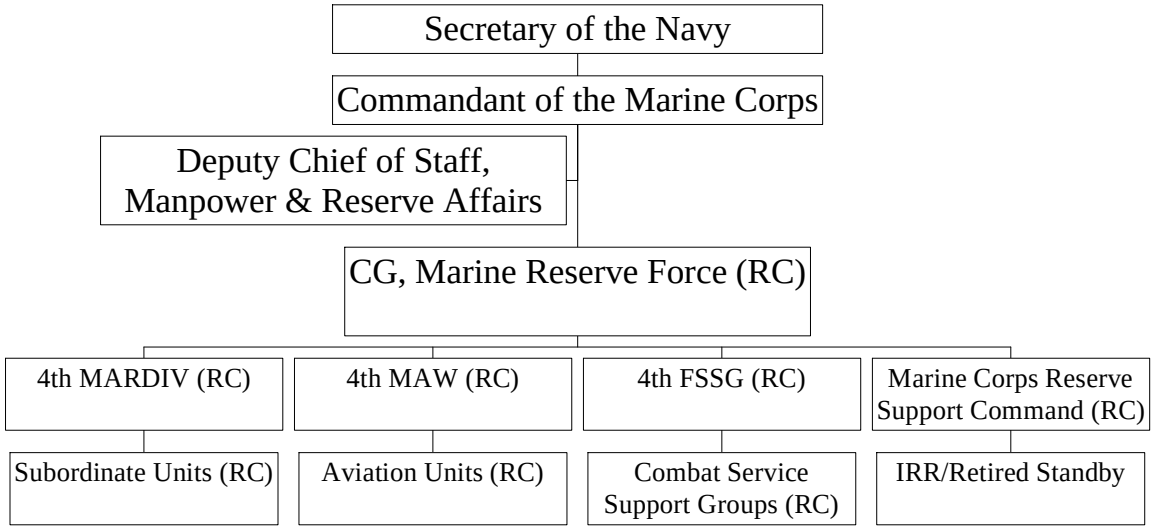
IV. MARINE CORPS RESERVE

Organization: The Marine Corps Reserve augments and reinforces Active Component Units. Selected Marine Corps Reserve units are considered "M-Day" assets. The Active and Reserve components are closely integrated through horizontal fielding of equipment, weaponry, technology, and training. When task organized, there is no distinction between Active and Reserve component Marines. Major components are the 4th Marine Division (Reinforced), the 4th Marine Aircraft Wing, the 4th Force Service Support Group, and the Marine Corps Reserve

Support Command. Selected Reserve units are prepared to independently accomplish a variety of assignments or perform assigned tasks with Active component units.

The Marine Corps Individual Ready Reserve is a source of individual manpower to be used during mobilization for base support and combat casualty replacement. Mobilization plans include provisions for intensive combat refresher training and individual skill training prior to deployment. The authorized personnel strength of the Marine Corps Reserve is 42,200.

Marine Corps Reserve
Command and Control



U.S. AIR FORCE*

I. Air Force Vision

Global vigilance, reach and power.

II. Air Force Mission

The mission of the U.S. Air Force is to defend the United States and protect its interests through aerospace power.

III. Organization

The Department of the Air Force incorporates all elements of the U.S. Air Force. It is administered by a civilian secretary appointed by the president and is supervised by a military chief of staff. The Secretariat and Air Staff help the secretary and the chief of staff direct the Air Force mission.

To assure unit preparedness and overall effectiveness of the Air Force, the secretary of the Air Force is responsible for and has the authority to conduct all affairs of the Department of the Air Force. This includes training, operations, administration, logistical support and maintenance, and welfare of personnel. The secretary's responsibilities include research and development, and any other activity prescribed by the president or the secretary of defense.

The secretary of the Air Force exercises authority through civilian assistants and the chief of staff, but retains immediate supervision of activities that involve vital relationships with Congress, the secretary of defense, other governmental officials and the public.

Principal civilian assistants within the Secretariat are the under secretary of the Air Force, deputy under secretary for international affairs, assistant secretary for acquisition, assistant secretary for space, assistant secretary for manpower, Reserve affairs, installations and environment, and assistant secretary for financial management and comptroller.

The Office of the Secretary of the Air Force includes a general counsel, auditor general, inspector general, administrative assistant, public affairs director, legislative liaison director, small and disadvantaged business utilization director, and certain statutory boards and committees.

The Air Staff

The chief of staff, U.S. Air Force, is appointed by the president, with the consent of the Senate, from among Air Force general officers - normally for a four-year term. The chief of staff serves as a member of the Joint Chiefs of Staff and the Armed Forces Policy Council. In the JCS capacity, the chief is one of the military advisers to the president, the National Security Council and the secretary of defense. Also, the chief is the principal adviser to the secretary of the Air Force on Air Force activities.

*The source of this information, unless otherwise noted are direct excerpts from USAF Fact Sheets located on Air Force Link (http://www.af.mil). While most of the information has been copied verbatim, edits to the text have been made for this audience.

The chief of staff presides over the Air Staff, transmits Air Staff plans and recommendations to the secretary of the Air Force and acts as the secretary's agent in carrying them out. The chief is responsible for the efficiency of the Air Force and the preparation of its forces for military operations. The chief of staff supervises the administration of Air Force personnel assigned to unified organizations and unified and specified commands. Also, the chief supervises support of these forces assigned by the Air Force as directed by the secretary of defense. In addition, the chief of staff has responsibility for activities assigned to the Air Force by the secretary of defense.

Other members of the Air Staff are the vice chief of staff, assistant vice chief of staff, chief master sergeant of the Air Force, deputy chief of staff for personnel, deputy chief of staff for plans and programs, deputy chief of staff for air and space operations, deputy chief of staff for installations and logistics, Air Force historian, chief scientist, chief of the Air Force Reserve, chief of the National Guard Bureau, the U.S. Air Force Scientific Advisory Board, judge advocate general, director of test and evaluation, surgeon general and chief of chaplain service.

Field Organizations

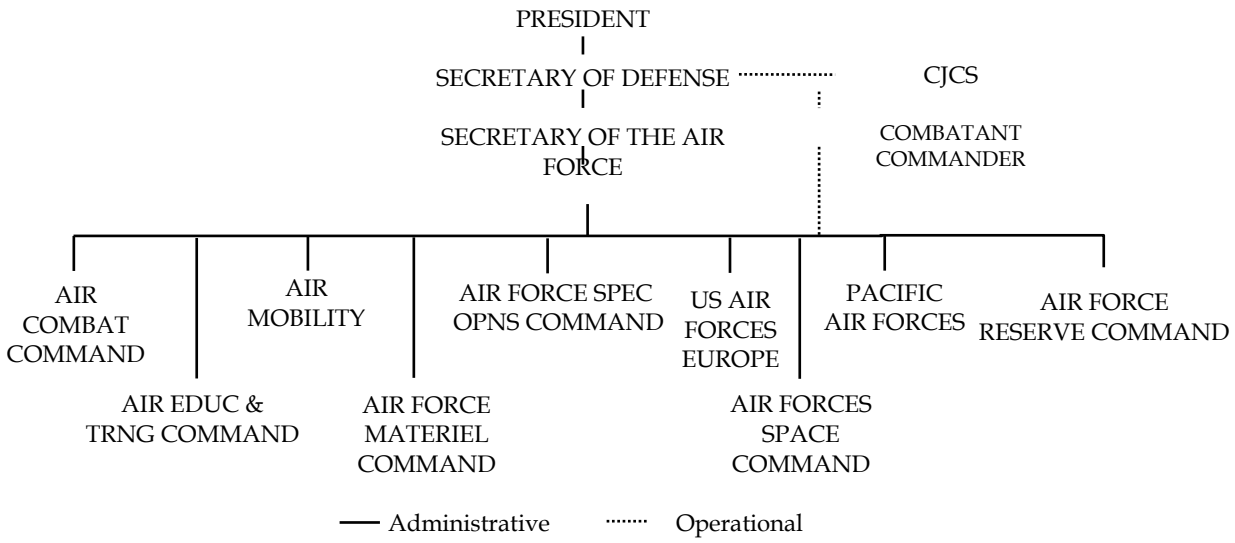
The nine major commands, 35 field operating agencies, four direct reporting units and their subordinate elements constitute the field organization that carries out the Air Force mission. In addition, there are two Reserve components, the Air Force Reserve, which is also a major command, and the Air National Guard.

Major commands are organized on a functional basis in the United States and a geographic basis overseas. They accomplish designated phases of Air Force worldwide activities. Also, they organize, administer, equip and train their subordinate elements for the accomplishment of assigned missions. Major commands generally are assigned specific responsibilities based on functions. In descending order of command, elements of major commands include numbered air forces, wings, groups, squadrons and flights.

The basic unit for generating and employing combat capability is the wing, which has always been the Air Forces prime war-fighting instrument. 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. Other wings continue to operate a single aircraft type ready to join air campaigns anywhere they are needed. Air base and specialized mission wings such as training, intelligence and test also support the Air Force mission. Within the wing, operations, logistics and support groups are the cornerstones of the organization.

Field operating agencies and direct reporting units are other Air Force subdivisions and report directly to Headquarters U.S. Air Force. They are assigned a specialized mission that is 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 Headquarters U.S. Air Force 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.

Chain of Command



AF Air and Space Inventory

Attack, Observation & Battle Management:

- Total: 431
- Active, 277; Guard, 102; Reserve, 52

Bombers:

- Total: 201
- Active, 191; Guard, 1; Reserve, 9

Fighters:

- Total: 2,057
- Active, 1,384; Guard, 603; Reserve, 70

Helicopters:

- Total: 203
- Active, 162; Guard, 18; Reserve, 23

Satellites:

- Total: 40
- AF launches: 157

Tankers:

- Total: 661
- Active, 344; Guard, 239; Reserve, 78

Trainers:

- Total (all Active): 1,164

Transports and Special Duty:

- Total: 1,027
- Active, 579; Guard, 254; Reserve, 194

Unmanned Aerial Reconnaissance System:

- Total (all Active): 20

ICBMs:

- Total: 550

Reconnaissance:

- Total: 62
- Active, 52; Reserve, 10

Figure Source: Secretary of the Air Force, Office of Public Affairs SAF/PAX
as of April 2003

IV. Major Command Structure

AIR COMBAT COMMAND

Air Combat Command, with headquarters at Langley Air Force Base, Va., is a major command created June 1, 1992 by combining its predecessors Strategic Air Command and Tactical Air Command . ACC is the primary provider of air combat forces to America's unified combatant commands.

Mission

Air Combat Command is the main provider of combat air forces to America's warfighting commands. ACC flies fighter, bomber, reconnaissance, battle-management, electronic-combat and rescue aircraft. It also provides command, control, communications and intelligence systems, and conducts 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 provides nuclear forces for U.S. Strategic Command, theater air forces for the five geographic unified commands (U.S. Northern Command, U.S. Central Command, U.S. European Command, U.S. Pacific Command, and U.S. Southern Command). ACC provides air defense forces to the North American Aerospace Defense Command. Additionally, ACC provides support to U.S. Strategic Command's Joint Task Force for Computer Network Operations.

Personnel and Resources

More than 110,000 active-duty members and civilians make up ACC's work force. When mobilized, more than 61,000 members of the Air National Guard and Air Force Reserve, along with about 618 aircraft, are assigned to ACC. In total, ACC and ACC-gained units fly more than 1,750 aircraft.

Organization

ACC's forces are organized under four numbered air forces, one Air Force Reserve numbered air force and four primary subordinate units. The command operates 16 major bases, including tenant units on 13 non-ACC bases throughout the United States. 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, with headquarters at Tyndall AFB, Fla., provides surveillance and command and control for air defense forces for the continental United States in support of the North American

Aerospace Defense Command (NORAD). As an ACC numbered air force, it provides the forces necessary for the defense of the United States.

First Air Force units include the Continental United States Regional Air Operations Center, NORAD System Support Facility and the Southeast Air Defense Sector at Tyndall AFB, Fla., the Northeast Air Defense Sector in Rome, N.Y., and the Western Air Defense Sector at McChord AFB, Wash. Ten Air National Guard fighter wings are assigned to 1st Air Force, and as many as 30 ANG fighter wings reported to this numbered air force during the early months of Operation Noble Eagle.

Eighth Air Force, with headquarters at Barksdale Air Force, La., provides combat-ready information operations, command and control, intelligence, surveillance and reconnaissance, and strike forces to combatant commanders around the world.

Other Eighth Air Force units include the 67th Information Operations Wing, Lackland AFB, Texas; the 70th Intelligence Wing, Fort Meade, Md.; the 116th Air Control Wing (E-8C JSTARS), Robins AFB, Ga.; the 552nd Air Control Wing (E-3B/C), Tinker AFB, Okla.; the 819th RED HORSE Squadron, Malmstrom AFB, Mont.; and the 3rd Air Support Operations Group, Fort Hood, Texas.

Bases:

Barksdale AFB, La. -- 2nd Bomb Wing: B-52H

Beale AFB, Calif. -- 9th Reconnaissance Wing: U-2, T-38. Selected as beddown base for RQ-48 Global Hawk unmanned aerial vehicle

Minot AFB, N.D. -- 5th Bomb Wing: B-52H

Offutt AFB, Neb. -- 55th Wing: E-4B, RC-135S/U/V/W, TC-135W, WC-135W, OC-135B

Whiteman AFB, Mo. -- 509th Bomb Wing: B-2, T-38

Ninth Air Force, with headquarters at Shaw Air Force Base, S.C., controls ACC fighter forces based on the East Coast of the United States, and serves as the air component for a 25-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, Fla.; 18th Air Support Operations Group, Pope AFB, N.C.; 820th Security Forces Group, Moody AFB, Ga.; 823d RED HORSE Squadron, Hurlburt Field, Fla.; and the 5th Combat Communications Group, Robins AFB, Ga.

Bases:

Langley AFB, Va. -- Headquarters Air Combat Command, 1st Fighter Wing: F-15C/D, selected as first operational F/A-22 wing (planes begin arriving in 2004)

Moody AFB, Ga. -- 347th Rescue Wing: HH-60G, HC-130P

Seymour Johnson AFB, N.C. -- 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, S.C. -- Headquarters 9th Air Force; 20th Fighter Wing: F-16C/D

Tenth Air Force, located at Naval Air Station Joint Reserve Base, Fort Worth, Texas, 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, Ariz., 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 Twelfth Air Force units include: 388th Fighter Wing (F-16C/D), Hill AFB, Utah ; 552nd Air Control Wing (E-3B/C) and 3rd Combat Communications Group, Tinker AFB, Okla.; the 1st Air Support Operations Group, Fort Lewis, Wash.; and 820th RED HORSE Squadron, Nellis AFB, Nev.

Bases:

Cannon AFB, N.M. -- 27th Fighter Wing: F-16C/D

Davis-Monthan AFB, Ariz. -- Headquarters 12th Air Force; 355th Wing: A/OA-10 (EC-130H, stationed at Davis-Monthan, is an Eighth Air Force asset and controlled by the 55th Wing at Offutt Air Force Base)

Dyess AFB, Texas -- 7th Bomb Wing: B-1

Ellsworth AFB, S.D. -- 28th Bomb Wing: B-1

Holloman AFB, N.M. -- 49th Fighter Wing: F-117, T-38, F-4F

Mountain Home AFB, Idaho -- 366th Fighter Wing: F-15C/D/E, F-16D, F-16C/J, and the Air Expeditionary Force Battlelab

Primary Subordinate Units

Air Warfare Center, at Nellis Air Force Base, Nev., 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, Fla. are assigned to the center.

Also at Nellis is the 57th Wing (A-10, F-15C/D/E, F-16C/D, HH-60G and RQ-1A/B Predator unmanned aerial vehicle); 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). Also assigned are the UAV Battlelab and the Command and Control Training and Innovation Group, located at Hurlburt Field, Fla

The 53rd Wing at Eglin AFB, Fla. is 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/A-22, B-1, B-2, B-52, HH-60G, RQ-1 Predator and RQ-4 Global Hawk) at Nellis, the 53rd Electronic Warfare Group at Eglin, and the 53rd Weapons Evaluation Group (E-9) at Tyndall AFB, Fla. Also, the 53rd Test Management Group at Eglin coordinates the wing's test process, directing resources and priorities within the wing nationwide.

The Air Intelligence Agency, with headquarters at Lackland AFB, Texas, was activated Oct. 1, 1993. On Feb. 1, 2001, AIA was realigned under ACC and Eighth Air Force. The agency serves as their primary information operations force provider normalizing and synchronizing information operations capabilities into the warfighter's arsenal. With the realignment, the AIA commander serves as the Eighth Air Force deputy commander for information operations. AIA's mission is to gain, exploit, defend and attack information to ensure superiority in the air, space and information domains. The agency's more than 13,000 people worldwide deliver flexible collection, tailored air and space intelligence, weapons monitoring, and information warfare products and services. AIA also includes the National Air Intelligence Center, Wright-Patterson AFB, Ohio; and the Air Force Information Warfare Center, also at Lackland.

The Air and Space Expeditionary Force Center, located at Langley AFB, aids expeditionary air force operations by assisting in the planning and scheduling of AEF assets, identifying and refining training requirements, guiding deployment and redeployment planning, monitoring readiness, and providing continuity across the AEF spectrum.

The Air Force Rescue Coordination Center is also located at Langley AFB. As the executive agent for inland U.S. search and rescue, the center serves as the single agency responsible for coordinating on-land federal search and rescue activities in the 48 contiguous United States . Additionally, the center provides U.S. SAR assistance to Mexico and Canada.

AIR EDUCATION AND TRAINING COMMAND

Air Education and Training Command, with headquarters at Randolph Air Force Base near San Antonio, Texas, was established July 1, 1993, with the realignment of Air Training Command and Air University. AETC is "The First Command ... Tomorrow's Aerospace Dominance Begins Here" -- the first to touch the life of almost every Air Force member.

Mission

AETC's mission is to replenish the combat capability of America's Air Force with high quality, professional airmen.

Personnel and Resources

More than 48,000 active-duty members and 14,000 civilian personnel make up AETC. The command has responsibility for approximately 1,600 aircraft.

Organization

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

AIR FORCE MATERIEL COMMAND

With headquarters at Wright-Patterson Air Force Base, Ohio, Air Force Materiel Command was created July 1, 1992. The command was formed through the reorganization of Air Force Logistics Command and Air Force Systems Command.

Mission

To develop, acquire and sustain aerospace power needed to defend the United States and its interests ... today and tomorrow. AFMC is organized into eight specific mission areas to accomplish its number one objective of supporting the warfighter. Mission areas include:

- Product Support: provide world-class products and services, delivering dominant aerospace systems and superior life-cycle management for war-fighting systems.

- Information Services: develop, acquire, integrate, implement, protect and sustain combat support information systems for the U.S. Air Force and Department of Defense customers, making sure they have the right information anywhere, any time, on demand.

- Supply Management: provide and deliver repairable and consumable items needed in war and peace (right product -- right place -- right time -- right price).

- Depot Maintenance: repair systems and spare parts that ensure readiness in peacetime and provide sustainment for combat forces in wartime.

- Science and Technology: discover, develop, demonstrate and transition affordable advanced technologies to achieve Air Force core competencies.

- Test and Evaluation: provide timely, accurate and affordable knowledge and resources to support weapons and systems research, development and employment.

- Information Management: provide secure, reliable, interoperable communication and information services/access any time, anywhere, to AFMC customers, partners and employees.

Installations and Support: provide base support services, property management and

AIR FORCE SPACE COMMAND

Air Force Space Command, created Sept. 1, 1982, is a major command with headquarters at Peterson Air Force Base, Colo. AFSPC defends America through its space and intercontinental ballistic missile (ICBM) operations, vital force elements in projecting global reach and global power.

Mission

Air Force Space Command makes space reliable to the warfighter by continuously improving the command's ability to provide and support combat forces -- assuring their access to space. In addition, the command's ICBM forces deter any adversary contemplating the use of weapons of mass destruction. AFSPC has four primary mission areas:

- Space forces support involves launching satellites and other high-value payloads into space using a variety of expendable launch vehicles and operating those satellites once in the medium of space.

- Space control ensures friendly use of space through the conduct of counterspace operations encompassing surveillance, negation, and protection.

- Force enhancement provides weather, communications, intelligence, missile warning, and navigation. Force enhancement is support to the warfighter.

- Force application involves maintaining and operating a rapid response, land-based ICBM force as the Air Force's only on-alert strategic deterrent.

People

Approximately 40,000 people, including 25,400 active-duty military and civilians, and 14,000 contractor employees, combine to perform AFSPC missions.

Organization

Air Force Space Command has two numbered air forces. Fourteenth Air Force provides space

warfighting forces to U.S. Space Command, and is located at Vandenberg AFB, Calif. Fourteenth Air Force manages the generation and employment of space forces to support U.S. Space Command and North American Aerospace Defense Command (NORAD) operational plans and missions. Twentieth Air Force is located at F.E. Warren AFB, Wyo. Twentieth Air Force operates and maintains AFSPC's ICBM weapon systems in support of U.S. Strategic Command war plans.

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, then turns systems over to user agencies. It supports the Program Executive Office for Space on the NAVSTAR Global Positioning, Defense Satellite Communications and MILSTAR systems. SMC also supports the Titan IV, Defense Meteorological Satellite and Defense Support programs, and Follow-on Early Warning System. In addition, it supports development and acquisition of land-based intercontinental ballistic missiles for the Air Force Program Executive Office for Strategic Systems.

The Space Warfare Center at Schriever AFB, Colo. is also part of the command. The center plays a major role in fully integrating space systems into the operational Air Force. Its force enhancement mission looks at ways to use space systems to support warfighters in the areas of navigation, weather, intelligence, communications and theater ballistic missile warning, and how these apply to theater operations.

AFSPC is the major command providing space forces for the U.S. Space Command and trained ICBM forces for U.S. Strategic Command. AFSPC also supports NORAD with ballistic missile warning information, operates the Space Warfare Center to develop space applications for direct warfighter support, and is responsible for the Department of Defense's ICBM follow-on operational test and evaluation program.

AFSPC bases, stations and units include: Cheyenne Mountain Air Station, Schriever, Peterson and Buckley AFBs, Colo.; Onizuka AS and Los Angeles and Vandenberg AFBs, Calif.; Cape Canaveral AS and Patrick AFB, Fla.; Minot AFB and Cavalier AS, N.D.; F.E. Warren AFB, Wyo.; Malmstrom AFB, Mont.; Clear AS, Alaska; New Boston AS, N.H.; and Thule AB, Greenland.

Space Capabilities

Spacelift operations at the East and West Coast launch bases provide services, facilities and range safety control for the conduct of DOD, National Aeronautics and Space Administration (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 attack on North America. Space surveillance radars provide vital information on the location of satellites and space debris for the nation and the world. With a readiness rate above 99 percent, America's ICBM team plays a

critical role in maintaining world peace and ensuring the nation's safety and security.

Resources

AFSPC operates and supports the Global Positioning System, Defense Satellite Communications Systems Phase II and III, Defense Meteorological Support Program, Defense Support Program, NATO III and IV communications and Fleet Satellite Communications System UHF follow-on and MILSTAR satellites. AFSPC currently operates the Atlas II, Delta II, Titan II and Titan IV launch vehicles. This includes all of the nation's primary boosters from the Eastern and Western ranges and range support for the space shuttle. AFSPC also operates the nation's primary source of continuous, real-time solar flare warnings. The command also operates a worldwide network of satellite tracking stations to provide communications links to satellites -- a system called the Air Force Satellite Control Network.

Ground-based radars used primarily for ballistic missile warning include the Ballistic Missile Early Warning System, PAVE PAWS and PARCS 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.

The ICBM force consists of Minuteman III and Peacekeeper missiles that provide the 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 -- longer than any other U.S. strategic force. More than 500 ICBMs are currently on alert in reinforced concrete launch facilities beneath the Great Plains.

AFSPC is the Air Force's largest operator of UH-1N and HH-1H Huey helicopters, responsible for missile operations support and security.

AIR FORCE SPECIAL OPERATIONS COMMAND

Air Force Special Operations Command (AFSOC), was established May 22, 1990, with headquarters at Hurlburt Field, Fla. 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, and its U.S. Air Force Special Operations School, is one of four component commands under USSOCOM.

Mission

AFSOC is America's specialized air power. It provides Air Force special operations forces for worldwide deployment and assignment to regional unified commands. AFSOC's core tasks have been grouped into four mission areas:

Forward presence and engagement includes training, assisting and assessing foreign aviation organizations to integrate, employ, sustain and defend their resources during internal conflict, regional crisis or war. It also includes advising and assisting U.S. theater commanders to

determine the capabilities of forces within the area of responsibility, including the interaction between civil and military organizations.

Information operations focuses on the information systems, command and control systems, perceptions, and decision-making cycles of adversaries while defending corresponding friendly elements. Information operations span the spectrum of peace through conflict and major theater warfare and are valued primarily for their indirect effect and ability to enhance the effectiveness of other operations.

Precision employment and strike includes precise and responsive support to special operations or conventional forces. PE/S surface elements and airborne platforms provide adverse weather weapons delivery and aerospace surface interface across the full spectrum of conflict. The ability to deploy globally and strike precisely from the air or ground provides force multiplication, minimizes collateral damage, allows the discriminate employment of asymmetric force and permits freedom of maneuver for supported forces. By the year 2027, this mission area will include nonlethal weapon systems and nondestructive attack against an adversary and its physical infrastructure.

Special operations forces mobility includes rapid, global airlift of people and equipment through hostile air space to conduct special operations. This mission area also includes specialized refueling operations of special operations forces assets and covert, clandestine or overt tasks.

Personnel and Resources

AFSOC has approximately 12,500 active-duty, Air Force Reserve, Air National Guard and civilian personnel. The command's three active-duty flying units are composed of more than 100 fixed- and rotary-wing aircraft.

AFSOC is scheduled to replace much of its aging fleet with 50 CV-22 Ospreys by the year 2017. The CV-22 combines the speed and range of a turboprop aircraft with the vertical takeoff, landing and hover capabilities of a helicopter. AFSOC is scheduled to get the first three aircraft in 2007, and achieve initial operational capability with six aircraft in 2009.

Organization

The 16th Special Operations Wing, at Hurlburt Field, is the Air Force's only active-duty Special Operations Wing. The 16th SOW is primarily responsible to Central, Atlantic and Southern commands, but also provides augmentation forces to AFSOC groups forward deployed in Europe and the Pacific.

Units assigned to the wing include the 4th Special Operations Squadron, which flies the AC-130U gunship; the 6th SOS, which is the wing's combat aviation advisory unit; the 8th SOS, which flies the MC-130E Combat Talon I; the 15th SOS, which flies the MC-130H Combat Talon II; the 16th SOS, equipped with the AC-130H gunship; and the 20th SOS, which flies the MH-53M Pave Low helicopter. The 9th SOS, located on nearby Eglin AFB, Fla., flies the MC-130P Combat Shadow.

The 352nd Special Operations Group, at Royal Air Force Mildenhall, England, is the Air Force component for Special Operations Command Europe. Its squadrons include the 7th SOS which flies the MC-130H; the 21st SOS equipped with the MH-53M; the 67th SOS with the MC-130P; and the 321st Special Tactics Squadron.

The 353rd Special Operations Group, at Kadena Air Base, Japan, is the Air Force component for Special Operations Command Pacific. Its squadrons are the 1st SOS which flies the MC-130H; the 17th SOS with the MC-130P; and the 320th Special Tactics Squadron at Kadena.

The 720th Special Tactics Group, with headquarters at Hurlburt Field has special operations combat controllers, pararescuemen and combat weathermen who deploy jointly in teams by air, land and sea into forward, non-permissive environments. The unit's missions include air traffic control to establish air assault landing zones, close air support for strike aircraft, personnel recovery, trauma care for injured personnel and tactical meteorological forecasting for Army Special Operations Command. Squadrons include the 21st and 24th STS at Pope AFB, N.C; the 22nd STS at McChord AFB, Wash.; and the 23rd STS and 10th Combat Weather Squadron at Hurlburt Field.

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 school offers more than 20 courses covering everything from regional affairs and cross-cultural communications to antiterrorism awareness and psychological operations.

The 18th Flight Test Squadron, also at Hurlburt Field, provides expertise to improve the capabilities of special operations forces worldwide. The squadron conducts operational and maintenance suitability tests and evaluations for equipment, concepts, tactics and procedures for employment of special operations forces. Many of these tests are joint command and joint service projects.

Air Reserve Components

AFSOC gains some air reserve component units when these organizations are mobilized. The Reserve unit is the 919th Special Operations Wing (AFRC) at Duke Field, Fla. The wing includes the 711th SOS, which flies the MC-130E, and the 5th SOS, which flies the MC-130P.

The 193rd Special Operations Wing at Harrisburg International Airport, Pa., is AFSOC's primary Air National Guard unit and flies the EC-130E Commando Solo. Other Guard units include the 123rd Special Tactics Flight, Standiford Field, Ky.; the 107th Air Weather Flight, Selfridge Air National Guard Base, Mich.; the 146th Air Weather Flight, Pittsburgh, Pa.; the 181st AWF, Dallas; and the 280th Combat Communications Squadron at Dothan, Ala.

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 primary mission is rapid, global mobility and sustainment for America's armed forces. The command also plays a crucial role in providing humanitarian support at home and around the world. The men and women of the Air Mobility Command -- active duty, Air National Guard, Air Force Reserve and civilians -- provide tactical and strategic 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 United States 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’s mission encompasses more than 141,000 active-duty and Air Reserve Component military and civilian personnel. They include approximately 51,966 active duty, 8,215 civilians, 43,444 Air Force Reserve and 37,902 Air National Guard

Resources

AMC's strategic mobility aircraft include the C-5 Galaxy, C-9A Nightingale, KC-10 Extender, C-17 Globemaster III, KC-135 Stratotanker and the C-141 Starlifter. The stateside based C-130 Hercules is AMC’s tactical airlifter. Operational support aircraft are the VC-9, VC-25 (Air Force One), C-20, C-21, C-22, C-32, C-37, C-137, EC-135 and UH-1.

Organization

Air Mobility Command has two numbered air forces, and for command, control and communications, the Tanker Airlift Control Center and the Air Mobility Warfare Center are assets. The Tanker Airlift Control Center, located with the headquarters at Scott AFB, Ill., is the agency for centralized command and control. It schedules and tracks strategic tanker and airlift resources worldwide. Air Force and Department of Defense support taskings are channeled through this hub of mobility control.

The Air Mobility Warfare Center is located at Fort Dix, N.J., adjacent to McGuire AFB, N.J. One of the responsibilities of the center is the Global Reach Laydown Packages system for contingency or war.

AMC assigns its active-duty resources to two numbered air forces, the 15th Air Force at Travis AFB, Calif., and the 21st Air Force at McGuire AFB, N.J.

AMC bases are: Andrews AFB, Md.; Charleston AFB, S.C.; Dover AFB, Del.; Fairchild AFB, Wash.; Grand Forks AFB, N.D.; MacDill AFB, Fla.; McChord AFB, Wash.; McConnell AFB, Kan.; McGuire AFB, N.J.; Pope AFB, N.C.; Scott AFB, Ill.; and Travis AFB, Calif.

In mobilization, AMC gains 71 Air Reserve flying units at group level or above.

PACIFIC AIR FORCES

Pacific Air Forces, headquartered at Hickam Air Force Base, Hawaii, is one of nine major commands of the U.S. Air Force and is air component of the U.S. Pacific Command.

Mission

PACAF's primary mission is to provide ready air and space power to promote U.S. interests in the Asia-Pacific region during peacetime, through crisis and in war.

The command's vision is to be the most respected air warrior team employing the full spectrum of air and space power, with our Asia-Pacific partners, to ensure peace and advance freedom.

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, more than 100 million square miles. The area is home to nearly two billion people who live in 44 countries. PACAF maintains a forward presence to help ensure stability in the region.

Personnel and Resources

The command has approximately 45,000 military and civilian personnel serving in nine major locations and numerous smaller facilities, primarily in Hawaii, Alaska, Japan, Guam and South

Korea. Approximately 300 fighter and attack aircraft are assigned to the command.

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, Andersen AFB, Guam.

Major units also include 3rd Wing, Elmendorf AFB ; 8th Fighter Wing, Kunsan AB, South Korea; 15th Air Base Wing, Hickam AFB; 18th Wing, Kadena AB, Japan (Okinawa); 51st Wing, Osan AB; 343rd Wing, Eielson AFB, Alaska; 35th Fighter Wing, Misawa AB, Japan; 374th Airlift Wing, Yokota AB; and the 36th Air Base Wing, Andersen AFB.Organization

UNITED STATES AIR FORCES IN EUROPE

U.S. Air Forces in Europe, with headquarters at Ramstein Air Base, Germany, is a major command of the U.S. Air Force. It is also the air component of the U.S. European Command, a Department of Defense unified command and the U.S. component of the North Atlantic Treaty Organization.

Mission

As the face of Europe has changed since the fall of the Berlin Wall, USAFE has changed as well. USAFE has transitioned from a fight-in-place fighter force postured for a large-scale conflict, to an Air Expeditionary Force with a mobile and deployable mix of people and resources that can simultaneously operate in multiple locations.

Since the end of the Cold War, USAFE's role in Europe and Africa has expanded from warfighting to a mission that includes supporting humanitarian and peacekeeping operations, as well as other non-traditional contingencies throughout its area of responsibility.

In peacetime, USAFE trains and equips U.S. Air Force units pledged to NATO. USAFE plans, conducts, controls, coordinates and supports air and space operations to achieve U.S. national and NATO objectives based on tasking by the commander in chief, United States European Command.

In wartime, USAFE assets, augmented by people, aircraft and equipment from other major commands, the Air National Guard and Air Force Reserve, come under the operational command of NATO. The command's inventory of aircraft is ready to perform close air support, air interdiction, air defense, in-flight refueling, long-range transport and support of maritime operations.

In fulfilling its NATO responsibilities, USAFE maintains combat-ready wings dispersed from Great Britain to Turkey. The command supports U.S. military plans and operations

in Europe, the Mediterranean, the Middle East and parts of Africa.

USAFE remains a formidable force in Europe despite a rapid drawdown that saw its main operating bases cut by 67 percent following the end of the Cold War. As witnessed in the command's support of contingency and humanitarian operations throughout Europe and parts of Africa, USAFE remains a highly responsive combat command with a strong, capable force.

Personnel and Resources

More than 35,000 active-duty, Reserve and civilian employees are assigned to USAFE. Equipment assets include about 225 fighter, attack, tanker and transport aircraft, and a full complement of conventional weapons.

Organization

USAFE is organized geographically through two numbered air forces -- 3rd Air Force, with headquarters at RAF Mildenhall, England; and 16th Air Force, with headquarters at Aviano Air Base, Italy.

The command has six main operating bases – Royal Air Force Bases Lakenheath and Mildenhall in England; Ramstein and Spangdahlem air bases in Germany; Aviano AB, Italy, and Incirlik AB, Turkey.

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

The 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 Air Reserve Base, 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 called to active duty 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 (52,057) 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 60,000 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 Operation Desert Storm 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, C-9 Nightingales, 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 Engagement. 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 counternarcotics 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*

The Air National Guard is one of seven Reserve components of the United States Armed Forces that augments the Active components in the performance of their missions.

Administered by the National Guard Bureau, a joint bureau of the departments of the Army and Air Force, the Air National Guard has both a federal and state mission. The dual mission, a provision of the United States Constitution and the United States Code of Laws, results in each Guard member holding having a dual status - first as a member in the National Guard of his/her state as well as 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/support units are assigned to most Air Force major commands to carry out missions compatible with training, mobilization readiness, and contingency operations such as Operation JOINT (ENDEAVOR) GUARD in Bosnia, Operation PROVIDE COMFORT in Iraq and Turkey, Operation SOUTHERN WATCH in Kuwait and Operation ALLIED FORCE (Kosovo). Since September 11, 2001, the Air National Guard has been at the forefront of the War on Terrorism, providing support for both the homeland and overseas as part of Operations ENDURING FREEDOM and NOBLE EAGLE.

The 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 United States 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.

*The source of this information, unless otherwise noted are direct excerpts from National Guard Fact Sheet located at http://www.ngb.army.mil/downloads/fact_sheets/ang.asp.

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.

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 Air National Guard has more than 106,600 officers and enlisted personnel who serve in 88 flying units and 280 independent support units. The primary sources of full-time support for Air National Guard units are the dual-status military technicians/guardsmen on active duty. These personnel 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/territorial governors until mobilized for Federal duty.

Flying Units/Functions and Capabilities: Besides providing 100 percent of the United States air defense interceptor force, the Air National Guard performs many other Air Force-related roles and missions.

The Air National Guard provides:

Air Traffic Control	64%
Tactical Airlift	49%
Air Refueling KC-135 Tankers	45%
General Purpose Fighter Force	32%
Rescue and Recovery Capability	23%
Tactical Air Support	16%
Weather Flights	15%
Strategic Airlift Forces	9%
Special Operations Capability	6%

- Airlift squadrons, flying C-130 Hercules aircraft, transport personnel, equipment and supplies. Eleven aeromedical evacuation units augment the Air Force. The Air National Guard's airlift capability includes one C-5 Galaxy and two C-141 Starlifter units. 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 OA-10s provide forward air control support of close-air support missions
- The general-purpose fighter force is equipped with F-15, F-16, A-10 and OA-10 aircraft.

A New Mission -- JSTARS: On Sept. 30, 2002, the Georgia Air National Guard's 116th Bomb Wing and the active Air Force's 93rd Air Control Wing ended one era and begin anew as the

USAF's first blended wing - the 116th Air Control Wing. The historic ceremony took place at Robins AFB near Valdosta, Ga. and was attended by Air Force Secretary James Roche.

The 116th Air Control Wing is the first of its kind as part of the future total force initiative. This initiative focuses on active duty, Guard and Reserve members working side by side. The merger is expected to increase the combat effectiveness and organizational efficiency of the E-8C JSTARS .

The new unit supports the JSTARS mission, providing air and ground theater commanders information to gain and maintain control of the battle space. Its radar has a range of more than 150 miles, making JSTARS effective for supporting the full spectrum of roles and missions from peacekeeping operations to major theater war.

Support Units/Functions and Capabilities: Support units are essential to the Air Force mission. In the Air National Guard they include air control units; combat communications squadrons; civil engineering, engineering installation and civil engineering heavy repair squadrons 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 support units provide the following percentages of functions for Total Air Force):

Aircraft Control and Warning Forces	100%
Combat Communication	80%
Installation Engineering Capability	74%
Air Control Support Forces	68%
Civil Engineering Forces	49%
Security	38%
Aerial Port Operations	14%

- 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 unit, which falls under the Pacific Air Forces.
- Civil engineering squadrons provide engineer and firefighter forces trained and equipped to deploy on short notice. Other civil engineering squadrons provide self-sufficient, deployable civil engineering teams to perform heavy repair and maintenance on air bases and remote sites.
- ANG Aerial Port units provide trained personnel 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 personnel during their two-week annual training period or during monthly two-day unit training assemblies.

VI. Concept of Operations*

The Air force meets Joint Force Commander (JFC) requirements by presenting forces and capabilities through our Air and Space Expeditionary Force (AEF) construct. This divides our combat forces into ten equivalent AEFs, each possessing air and space warfighting and associated mobility and support capabilities. A key element of our ability to deliver these tailored and ready expeditionary forces is our development of Task Force Concepts of Operations (TF CONOPS). Our TF CONOPS describe how we fight and how we integrate with our sister services and outside agencies. They are fundamental blueprints for how we go to war. Combined with our AEF construct-the principle tool we use to present expeditionary wings, groups, and squadrons-TF CONOPS will guide our decisions in operational planning, enable us to provide scaleable, quick-reacting, tasked-organized units from the ten standing AEFs; and sustain our ability to ensure trained and ready forces are available to satisfy operational plans and contingency requirements.

The AEF construct incorporates a 15-month cycle during which two AEFs are designated as lead for a 90-day "eligibility" period. During this period, the two are either deployed or on alert for daily, worldwide expeditionary taskings, for which they are tailored and presented to the JFC as expeditionary squadrons, groups, and wings (depending on the specific requirement). Meanwhile, the remaining eight AEFs are in various stages of reconstituting, training, or preparatory spin-up. It is during this preparatory time (approximately two months) that we integrate the training-to-task of AEF squadrons immediately prior to their on-call window.

*The source of this information is a direct extract from the USAF's Posture Statement 2003, located on Air Force Link (http://www.af.mil). While most of the information has been copied verbatim, edits to the text have been made for this audience.

Yet, it is important to note that while our combat forces cycle through deployment vulnerability periods, they sustain wartime readiness throughout the 15-month training and preparation cycle-a critical driver of our 90-day eligibility window. Our AEF cycle thus precludes the need for "tiered" readiness by allowing out combat forces to remain current and capable for any contingency or operational plan.

While ensuring necessary capabilities for the JFC, AEF cycles allow us to provide our airmen with a more stable and predictable environment in which to train, re-fit, and equip. In addition, AEF scheduling makes it easier and more practicable for the Air Reserve Component (ARC) forces-Air Force Reserve Command (AFRC) and Air National Guard (ANG)-to bring their essential contributions to bear by allowing them to plan definitive absences from their civilian employment. This is a critical advantage of the AEF construct, as ARC forces comprise nearly half of the forces assigned to AEFs and contribute the majority of forces for some mission areas.

While adapting to the new strategic environment, our principal focus has been transitioning from a platform-based garrison force to a capabilities-based expeditionary force. No longer platform-centric, we are committed to making warfighting effects, and the capabilities we need to achieve them, the driving force behind our ongoing transformation.

From this point forward, all of our operational, programming, and budget decisions will be supported by a predefined capability.

Our emerging TF CONOPS will help make this essential shift by providing solutions to a variety of problems warfighters can expect to encounter in the future. Whether detailing our plans for operating in an anti-access environment or identifying how to deliver humanitarian rations to refugees, TF CONOPS lend focus on the essential elements required to accomplish the mission. They cover the complete spectrum of warfighting capabilities (deep strike, information, urban, and psychological operations, etc.) and enable us to tailor forces (expeditionary wings, groups, or squadrons) from existing AEFs to meet JFC's requirements. Responsibility for CONOPS development falls to the Major Commands, with a senior officer on the HQ/USAF Air Staff assigned to each CONOPS to serve as their "Champion," facilitating the process.

TF CONOPS directly support Secretary Rumsfeld's efforts to free scare resources trapped in bureaucracy and push them to the warfighter. They will also be the focal point for a capabilities-based Program Objective Memorandum (POM). In support of this effort, our Capabilities Review and Risk Assessment analyzes and assesses shortfalls, health, risks, and opportunities, while prioritizing required future capabilities. This helps CONOPS developers articulate any disconnects between required capabilities and developing programs, while providing senior Air Force leadership an operational, capabilities-based focus for acquisition program decision-making. TF CONOPS include:

Global Strike Task Force (GSTF) employs joint power-projection capabilities to engage anti-access and high-value targets, gain access to denied battlespace, and maintain battlespace access for all required joint/coalition follow-on operations.

Global Response Task Force (GRTF) combines intelligence and strike systems to attack fleeting or emergent, high-value or high-risk targets by surgically applying air and space power in a narrow window of opportunity, anywhere on the globe, within hours.

Homeland Security Task Force (HLSTF) leverages Air Force capabilities with joint and interagency efforts to prevent, protect, and respond to threats against our homeland-whether within or beyond U.S. territories.

Space and Command, Control, Communications, computers, Intelligence, Surveillance, and Reconnaissance (Space and C4ISR) **Task Force** harness horizontal integration of manned, unmanned, and space systems to provide persistent situation awareness and executable decision-quality information to the JFC.

Global Mobility Task Force (GMTF) provides regional combatant commanders with the planning, C2, and operations capabilities to enable rapid, timely, and effective projection,

employment, and sustainment of US power in support of US global interests-precision delivery for operational effects.

Nuclear Response Task Force (NRTF) provides the deterrent "umbrella" under which conventional forces operate, and, if deterrence fails, avails a rapid scalable response.

Air and Space Expeditionary CONOPS is the overarching context, which identifies and sequences distinctive capabilities and broad-based functions that air and space power provide the JFC to generate desired effects for national military objectives.

The Air Force is transforming around these Task Force Concepts of Operations. In addition to serving as a roadmap for operators, the TF construct will form the basis for resource allocation, future system acquisitions, and POM submissions in order to find capabilities-based solutions to warfighter problems.

VI. 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. Individuals interested in viewing the capabilities of these aircraft can, or more information on aircraft listed in this section, can go to Air Force Link, at http://www.af.mil, select library, and then Fact Sheets to view the individual capabilities of these aircraft. All data in this section is drawn from these same Fact Sheets.

A-10/OA-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
Inventory: Active force, A-10, 143 and OA-10, 70; Reserve, A-10, 46 and OA-10, 6; ANG, A-10, 84 and OA-10, 18

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; unlimited 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)
Inventory: Active duty: **AC-130H**, 8; **AC-130U**, 13; Reserve, 0; ANG, 0

B-1B LANCER
Primary Function: Long-range, multi-role, heavy bomber
Speed: 900-plus mph (Mach 1.2 at sea level)
Range: Intercontinental, unrefueled
Crew: Four (aircraft commander, copilot, offensive systems officer and defensive systems officer)
Armament: Three internal weapons bays can accommodate up to 84 Mk-82 general purpose bombs or Mk-62 naval mines, 30 CBU-87/89 cluster munitions or CBU-97 Sensor Fused Weapons and up to 24 GBU-31 JDAM GPS guided bombs or Mk-84 general purpose bombs
Inventory: Active force, 72; ANG, 18; Reserve, 0

B-2 SPIRIT
Primary function: Multi-role heavy bomber
Speed: High subsonic
Range: Intercontinental, unrefueled
Armament: Conventional or nuclear weapons
Payload: 40,000 pounds (18,144 kilograms)
Crew: Two pilots
Inventory: Active force: 21 (1 test); ANG: 0; Reserve: 0

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, Harpoon anti-ship and Have Nap missiles.
Crew: Five (aircraft commander, pilot, radar navigator, navigator and electronic warfare officer
Inventory: Active force, 85; ANG, 0; Reserve, 9

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 (empty)
Crew: 7 (pilot, co-pilot, two flight engineers and three loadmasters)
Inventory: unavailable

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)
Inventory: Active duty, 58; Air National Guard, 6; Air Force Reserve, 0

C-130 HERCULES

Primary Function: Tactical and intratheater airlift

Cargo Compartment: C-130E/H/J: length, 40 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); **C-130J-30:** length, 55 feet (16.9 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: 345 mph/300 ktas (Mach 0.49) at 20,000 feet (6,060 meters); **C-130H:** 366 mph/318 ktas (Mach 0.52) at 20,000 feet (6,060 meters); **C-130J:** 417 mph/362 ktas (Mach 0.59) at 22,000 feet (6,706 meters); **C-130J-30:** 410 mph/356 ktas (Mach 0.58) at 22,000 feet (6,706 meters)

Maximum Allowable Payload: C-130E, 45,050 pounds (20,434 kilograms); **C-130H**, 43,550 pounds (19,754 kilograms); **C-130J**, 46,631 pounds (21,151 kilograms); **C-130J-30**, 46,812 pounds (21,234 kilograms)

Maximum Normal Payload: C-130E, 36,720 pounds (16,656 kilograms); **C-130H**, 35,220 pounds (15,976 kilograms); **C-130J**, 38,301 pounds (17,373 kilograms); **C-130J-30**, 38,812 pounds (17,605 kilograms)

Range at Maximum Normal Payload: C-130E, 1,838 miles (1,597 nautical miles); **C-130H**, 2,006 miles (1,743 nautical miles); **C-130J**, 2,729 miles (2,371 nautical miles); **C-130J-30**, 2,897 miles (2,517 nautical miles)

Range with 35,000 pounds of Payload: C-130E, 1,968 miles (1,710 nautical miles); **C-130H,** 2,023 miles (1,758 nautical miles); **C-130J,** 3,062 miles (2,660 nautical miles); **C-130J-30,** 3,269 miles (2,830 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.

Inventory: Active force, 186; Air National Guard, 217; Air Force Reserve, 107

C-141B STARLIFTER

GENERAL CHARACTERISTICS

Primary Function: Cargo and troop transport

Cargo Compartment: Height, 9 feet 1 inch (2.77 meters); **length,** 93 feet 4 inches (28.45 meters); **width,** 10 feet 3 inches (3.12 meters)

Cargo Door: width, 10.25 feet (3.12 meters); **height,** 9.08 feet (2.76 meters)

Speed: 500 mph (Mach 0.74) at 25,000 feet

Range: Unlimited with in-flight refueling

Load: Either 200 troops, 155 paratroops, 103 litters and 14 seats, or 68,725 lbs (31,239 kilograms) of cargo

Crew: Five or six: two pilots, two flight engineers and one loadmaster and one navigator (added for airdrops). Aeromedical teams of two flight nurses and three medical technicians each are added for aeromedical evacuation missions.

Inventory: Active duty, 74; Air National Guard, 28; Air Force Reserve, 68

E-3 SENTRY (AWACS)
Primary Function: Airborne surveillance, command, control and communications
Speed: Optimum cruise 360 mph (Mach 0.48)
Endurance: More than 8 hours (unrefueled)
Crew: Flight crew of four plus mission crew of 13-19 specialists (mission crew size varies according to mission)
Inventory: Active force, 33; Reserve, 0; Guard, 0
E-8C JOINT STARS
Primary Function: Airborne battle management
Speed: Optimum orbit speed 390 - 510 knots (Mach 0.52 - 0.65)
Range: 9 hours (unrefueled)
Crew: Flight crew of four plus 15 Air Force and three Army specialists (crew size varies according to mission)
Inventory: Active force, 13 (16 to be delivered to Air Force by 2004); ANG, 0; Reserve, 0

F-15 EAGLE
Primary function: Tactical fighter
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
Crew: F-15A/C: one. F-15B/D/E: two
Armament: One internally mounted M-61A1 20mm 20-mm, 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.
Inventory: Active force, 396; Reserve, 0; ANG,126.

F-15E STRIKE EAGLE
Primary function: Air-to-ground attack aircraft
Speed: Mach 2.5 plus
Range: 2,400 miles (3,840 kilometers) ferry range with conformal fuel tanks and three external fuel tanks
Armament: One 20mm multibarrel 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
Inventory: Active force, 217; ANG, 0; Reserve, 0

F-16 FIGHTING FALCON
Primary Function: Multirole fighter
Builder: Lockheed Martin Corp.
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 multibarrel 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-117A NIGHTHAWK
Primary Function: Fighter/attack
Speed: High subsonic
Range: Unlimited with air refueling
Armament: Internal weapons carriage
Crew: One
Inventory: Active force, 55; ANG, 0; Reserve, 0

HC-130P/N
Primary function: Air refueling for combat search and rescue helicopters
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)
Inventory: Active force, 13; ANG, 13; Reserve,10

HH-60G PAVE HAWK
Primary Function: combat search and rescue and military operations other than war in day, night or marginal weather conditions.
Speed: 184 mph (294.4 kph)
Range: 445 statute miles; 504 nautical miles (unlimited with air refueling)
Armament: Two 7.62mm machineguns
Crew: Two pilots, one flight engineer and one gunner
Inventory: Active force, 64; ANG, 18; Reserve, 23.

KC-10A 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 (aircraft commander, pilot, flight engineer and boom operator)
Inventory: Active force, 59; ANG, 0; Reserve, 0

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: Four: pilot, co-pilot, navigator, boom operator. Aircraft equipped with PACER CRAG do not have a navigator on most missions. The Air Force procured a limited number of navigator suites that can be installed for unique missions.
Inventory: Active duty, 253; Air National Guard, 222; Air Force Reserve, 70

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, a navigator and electronic warfare officer; enlisted - flight engineer and two loadmasters
Inventory: Active force, MC-130H, 24; Reserve, MC-130E, 14; ANG, 0

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 - pilot, co-pilot, right navigator and left navigator; enlisted - flight engineer, communications systems operator and two loadmasters
Inventory: Active force, 24; Reserve, 0; ANG, 4

MH-53J/M PAVE LOW
Primary Function: Long-range infiltration, exfiltration and resupply of special operations forces in day, night or marginal weather conditions
Speed: 165 mph (at sea level)
Range: 600 nautical miles (unlimited with aerial refueling)
Armament: Combination of three 7.62 mini guns or three .50 caliber machine guns
Crew: Officers, two pilots; enlisted, two flight engineers and two aerial gunners
Air Force Inventory: Active force**,** 13 MH-53J's, 25 MH-53M's; Reserve, 0; ANG, 0

RC-135V/W RIVET JOINT
Primary Function: Reconnaissance
Unrefueled 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
Inventory: Active force, 14; Reserve, 0; Guard, 0

RQ-1 PREDATOR UNMANNED AERIAL VEHICLE
Primary Function: Airborne surveillance reconnaissance and target acquisition
Speed: Cruise speed around 84 mph (70 knots), up to 135 mph
Range: up to 400 nautical miles (454 miles)
Inventory: Active force, 48; ANG, 0; Reserve, 0
U-2S/TU-2S
Primary Function: High-altitude reconnaissance
Speed: 475+ miles per hour (Mach 0.58)
Range: 7,000+ miles (6,090+ nautical miles)
Crew: One (two in trainer models)
Inventory: Active force, 36 (4 two-seat trainers and two operated by NASA); Reserve, 0;
ANG, 0

VII. Space Capabilities

ATLAS II
Primary function: Launch vehicle

DEFENSE METEOROLOGICAL SATELLITE PROGRAM
Primary Function: Collect weather data
Orbit altitude: Approximately 528 miles (850 kilometers) (nominal)

DEFENSE SATELLITE COMMUNICATIONS SYSTEM
Primary Function: Worldwide, long-haul communications
Orbit Altitude: 22,230 miles (35,887 kilometers)
Inventory: 4

DEFENSE SUPPORT PROGRAM SATELLITES
Primary mission: Strategic and tactical missile launch detection
Orbit altitude: 22,000 miles (35,200 kilometers)
Inventory: Classified

DELTA II LAUNCH VEHICLE
Primary Function: Space lift vehicle
Lift Capability: The Delta II can carry payloads into near-earth orbits, approximately 100 nautical miles [160 kilometers] in space. It can lift up to 11,100 pounds (4,995 kilograms) into low earth orbit, 28-degree circular near-earth orbit and up to 8,420 pounds (3,789 kilograms) into a 90-degree polar orbit. The Delta II also can carry up to 4,010 pounds (1,804.5 kilograms) into geo-transfer orbit, approximately 12,000 miles [19,200 kilometers] and up to 2,000 pounds (909 kilograms) into geosynchronous orbit, approximately 22,000 miles [35,200 kilometers].
Payloads: Department of Defense Navstar Global Positioning System, NASA Mars probes and commercial satellites such as Iridium and Globalstar
Inventory: Active force, 2 (with more on order)

MILSTAR SATELLITE COMMUNICATIONS
Primary function: Global military communications system
Orbit altitude: 22,250 nautical miles (inclined geostationary 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 bps (Satellites 3 through 6 only)
Inventory: 2

NAVSTAR GLOBAL POSITIONING SYSTEM
Primary Function: Precise navigation, timing and velocity information worldwide

NAVIGATION INFORMATION SERVICE
The U.S. Coast Guard operates and maintains the Navigation Information Service for civilian GPS users. It can be reached at (703) 313-5900, 24 hours a day, 365 days a year.

TITAN IVB
Primary Function: Heavy-lift space launch vehicle
Builder: Lockheed-Martin Astronautics
Lift Capability: Can carry up to 47,800 pounds (21,682 kilograms) into a low-earth orbit up to 12,700 pounds (5,761 kilograms) into a geosynchronous orbit when launched from Cape Canaveral AFS, Fla.; and up to 38,800 pounds (17,599 kilograms) into a low-earth polar orbit when launched from Vandenberg AFB. Using an inertial upper stage, the Titan IVB can transport up to 5,250 pounds (2,381 kilograms) into geosynchronous orbit.
Inventory: Unavailable

PAVE PAWS RADAR SYSTEM

MISSION: PAVE PAWS is an Air Force Space Command radar system operated by three 21st Space Wing squadrons for missile warning and space surveillance. PAVE PAWS radars are located at Cape Cod Air Force Station, Mass., Beale AFB, Calif., and Clear AFS, Alaska.
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 (SLMB) and intercontinental ballistic missiles (ICBMs).

The system also has a secondary mission of Earth-orbiting satellite detection and tracking. Information received from the PAVE PAWS radar systems pertaining to SLBM/ICBM and satellite detection is forwarded to the U.S. Strategic Command's Missile Warning and Space Control Centers at Cheyenne Mountain Air Station Colo. Data is also sent to the National Military Command Center and the U.S. Strategic Command.

EVOLVED EXPENDABLE LAUNCH VEHICLE

MISSION: The Evolved Expendable Launch Vehicle (EELV) is the Air Force space lift modernization program. EELV will reduce the cost of launching by at least 25 percent over current Delta, Atlas, and Titan launch systems. Part of these savings result from the government now procuring commercial launch services and turning over responsibility for operations and maintenance of the launch complexes to the contractors. This new spacelift strategy reduced the government's traditional involvement in launch processing while saving a projected $6 billion in launch costs between the years 2002 and 2020. In addition, EELV improves space launch operability and standardization.

The mission statement for the EELV program is: "Partner with industry to develop a national launch capability that satisfies both government and commercial payload requirements and reduces the cost of space launch by at least 25 percent.".
The EELV program's two primary objectives are to: 1) increase the U.S. space launch industry's competitiveness in the international commercial launch services market and 2) implement acquisition reform initiatives resulting in reduced government resources necessary to manage system development, reduced development cycle time, and deployment of commercial launch services.

GROUND-BASED ELECTRO-OPTICAL DEEP SPACE SURVEILLANCE

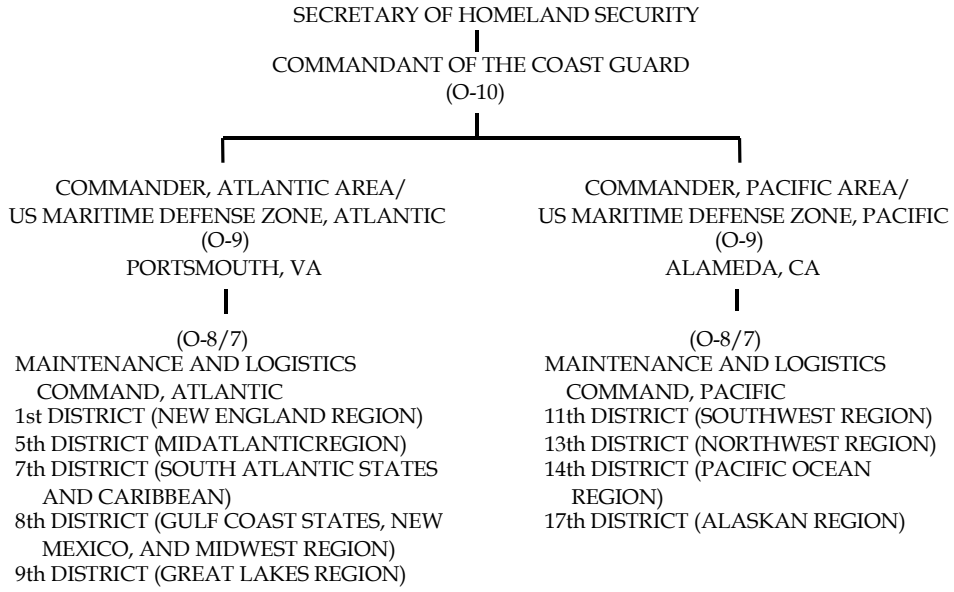
MISSION: There are approximately 10,000 known objects in orbit around the Earth. These objects range from active payloads, such as satellites, to "space junk" such as launch vehicle debris and debris generated from satellite breakups.

U.S. Strategic Command's Space Control Center, located within Cheyenne Mountain Air Force Station in Colorado Springs, Colo., is responsible for tracking all man-made objects in orbit. The center receives orbital data from Ground-Based Electro-Optical Deep Space Surveillance (GEODSS) sites assigned to Air Force Space Command (AFSPC). GEODSS sites play a vital role in tracking these deep space objects. Over 2,500 objects, including geostationary communications satellites, are in deep space orbits more than 3,000 miles from Earth.

There are three operational GEODSS sites that report to the 18th Space Surveillance Squadron, Edwards AFB Calif. - Socorro, N.M.; Maui, Hawaii; and Diego Garcia, British Indian Ocean Territories.

U.S. COAST GUARD

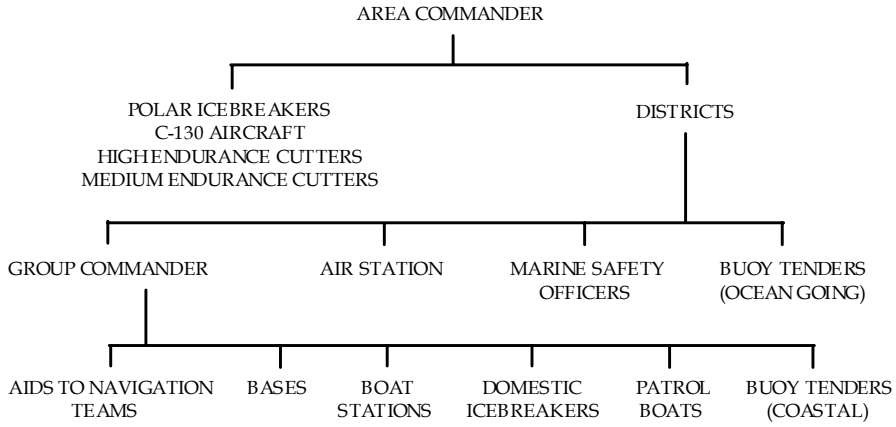
I. Organization



II. Concept Of Operations

Title 14 U.S.C. 2 states in part that the Coast Guard on the high seas and waters subject to U.S. jurisdiction will:

- "…enforce or assist in the enforcement of all applicable Federal laws;"
- "…administer laws and promulgate and enforce regulations for the promotion of safety of life and property;"
- "…operate, with due regard to the requirements of national defense, aids to maritime navigation, icebreaking facilities, and rescue facilities for the promotion of safety;"
- "…maintain a state of readiness to function as a specialized service in the Navy in time of war, including the fulfillment of Maritime Defense Zone command responsibilities."



Coast Guard Roles and Missions:

NATIONAL DEFENSE	MARITIME SECURITY	MARITIME SAFETY	PROTECTION OF RESOURCES	MARITIME MOBILITY
General Defense Operations	Drug Interdiction	Search & Rescue	Marine Environmental Protection	Aids to Navigation
Maritime Interception Operations	Alien Migrant Interdiction	Marine Safety	Domestic Fisheries Enforcement	Domestic Icebreaking Services
Military Environmental Response Operations	EEZ & Living Marine Resource Law/Treaty Enforcement	Recreational Boating Safety	Protected Living Marine Resource Law Enforcement	Waterways and Vessel Traffic Management
Port Operations, Security and Defense	General maritime Law Enforcement	International Ice Patrol		Bridge Administration
Peacetime Military Engagement				
Coastal Sea Control Operations				
Polar Icebreaking				

III. General Information

MILITARY, MARITIME & MULTI-MISSIONED

- 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.
- In its five roles, the Coast Guard makes significant national security contributions to every federal activity at sea:
  - National Defense
  - Maritime Safety
  - Maritime Security
  - Maritime Mobility
  - Protection of Natural Resources
- 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 during time of war (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 continuously with the Navy and other Services.
- Primary forces for the Maritime Defense Zones under the Fleet CINCs.

- An important asset for national policy since 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. USS HARLAN COUNTY affair in Haiti, fisheries/sovereignty disputes with Canada and Mexico, and Partnership for Peace contacts with Baltic and Black Sea nations).
- Women fully integrated on all vessels and have commanded most classes of cutters.
- Personnel:
  - - 35,000 Active Duty
  - - 8,000 Reserves
  - - 6,000 Civilians
  - - 32,000 Coast Guard Auxiliary (Civilian volunteers)

IV. Coast Guard Reserve

Organization: Coast Guard Reserve units are primarily responsible for training individuals to augment Active component units and commands. The Coast Guard Reserve has six deployable port security units, which can deploy globally within 96 hours to provide force protection and port security.

Function and Mission: The function of the Coast Guard Reserve is to provide trained individuals to augment the Active Component, providing a surge capability for both domestic emergencies and maritime operations. The multi-mission roles of the Coast Guard Reserve include search and rescue, combating major oil spills, drug interdiction, protecting ports and waterways, and conducting numerous other maritime operations. Reservists serve in the same enlisted ratings and officer specialties as do their active duty counterparts. However, two ratings are open *only* to members of the reserve: port security specialist, and investigator.

SELECTED COAST GUARD VESSELS AND AIRCRAFT

SHIP TYPE	CLASS	NO.	WARFARE MISSION	EQUIPMENT
WHEC High Endurance Cutter	HAMILTON 3200 tons, 378 ft long, 42.8 ft wide (beam), 28 kts speed, 170 crew	12	ASUW Convoy, CVBG planeguard, MIO,MARDEZ coastal patrol (ASW/ ASU Regeneration)	Frigate-type cutter. CIWS, SPS-40, MK-92 GFCS, MK-75 Gun, HH-65A capable, JOTS/VIDS & NAVMACS, TACAN, SRBOC, WLR-1D, Link 11 (Regeneration: Sonar & Harpoon)
WMEC Medium Endurance Cutter	BEAR 1780 tons, 270 ft long, 38 ft beam, 19.5 kts speed, 100 crew	13	ASUW Convoy, MARDEZ coastal patrol, Maritime Interdiction Ops	Corvette-type cutter. MK-92 GFCS, MK-75 Gun, SLQ-32, LAMPS III and HH-65A capable, SRBOC, TACAN, NAVMACS, JOTS/VIDS
WMEC Medium Endurance Cutter	RELIANCE 1007 tons, 210.5 ft long, 34 ft beam, 18 kts speed, 75 crew	16	Coastal warfare. MARDEZ coastal patrol, Maritime Interdiction Ops	Corvette-type cutter. 25 mm chain gun, flight deck, satellite comms, tactical data links.
WPB Patrol Boat	ISLAND 165 tons, 110 ft long, 21 ft beam, 30 kts speed, 16 crew	49	Coastal warfare. Deployable squadrons.	Fast coastal patrol boat. 25 mm chain gun, secure comms, 7-day endurance.
WPB Patrol Boat	MARINE PROTECTOR 87 ft long, 19.5 ft beam, 20 kts speed, 10 crew	37	Coastal warfare Coastal warfare.	Coastal patrol boat. .50 cal MG, secure comms, 3 day endurance
WLB Buoy Tender	BALSAM/JUNIPER 800/2000 tons, 180/225 ft long 13/15 kts speed, 52/36 crew	13/6	Coastal warfare. Mine counter measures 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.

AIRCRAFT TYPE	TOTAL	WARFARE MISSION
HC-130H, HERCULES	26 [4]	Long Range Maritime Patrol; (equipped with APS-137 ISAR) Tactical Airlift
HU-25A, GUARDIAN	9 [16]	Medium Range Maritime Patrol; (equipped with APS-127 radar)
HU-25B, GUARDIAN	3 [4]	Medium Range Maritime Patrol; (equipped with APS-127 radar and SLAR)
HU-25C, GUARDIAN	8 [1]	Medium Range Interceptor & Maritime Patrol Aircraft; (equipped with F-16 APG-66 intercept radar and WF-360 FLIR)
HH-60J, JAYHAWK	35 [7]	SAR; Utility; FLIR equipped; NVG compatible; secure comms
HH-65A, DOLPHIN	80[14]	SAR; Utility; secure comms; NVG compatible

[ ] = STORAGE/SUPPORT

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 the end points of the U.S. Sea Lanes of Communications (SLOCs). To carry out this mission, each PSU has 6 heavily armed, fast and maneuverable TPSBs. 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 Naval Coastal Warfare (NCW) organization.

Unit	Location
PSU 305	**FT EUSTIS, VA**
PSU 307	**ST. PETERSBURG, FL**
PSU 308	**GULFPORT, MS**
PSU 309	**PORT CLINTON, OH**
PSU 311	**SAN PEDRO, CA**
PSU 313	**TACOMA, WA**
PSU TRAINING DETACHMENT (TRADET)	**CAMP LEJEUNE, NC**

PSU COMPOSITION AND ASSETS:

- Boats: Six (Boston Whaler) 25' TPSBs with 8' beam and 4' nav draft equipped with two 175 HP OMC FICHT 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 trailors, one 16 pax 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.
- 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 MARINE SAFETY AND SECURITY TEAMS (MSST)

The Marine Safety and Security Team (MSST) is a specialized response unit created to enhance US port security. They provide waterborne and shoreside antiterrorism force protection for strategic shipping, high interest vessels and critical infrastructure in and around America's ports. 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) requirements. The 100-member team is modeled after existing Coast Guard Port Security Units and Law Enforcement Detachments and will provide a rapid-deployment response to enhance the Coast Guard's Homeland Security efforts along America's Coasts. Like most Coast Guard units, MSSTs will be 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.

Unit	Location	Year
MSST 91101	SEATTLE, WA	2002
MSST 91102	CHEAPEAKE, VA	2002
MSST 91103	SAN PEDRO, CA	2002
MSST 91104	GALVESTON, TX	2002
MSST 91105	SAN FRANCISCO, CA	2004
MSST 91106	ST MARYS, GA	2003
MSST 91107	SAN DIEGO, CA	2004
MSST 91108	FT WADSWORTH, NY	2003
MSST 91109	HONOLULU, HI	2004
MSST 91110	BOSTON, MA	2004
MSST 91112	NEW ORLEANS, LA	2004
MSST 91114	S FLORIDA, FL	2004

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 M60).
- 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 - Twin outboard engines capable of 40+ knots - VHF/FM marine radio (encrypted) - AN/PRC 117V2 Tri-band (FY04) - Raytheon radar - Differential GPS (DGPS) - 1 M60 7.62 mm machine gun fwd - 1 M60 7.62 mm machine gun aft - AN/PRC 7C NVG	- M16 rifles - 9 mm pistols - M60 machine guns - 12 gauge shotguns (with less than lethal rounds) - Exploring running gear entangling systems	- Limited CBR - Vertical insertion** - Canine Handling Teams** - Limited Underwater Port Security Detection Equipment* - Advanced Port Security Tactics* - Advanced Marksmanship* (Designated Marksman Teams) - Maritime Law Enforcement

* Denotes capabilities not possessed anywhere else in the Coast Guard.
** Denotes capability possessed at only one other Coast Guard unit (VI – LEDET; K-9 – Station Sandy Hook)

SPECIAL OPERATIONS FORCES (SOF)

I. Organization

On 16 April 1987, United States Special Operations Command (USSOCOM) was established as a unified command at MacDill Air Force Base, Florida, with two prime directives:

- As a supporting unified command, provide trained and ready forces to the regional Combatant Commanders.
- As a supported unified command, be prepared to exercise command of selected special operations missions if so directed by the National Decision Makers (NDM).

To assure appropriate priority for resources and equipment development, Congress authorized USSOCOM its own program, budget, and head-of-agency authority for research, development and acquisition of SOF unique material and equipment. As the only Combatant Commander with its own budget ($5.6 billion-total obligation authority for FY 04), mainstream funding still remains with each service chief.

Special Operations Component Commands

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

ARMY: The approximately 30,000 member Army Special Operations Command (ARSOC) includes active and reserve Special Forces, Special Operations Aviation, Ranger, Psychological Operations and Civil Affairs units.

NAVY: The Naval Special Warfare Command (NAVSPECWARCOM) is composed of 6,300 active and reserve operational and support personnel, which include Naval Special Warfare Groups (NSWG) Sea-Air-Land (SEAL) Teams, SEAL Delivery Vehicle (SDV) Teams, and Special Boat Teams (SBT).

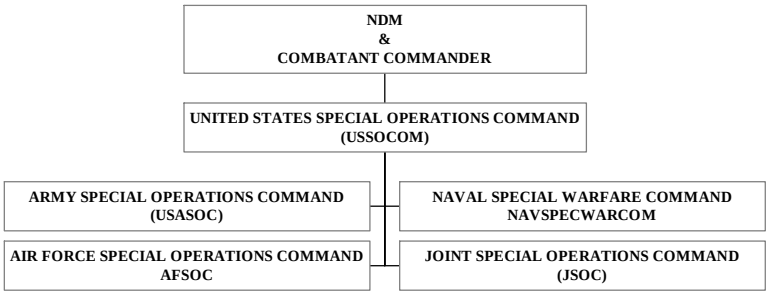
AIR FORCE: The 11,000 member Air Force Special Operations Command (AFSOC) is composed of: active, reserve and Air National Guard wings, groups and squadrons of special operations configured fixed and rotary wing aircraft; special tactics units; a foreign internal defense squadron; and a combat weather squadron.

The Joint Special Operations Command (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

Each regional Combatant Commander (including Commander UNC/CFC in Korea) has established a separate special operations command (SOC) to meet its theater-unique special operations (SO) requirements. As subordinate unified commands, the theater SOCs plan, prepare, command, and control assigned theater SOF from the Army, Navy, and Air Force. The theater SOCs (SOCSOUTH, SOCEUR, SOCCENT, SOCJFCOM, SOCPAC and SOCKOR)

provide a framework around which a Joint Special Operations Task Force (JSOTF) can be structured.



II. Concept of Operations

SO are conducted by specially organized, trained and equipped military and paramilitary forces to achieve military, political, economic or psychological objectives by unconventional military means in hostile, denied or politically sensitive areas. These operations are conducted during peacetime competition, conflict and war, independently or in coordination with operations of conventional, non-special operations 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 SO from conventional military operations are:

- Limited opportunity
- Unorthodox approaches
- Unconventional training and equipment
- Political sensitivity
- Need for specialized intelligence

SOF Core Tasks are:

UNCONVENTIONAL WARFARE (UW) Objective: Conduct a broad spectrum of military & paramilitary operations in enemy-held, enemy-controlled, or politically sensitive territory.	▪ Long-duration, indirect activities including guerrilla warfare & other offensive, low visibility, or clandestine operations. ▪ Mostly conducted by indigenous forces organized, trained, equipped, supported, & directed in varying degrees by SOF.
DIRECT ACTION (DA) Objective: Seize, damage, or destroy a target; capture or recover personnel or material in support of strategic/operational objectives or conventional forces.	▪ Short-duration, small-scale offensive actions. ▪ May require raids, ambushes, direct assault tactics; emplace mines & other munitions; conduct standoff attacks by firing from air, ground, or maritime platforms; designate or illuminate targets for precision-guided munitions; support for cover & deception operations; or conduct independent sabotage normally inside enemy-held territory.
SPECIAL RECONNAISSANCE (SR) Objective: Verify, through observation or other collection methods, information concerning enemy capabilities, intentions, & activities in support of strategic/operational objectives or conventional forces.	▪ Reconnaissance & surveillance actions conducted at strategic or operational levels to complement national & theater-level collection efforts. ▪ Collect meteorological, hydrographic, geographic, & demographic data; provide target acquisition, area assessment, & post-strike reconnaissance data.
FOREIGN INTERNAL DEFENSE (FID) Objective: Assist another government in its actions and programs to free & protect its society from subversion, lawlessness, & insurgency.	▪ U.S. government interagency activity to foster internal development of economic, social, political, & military segments of a nation's structure. ▪ Train, advise, & assist host-nation military & paramilitary forces.

SOF Core Tasks continued:

COUNTER TERRORISM (CT) Objective: Preclude, preempt or resolve terrorist incidents.	▪ Interagency activity using highly specialized capabilities.
COUNTER PROLIFERATION (CP) Objective: Prevent proliferation of weapons of mass destruction.	▪ Train and equip forces to conduct or support SR or DA missions to interdict sea or land shipment of dangerous materials or weapons of mass destruction. ▪ Support other U. S. Government interagency counter-proliferation efforts.
PSYCHOLOGICAL OPERATIONS (PSYOP) Objective: Induce or reinforce foreign attitudes & behavior favorable to U.S. objectives.	▪ Influence emotions, motives & behavior of foreign governments, organizations, groups, & individuals.
CIVIL AFFAIRS Operations(CAO) Objective: Establish, maintain, influence, or exploit relations among military forces, civil authorities, & civilian populations to facilitate military operations.	▪ May be conducted as stand-alone operations or in support of a larger force. ▪ May include military forces assuming functions normally the responsibility of the local government.

III. General Information

U.S. Army Special Operations Forces

- Force of approximately 30,000 personnel.
- Highly skilled, robust capability.
- Composes of: Special Forces (SF, a term unique to the Army--the Green Berets), Special Operations Aviation Regiment (SOAR), Psychological Operations (PSYOP) and Civil Affairs (CA) units.

Army SF conduct missions deep within the enemy's rear, far ahead of the forward limits of conventional forces. SF unit's plan, conduct, and support SO throughout the spectrum of conflict. Their principal core tasks are UW, FID, DA, SR, and CT with mission priorities

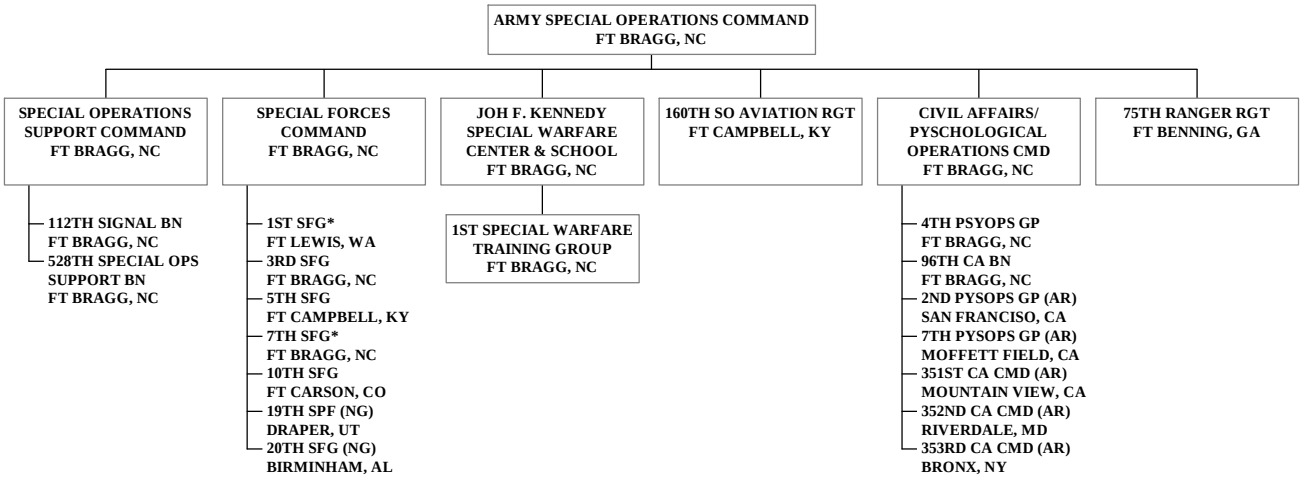
established by the supported theater CINC. Each SF Group is regionally focused on a particular geographic area. The fundamental operating element is the 12-man SF Operational Detachment-Airborne (ODA) although smaller elements are routinely employed in response to specific mission requirements. Culturally oriented and language trained SF personnel excel in teaching: basic combat infantry tactics, light weapons, demolitions, field communications, combat intelligence, and paramedical support.

Army Rangers are organized into a Ranger regiment of three battalions and a headquarters company. Together they employ over 2,400 personnel who conduct DA operations. They can operate independently, with other SOF, or with conventional forces and specialize in quick strikes/shock action.

The SOAR unit provides dedicated tactical mobility for SF and other SOF. Comprised of one active regiment in the United States, their mission is to provide a night, all-weather, medium range insertion, extraction and resupply capability in hostile or denied areas. They also conduct selected rescue and recovery missions and medical evacuations. Inventories include MH-60K/L BLACK HAWK, MH-47E CHINOOK, and A/MH-6 special operations configured helicopters.

PSYOP forces are currently organized into three PSYOP groups (one active and two reserve components) and 13 PSYOP battalions (composed of five active and eight reserve battalions). The groups vary in number and types of subordinate units based on mission and area orientation. They conduct strategic, operational, and PSYOP activities to influence and change the attitudes, emotions, and behavior of selected audiences.

The CA force, 96 percent of which is in the Army Reserve, consists of eight CA commands or brigades. Core tasks and functions include establishing favorable relationships between U.S. military and foreign governments and populations, facilitating military operations through population or refugee control, advising and assisting host-nation forces, and supporting other U.S. agencies. They may also be tasked to establish civil administrations in support of a friendly nation or in an occupied territory.



*-ELEMENTS OF UNIT BASED OVERSEAS
AR-ARMY RESERVE
NG-NATION GUARD

Naval Special Operations Forces

Naval Special Warfare (NSW) forces number approximately 6,300 SO personnel and support technicians and conduct maritime SO in support of joint and naval operations. Principal core tasks are SR, DA, FID and CT with mission priorities established by the supported theater CINC. 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 (NSWG) are established to train, equip, deploy and support forces to conduct regular deployments, exercises, and contingency operations in support of the theater Combatant Commanders. They are geographically oriented and exercise operational control (OPCON) over assigned CONUS-based NSW forces, and ADCON over all assigned forces as echelon III commanders within the Navy chain of command. When directed, they provide NSW Task Groups (NSWTU) and Task Units (NSWTU) to exercise operational control of deployed forces under the direction of the supported Combatant Commander.
- NSWTG and NSWTU are task organized force packages deployed to joint and fleet warfighting commanders to plan, coordinate, command and conduct NSW. 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.
- 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 eight; 16-man platoons composed of two officer and 14 enlisted SO personnel and requisite support personnel. When directed, a SEAL Team can form and deploy one or two NSWTU to plan, coordinate and command maritime SO.
- SEAL Delivery Vehicle (SDV) Teams are regionally-oriented, CONUS (or Hawaii)-based commands established to operate, deploy, support and maintain submersible systems that clandestinely deliver and recover SOF in hostile or denied areas and conduct limited reconnaissance and direct action missions. Each SDV Team is organized into a headquarters and support element and three submersible operations task units composed of one SDV platoon and one submarine dry deck shelter (DDS) platoon each.
- Special Boat Teams (SBT) are regionally-oriented, CONUS commands established to operate, deploy, support and maintain special operations craft to provide maritime mobility for SOF. Missions include SEAL insertion and extraction support, coastal patrol and interdiction, riverine warfare, and other support operations.
- 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, and possible DOD-wide, application.
- Naval Special Warfare Center (NAVSPECWARCEN) serves as the focal point for NSW selection, training, tactics and doctrine development. In addition to conducting and

managing the basic SEAL and Special Boat training programs, the Center also provides instruction and training in NSW for U.S. and allied military personnel.

U.S. Air Force Special Operations Forces

Air Force SOF (AFSOF) consists of approximately 14,000 specially selected and trained personnel. Aviation elements operate uniquely equipped fixed and rotary wing aircraft to conduct SOF insertion, extraction and resupply, fire support, refueling, combat search and rescue (CSAR), and PSYOP. They are organized into one active component Special Operations Wing, two active Special Operations Groups, one reserve Special Operations Wing, and one reserve Special Operations Group. The one active Special Tactics Group is trained and organized to establish and operate expeditionary airfields, fly combat rescue missions, and conduct other classified missions as directed. Assigned units include the following:

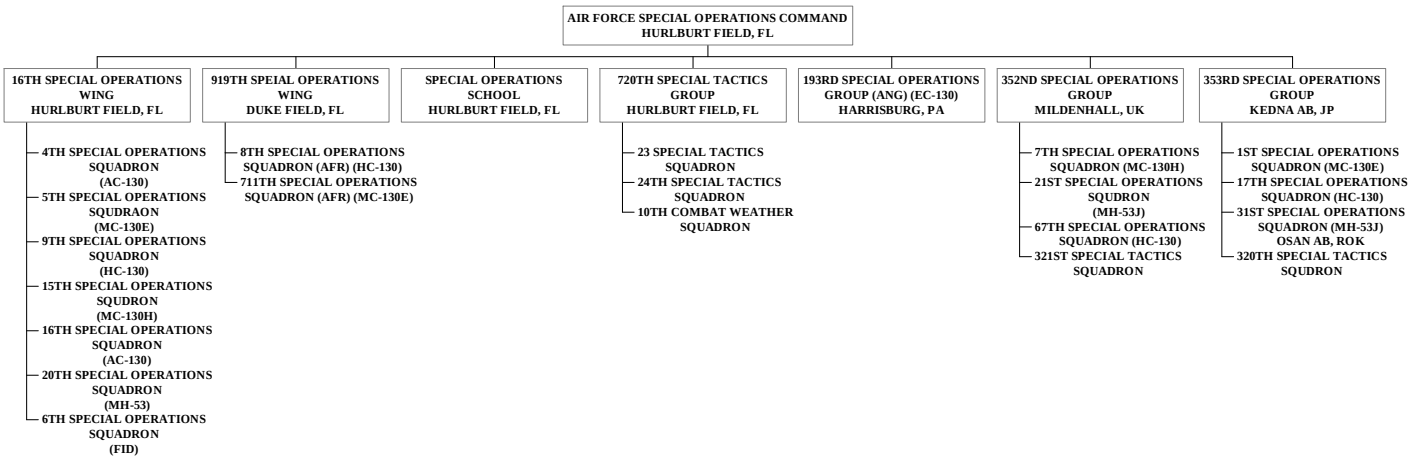
- Four active duty Special Operations Squadrons (SOS) are equipped with MC-130E/H COMBAT TALON aircraft for low-level, long-range, night, all weather, medium-threat infiltration, exfiltration, and resupply of SOF in hostile areas. They are also capable of PSYOP leaflet drops and can deliver specialized munitions.
- Three active squadrons with MC-130P COMBAT SHADOW aircraft provide low-level, long-range, high, single ship/formation refueling of SOF rotary-wing aircraft and limited infiltration, exfiltration and resupply of SOF forces via airland or airdrop.
- Three active squadrons with MH-53J PAVE LOW III helicopters provide low-level, medium-range, night, all-weather infiltration, exfiltration and resupply of SOF, and pathfinder missions. Aircraft are inflight refuelable, carry 32 personnel, and have special navigation, surveillance, and survivability upgrades.
- Two squadrons with AC-130H SPECTRE and AC-130U SPOOKY gunship aircraft provide close air support, armed reconnaissance, interdiction, escort, and search and

rescue capabilities for SOF and conventional forces. Armament includes side-firing 105mm and 40 mm cannon and a 25mm gatling gun.

- One Air National Guard group equipped with EC-130E COMMANDO SOLO aircraft equipped to broadcast television and radio signals in support of PSYOP. Unrefueled mission duration is 10 hours.
- One additional active duty rescue wing, two Air National Guard rescue wings and one additional Air Force Reserve rescue wing now fall under AFSOC to conduct CSAR missions. Aircraft include the HH-60G helicopter and the HC-130 helicopter air refueler.

Several other units provide critical support to SOF and conventional forces. A Special Tactics Group includes combat control and pararescue personnel capable of medical support, terminal guidance for weapons, and control of assault zone aircraft and fire support. A communications squadron provides support to deployed Air Force SOF.

The U.S. Air Force Special Operations School at Hurlburt Field provides special operations-related education to personnel from all branches of the Department of Defense, government agencies, and allied nations. Subjects covered range from regional affairs and cross-cultural communications to antiterrorism awareness, revolutionary warfare, and psychological operations



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.

USTRANSCOM oversees 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: Military Traffic Management Command (MTMC-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) *. AMC is a U.S. Air Force major command headquartered at Scott Air Force Base, Illinois. As the Air Force component command of USTRANSCOM, AMC provides common-user and exclusive-use air lift, air refueling, and aeromedical evacuation services for deploying, employing, sustaining, and redeploying U.S. forces wherever they are needed worldwide. Additionally, AMC is the worldwide aerial port manager and, where designated, operator of common-user aerial ports of embarkation (APOEs) and/or aerial ports of debarkation (APODs). AMC is the single point of contact with the commercial airline industry for procurement of DOD domestic and international airlift services and administers and executes the Civil Reserve Air Fleet (CRAF) Program.

***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 speciaffically for this audience.**

Civil Reserve Air Fleet (CRAF) *. CRAF is composed of commericial aircraft committed to support the moavement of military forces and material worldwide. CRAF contributes about one-half of USTRANSCOM's wartime airlift capability. The CRAF program seeks to match the capability levied by Joint Staff requirements. Aircraft from participating carriers are divided into three segments-Aeromedical, National, and International-and are typically measured in wide body equivalents (WBE) for the international segement (roughly equal to a B-747). CRAF aircraft include 130 WBE passenger aircraft, 120 WBE cargo aircraft, and up to 40 B-767 aircraft for aeromedical evacuation.

CRAF may be activated incrementally within three stages to meet varying levels of defense emergencies. Each of the stages is activated by CINUSTRANS with the approval of the SecDef. Stage I is composed of long-range assets and, when activated, carriers are given a maxium of 24 hours after mission assignment to respond to the initial mission onload location. If first stage assets are insufficient to meet airlift requirements, Stage II can be activated. Stage II, composed of aircraft from all three CRAF segements, has a 24-hour response time after mission assignment with the exception of the aeromedical segement, which has 48 hours to respond. Full CRAF capability is respresented in Stage III.

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 minor 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.******

Military Sealift Command (MSC) **. As a component command of USTRANSCOM, MSC provides common-user sealift across the range of military operations. MSC adjusts and controls the total number of ships under its COCOM to meet demand. 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.

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****The information in this table has been directly excerpted from Joint Pub 4-01, *Joint Doctrine for the Defense Transportation System,* Washington DC: 19 March 2003.**

(a) **FSS.** Eight government-owned roll-on/roll-off (RO/RO) ships are lay berthed on the US East and Gulf Coasts. 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.

(b) **LMSR Ships**. Eight LMSR ships carry two Army heavy brigades pre-positioned afloat, and 11 LMSR ships will be lay berthed in CONUS to deploy Army equipment. These ships can maintain a speed of 24 knots.

(c) **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.

Maritime Administration (MARAD)**. 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:

(1) 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;

(2) Administer funding for the maintenance of the RRF and NDRF.

(3) Administering the Maritime Security Program and the priorities and allocations of the VISA;

(4) 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;

(5) Ensuring readiness preparation and coordination of commercial strategic ports for mobilization through the National Port Readiness Network;

(6) Administering the Vessel War Risk Insurance Program (Title 12, Merchant Marine Act of 1936); and

****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.**

(7) 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)**. The RRF consists 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). MARAD maintains these vessels in 4-, 5-, 10- or 20-day readiness status.

The National Defense Reserve Fleet (NDRF)***. The National Defense Reserve Fleet was established under the Maritime Administration by Section 11 of the Merchant Ship Sales Act of 1946, to serve as a reserve which could be activated to meet shipping requirements during national emergencies. At its peak, 2, 277 ships were laid up at 12 sites throughout the United States. Currently, NDRF vessels are maintained at the James River,VA., Beaumont, TX., and Suisun Bay, CA., fleet sites, and at designated outport berths.

The NDRF consists of dry cargo vessels, tankers, military auxiliaries, and other ship types. Vessels are either owned by the Maritime Administration or held for other Government agencies on a reimbursable basis.

The US Flag Fleet**. Ships from the US 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 that voluntary US and foreign flag charters no longer meet requirements, it is the US 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 US flag shipping. They are the VISA, the voluntary tanker agreement (VTA), and requisitioning.

(1) **The 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.

****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.**

*****The information in this section has been directly excerpted from the MARAD homepage located at** http://www.marad.dot.gov/programs/NDRF.html**.**

(a) 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.

(b) A joint planning advisory group (JPAG) is central to the successful implementation of VISA and is comprised of representatives from USTRANSCOM, MTMC, 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.

(2) **The 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.

(3) **Liner Service**. MTMC, 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.

(4) **Requisitioning**. The last resort for acquisition of shipping is requisitioning. US flag ships may be requisitioned under the authority of Section 902 of the Merchant Marine Act of 1936 (46 US Code (USC) 1242).

Foreign Flag Ships**. When US 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 US control shipping.

(1) **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.

(2) **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.

****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.**

(3) **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 Traffic Management Command (MTMC)**. MTMC is a major command of the US Army. As a transportation component of USTRANSCOM, MTMC is the CONUS transportation manager and provides worldwide common-use ocean terminal services and traffic
management services to deploy, employ, sustain, and redeploy US forces on a global basis. These services also include the use of common-user sealift through the Voluntary Intermodal Sealift Agreement (VISA) program. MTMC also conducts transportation engineering to ensure deployability and feasibility of present and future deployment assets. Additionally, MTMC 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)), MTMC will also serve as the port operator. MTMC's Transportation Engineering Agency (MTMCTEA) provides deployment engineering, research, and analytical expertise to improve the deployability of the Armed Forces of the United States. MTMCTEA executes surface transportation engineering policy matters assigned by the Office of the Secretary of Defense on behalf of USTRANSCOM and MTMC headquarters (HQ). MTMCTEA also provides a focal point for developing DTS-related modeling and simulation tools. MTMCTEA's primary functions are:

(a) Execute the highway, railroads, and ports for national defense programs;

(b) Conduct force deployability, transportation infrastructure, and operations and/ or exercise analyses;

(c) Assess the capability of power projection platforms and seaports to meet deployment requirements;

(d) Ensure that the transportability design influence, criteria, and critical movement considerations are integrated in the DOD acquisition process;

(e) Formulate movement procedures for existing and future material;

(f) Develop deployability analysis techniques and transportation models and simulations; and

(g) Manage the acquisition and distribution of authoritative transportation data in support of deployment requirements.

****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.**

Defense Freight Railway Interchange Fleet (DFRIF)**. MTMC owns and manages the DFRIF. The DFRIF was established by DOD directive and is composed of all cars purchased by, or in-leased on behalf of, any branch of the armed forces for use in interchange service; that is, loaded movement by commercial railroads throughout North America. The DFRIF is different from the railroad cars that are owned by the individual Services for installation support, principally at ammunition plants, shipyards, and ports. Unlike these cars, DFRIF cars must be constructed to railroad-approved designs, registered with the railroads, and maintained in accordance with railroad rules and federal regulations. The DFRIF is managed as a separate Transportation Working Capital Fund account. The principal revenue source is in payments that the railroads make, in varying amounts depending on the type, cost, and age of a particular car, for each mile that the cars move under load. A secondary source of revenue is rentals from out-leasing; principally from freight forwarders moving foreign military sales (FMS) equipment to ports. The principal expense category is maintenance, which is performed by the railroads and by three geographically dispersed private car shops under long-term contract to DFRIF. Special purpose cars are built to a unique design to meet the needs of an individual Service; their purchase or in-lease is funded by that Service. Once they are accepted from the manufacturer, ownership and responsibility for maintenance of the cars is transferred to MTMC. The purchaser controls the use of special purpose cars, including whether MTMC may make the cars available for the use of another Service or for out-lease. The Army has the responsibility of funding the purchase of general-purpose cars, which are cars of a design suitable for use by more than one Service. MTMC controls the use of general-purpose cars. The DFRIF is currently comprised of 2,246 cars. There are 1,678 general purpose flat cars and 375 general-purpose tank cars. Special-purpose cars included 128 flat cars, 18 tank cars, 30 boxcars, 9 refrigerator cars, 6 cabooses, and 2 “other purpose” cars. Most of the general-purpose flat cars are assigned to specific Army and Marine Corps installations to support mobilization. They are designed to carry containers and wheeled or tracked vehicles. The remaining cars are not assigned to any particular installation and are dispatched as needed to support peacetime traffic. General-purpose tank cars are all used for fuel movements and are divided into pools assigned to specific loading points.

Port Operations**

a. **General**. 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 MTMC, 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 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.**

b. 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.

c. **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 MTMC, 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 MTMC port management cell to manage the ports in concert with a designated port operator.

(1) **MTMC**. As USTRANSCOM's surface TCC, MTMC 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 commander in the SPOD. MTMC 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 MTMC 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, MTMC 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. MTMC transportation groups and other MTMC 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.

(2) **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. *For additional information see JP 4-01.5,* Joint Tactics, Techniques, and Procedures for Transportation Terminal Operations.

Prepositioning**

a. DOD prepositioned force, equipment, or supplies (PREPO) programs are both land and sea-based. They are critical programs for reducing closure times of combat and support forces needed in the early stages of a contingency. They also contribute significantly to reducing demands on the DTS.

(1) PREPO operations require a permissive security environment. Therefore, the potential region of crisis must be identified in advance and areas for receiving, issuing, and staging PREPO must be made secure.

(2) Prepositioned equipment requires varying degrees of preparation prior to issue to deploying forces. Equipment stored for years in climate-controlled ships and warehouses will require depreservation, calibration, and some maintenance effort. Services dispatch advance
parties to perform maintenance, offload and/or issue, and staging functions.

(3) The issue and receipt of pre-positioned materiel occurs during Phase IV of the Joint Deployment Process — joint reception, staging, onward movement, and integration (JRSOI). Planning factors for successful PREPO operations include having: a permissive security environment to receive and/or issue, stage, and move pre-positioned equipment forward; sufficient APODs to receive deploying forces; suitable real estate and transportation infrastructure to stage and onward move PREPO; and sufficient in-theater life and logistic support, force protection, and C4I. Finally, when afloat PREPO stocks are needed, sufficient SPOD facilities must be made available to receive afloat PREPO ships. Once discharged, the combatant commander can release OPCON of PREPO vessels to MSC for common-user service.

For more information on JRSOI, see JP 4-01.8, Joint Tactics, Techniques, and Procedures for Joint Reception, Staging, Onward Movement, and Integration.

b. The US Army and US Marine Corps pre-positioning programs consist of combat, combat support, and combat service support capabilities, to include in-stream discharge and JLOTS capabilities. Other Service and DLA PREPO programs are logistic oriented. Summaries of DOD land- and sea-based PREPO programs are as follows:

(1) **US Army**. The Army maintains the Army pre-positioned stocks (APS) program. APS has both land and sea components. APS stocks are designated as APS-1 through APS-5. With the exception of APS-1 that consists of sustainment materiel and operational projects stored in CONUS, all other APS sets are land-based OCONUS or afloat, and possess robust combat and sustainment capabilities. APS ships are administratively loaded, while maritime prepositioning ships are spread loaded.

****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.**

(a) **Land-based APS.** The heart of the APS program is the prepositioning of four heavy land-based combat brigades around the world. APS-2 consists of three brigades in Europe, APS-4 consists of one brigade in the Pacific, and APS-5 consists of two brigades in Southwest Asia. Combat power in each of the brigade in the Pacific and Southwest Asia includes: M1A1 main battle tanks; Bradley Fighting Vehicles; M109 self-propelled 155mm Howitzers and Multiple-Launch Rocket systems; and Stinger air defense weapons. In addition, each set has several hundred cargo, tanker, and palletized load system vehicles.

(b) **Sea-based APS.** APS-3 is stored aboard a fleet of approximately 12 vessels. APS-3 possesses the combat power of two heavy brigade sets. APS-3 also has logistic stores that can be used for sustainment of combat operations and for humanitarian relief operations. For example, it has sustainment aboard two ships to supply a corps for 30 days, and substantial class V stored separately aboard two other ships. In addition, APS-3 possesses port opening packages and JLOTS capabilities for use when seaports do not exist, are unavailable, or are insufficient. APS-3 is intended primarily to support United States Central Command and United States Pacific Command. It can perform split missions. For example, ships carrying mostly combat equipment may remain in one theater, while vessels with humanitarian supplies are supporting disaster relief operations in another theater.

(c) **Other APS.** In addition to APS-1 through APS-5, the Army stores Division support unit sets in Qatar and pre-positions hospitals in Bahrain, Kuwait, South Korea, Japan, and afloat. Additional capabilities stored ashore and afloat include inland pipeline distribution systems, pre-packed airdrop for light division resupply, Ranger resupply, special operations forces equipment, mortuary affairs materiel, bridging equipment, portable Army airfields, and sustainment supplies. Finally, the Army prepositions 36 Force Provider modules that serve as pre-packaged base camps. Each Force Provider module supports 550 soldiers.

(2) **US Marine Corps.** The Marine Corps depends heavily on afloat prepositioning, known as the maritime pre-positioning force (MPF). MPF consists of three maritime prepositioning ships squadrons (MPSRONs) consisting of five to six ships per squadron. MPSRONs are strategically deployed around the globe to provide critical Marine Corps combat and sustainment capability. Major end items in each MPSRON include M1A1 main battle tanks, amphibious assault vehicles, 155mm artillery pieces, and wheeled vehicles. With the arrival of a fly-in echelon, the MPSRON offers the full range of capabilities inherent to a Marine expeditionary brigade (MEB). Each MPSRON has substantial combat service support stocks to include 30 days of sustainment for a 18,000 person MEB, bulk fuel and water storage and discharge capabilities, in-stream discharge equipment, and helicopter decks for transfer of personnel. Stocks are spread-loaded among vessels within each MPSRON, thereby eliminating the need to discharge all vessels in order to obtain required types and quantities of equipment and cargo. The Marine Corps also maintains land-based prepositioned assets in Norway sufficient to support a MEB for 30 days with equipment and supplies.

(3) **US Air Force.** The Air Force pre-positions equipment and supplies both afloat and on land. The primary commodity pre-positioned afloat is ammunition. On land, the Air Force prepositions standard air munitions packages, theater ammunition stocks, and life support and flightline support complexes. A unique capability also pre-positioned by the Air Force is the bare base life support system intended for use in war, contingencies, and natural disasters. The Air Force has two variations — Harvest Falcon and Harvest Eagle. Harvest Falcon is an air transportable system composed of hard wall shelters, Tent Expandable Modular Personnel tents, and a suite of equipment designed to overcome climate and infrastructure limitations for an extended period of time. It can support up to 55,000 personnel and 822 aircraft at 15 bed-down locations in a variety of configurations. Standard prerequisites for establishing a Harvest Falcon complex are a runway, aircraft parking area, and a source of water that can be made potable. Harvest Eagle is a similar but more limited system designed for shorter periods of operation.

(4) **US Navy.** The Navy prepositions ammunition afloat aboard one vessel. In addition, two aviation support vessels are pre-positioned for the Marine Corps; one is stationed on the East Coast of the United States, and one is stationed on the West Coast.

(5) **DLA.** DLA pre-positions bulk fuel aboard several petroleum tankers. They provide fuel support during contingencies when land-based petroleum is either unavailable or insufficient. Available for use onboard some of the tankers is the OPDS to transfer liquid petroleum from ship-to-shore. Each OPDS-outfitted ship can discharge 1.2 million gallons of fuel per day from up to 4 miles offshore. Service or HN in-shore petroleum distribution systems help complete the conveyance of petroleum from ship-to-shore and store petroleum products until transferred to tanker trucks for inland transport and distribution.

II. Concept of Operations

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 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.**

Deployment operations involve four phases: predeployment activities; movement to and activities at Point of Embarkation (POE); movement to Point of Debarkation (POD); and JRSOI activities. These phases describe the major activities of a joint force from point of origin to a prescribed destination in theater and are dependent on the JFC's concept for employment. 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 predeployment 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.[****]

Redeployment operations encompass four phases: recovery and reconstitution and preredeployment activities; movement to and activities at POE; movement to POD; 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.[****]

******The information in this section has been directly excerpted from Joint Pub 3-35, *Joint Deployment and Redeployment Operations,* Washington DC: 7 September 1999.**

Operational Command and Control*

Organizations and relationships are based on the operational design, complexity of the operation, and degree of control required. Within the Commander's Estimate of the Situations (CES), the joint force commander determines the organization and command relationships after assigning tasks to subordinates. 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. The combatant commander has the authority to determine the types of subordinate commands from several doctrinal options, including Service components, functional commands, and subordinate joint commands. The options for delegating authority emanate from COCOM and range from OPCON to support.

I. Service Components

All joint forces include Service components. Administrative and logistic support is provided through these Service components. Conducting operations through Service components has certain advantages, which include (See JP 3-0, p. II-15):

- clear and uncomplicated command lines.
- established staffs, familiar with each other.
- common Standard Operating Procedures

However, keep in mind that operations conducted by services will inherently have seams between the forces of the adjacent services. A unified command organized along service component lines is illustrated in Figure 1.

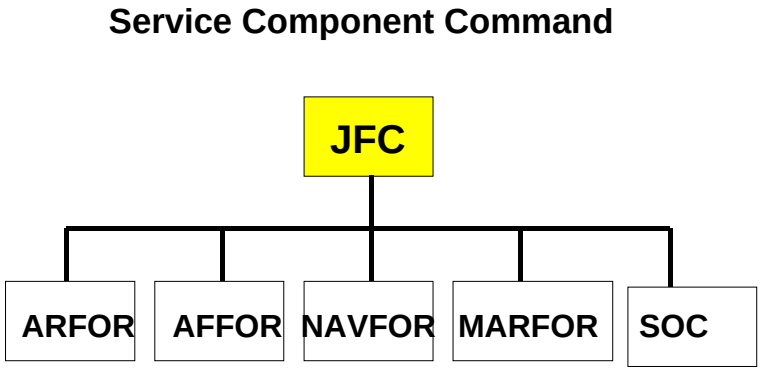


FIGURE 1: Command Organized Along Service Components

***This section was drawn from the U.S. Army War College Campaign Planning Primer, 1 Oct 02.**

POSSIBLE SERVICE COMMANDER RESPONSIBILITIES

- **Making recommendations to the joint force commander (JFC) 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 naval forces)**
- **Coordinating logistic support through Service channels for forces of the Service component**
- **Informing the JFC of planning for changes in logistics 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 requested, supporting joint operation and exercise plans**
- **Establishing combat identification standing operating procedures and other directives based on JFC guidance**
- **Planning and coordinating operations and employing Service forces in support of the JFC's concept of operations**
- **Issuing planning guidance**
- **Analyzing various courses of action**
- **Coordinating with other joint force component commanders and subordinate task forces to ensure the most efficient support is provided to the JFC**
- **Evaluating the results of operations**
- **Focusing on operational-level Service core capabilities**
- **Functioning as a supporting/supported commander, as designated by the JFC**

Figure 2 - extracted and modified for this audience from JP 5-00.2

II. Functional Components

JFCs may establish functional components to provide centralized direction and control of certain functions and types of operations. The advantages of conducting operations through Functional components are:

- the arrangement allows for forces of two different services to operate together in the same medium.
- takes advantage of the synergy that can be gained between complimentary joint forces.

The cost of establishing these types of relationships is in the ad hoc nature of staff formation. Ad hoc staffs need time to work out effective operating procedures. Examples of functional components are Joint Force Land Component Commander (JFLCC), Joint Force Air Component Commander (JFACC), and Joint Force Maritime Component Commander (JFMCC). Figure 3 portrays a unified command organized along functional component lines. Note that establishment of functional commands doesn't dissolve the service component responsibilities of the services. 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. Special Operations Commands (SOC) are inherently joint – they have no one service component. Title 10 responsibilities to support the SOC are provided by the individual services.

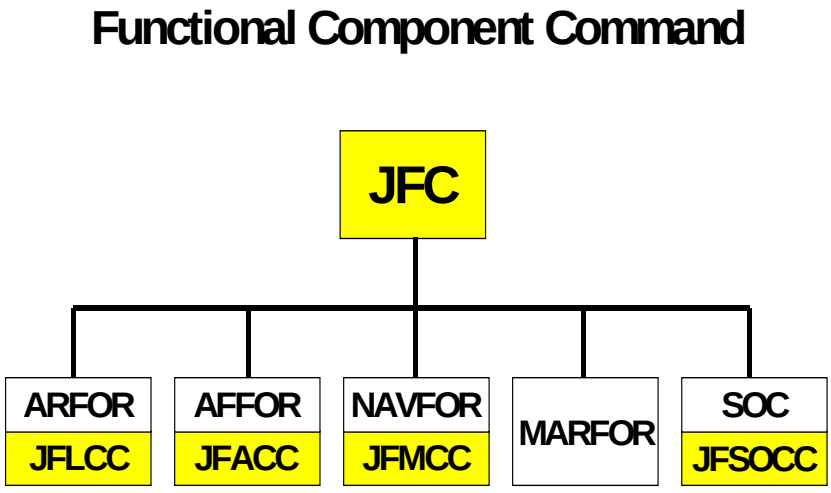


FIGURE 6: Command Organized Along Functional Components

Note: This is for illustrative purposes. The JFACC responsibilities could also be assigned to the NAVFOR or MARFOR. The MARFOR is also an option for the JFLCC.

III. Subordinate Joint Commands

JFCs may also establish subordinate joint commands (JTF), especially in cases where the mission given such a commander requires a fully joint response, but doesn't require all the assets of a unified command to accomplish. Advantages of establishing a subordinate joint command are:

- takes advantage of the synergy that can be gained between the complimentary capabilities of a fully joint force.
- provides unity of command.

The disadvantage, like functional commands, is that the staff must be formed ad hoc – without prior SOPs and knowledge of each other. Figure 4 shows a unified command organized functionally with a JTF. Note that the JTF has its own service forces, and may or may not have its own functional commands. A unified commander could have a mix of functional and subordinate joint commands when he's been given disparate geographic missions within his AOR.

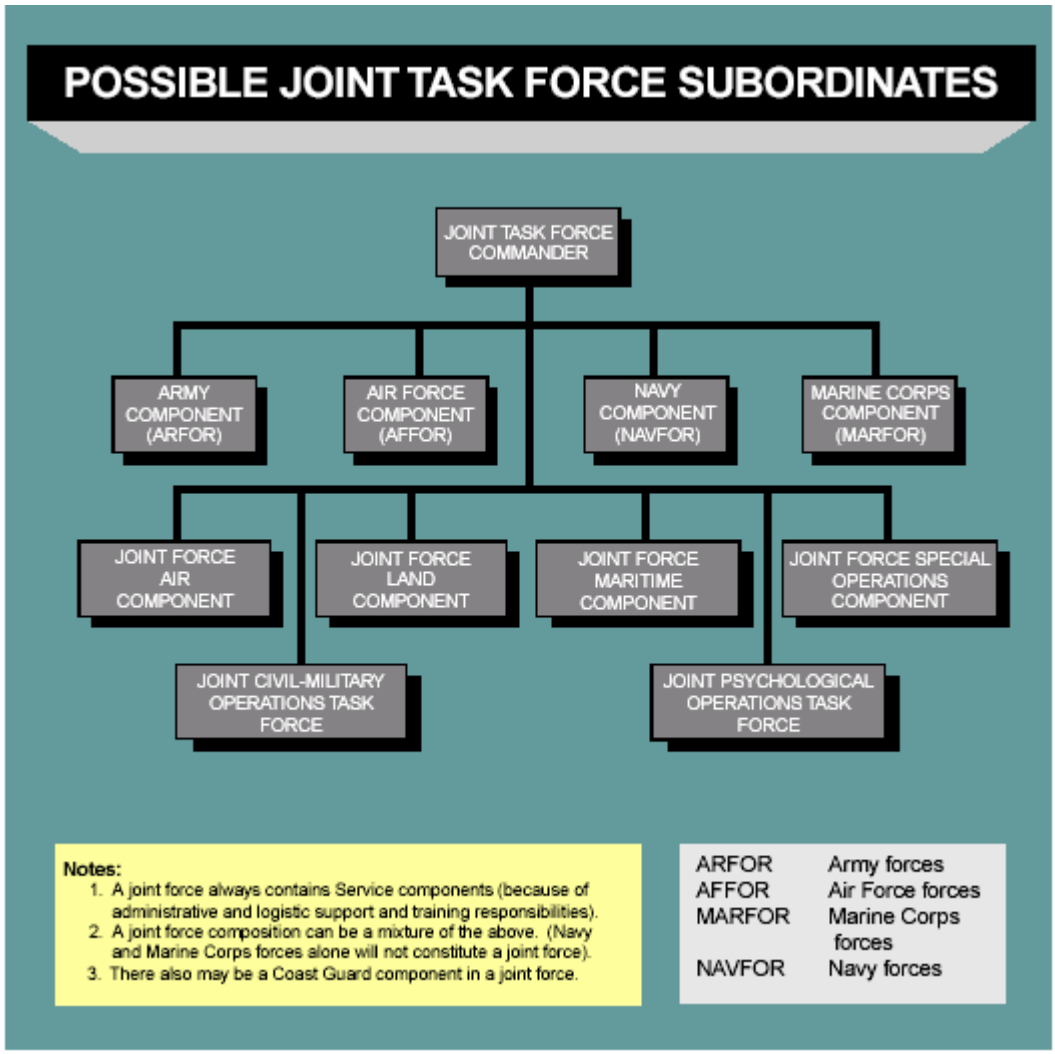


Figure 4 - extracted from JP 5-00.2

POSSIBLE COMPONENT COMMANDER RESPONSIBILITIES

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:**
    1. **Counterair;**
    2. **Strategic air attack;**
    3. **Airborne intelligence, surveillance, and reconnaissance;**
    4. **Air interdiction;**
    5. **Intratheater and Intertheater air mobility;**
    6. **Close air support**
- **Functioning as a supporting/supported commander, as designated by the JFC**

JFLCC

- **Advising the JFC on the proper employment of all land forces under the control of the JFLCC**
- **Planning and coordinating land operations and employing designated land forces in support of the JFC's concept of operations**
- **Issuing planning guidance**
- **Analyzing various courses of action**
- **Coordinating with other component commanders and subordinate task forces to ensure the most efficient support is provided to the JFC**
- **Evaluating the results of land based operations**
- **Focusing on operational-level functions and span of control**
- **Functioning as a supporting/supported commander, as designated by the JFC**
- **Establishing combat identification standing operating procedures and other directives based on JFC guidance**

JFMCC

- **Advising the JFC on the proper employment of all maritime forces under the control of the JFMCC**
- **Planning and coordinating maritime operations and employing designated maritime forces in support of the JFC's concept of operations**
- **Issuing planning guidance**
- **Analyzing various courses of action**
- **Coordinating with other component commanders and subordinate task forces to ensure the most efficient support is provided to the JFC**
- **Evaluating the results of maritime operations**
- **Focusing on operational-level functions and span of control**
- **Functioning as a supporting/supported commander, as designated by the JFC**
- **Establishing combat identification standing operating procedures and other directives based on JFC guidance**

JFSOCC

- **Advising the JFC 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 JFC CONOPS**
- **Issuing planning guidance**
- **Analyzing various courses of action**
- **Coordinating the conduct of SO with other component commanders and subordinate task forces**
- **Evaluating the results of SO**
- **Focusing on operational-level functions and span of control**
- **Establishing combat identification standing operating procedures and other based on JFC guidance**
- **Functioning as a supporting/supported commander, as designated by the JFC directives**

Figure 5 - extracted and modified for this audience from JPs 3-30 and 5-00.2

POSSIBLE SUBORDINATE TASK FORCE RESPONSIBILITIES

JOINT CIVIL-MILITARY OPERATIONS TASK FORCE

- **Advising the JFC 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 logistics 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**
- **Allocating resources and sustaining and coordinating combat support or combat service support elements, including necessary medical, transportation, military police, engineer, and associated maintenance and communications capabilities**
- **Advising and assisting in strengthening or stabilizing civil infrastructures and service 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 responsibilities**
- **Assessing or identifying host-nation civil support, relief, or funding requirements to the JFC for transmission to supporting commanders, Military Services, or other responsible USG agencies**
- **Establishing combat identification standing operating procedures and other based on JFC guidance**

JOINT PSYCHOLOGICAL OPERATIONS TASK FORCE

- **Advising the JFC on psychological operations (PSYOP)**
- **Conducting PSYOP planning and execution**
- **Issuing planning guidance**
- **Analyzing various courses of action**
- **Producing PSYOP products**
- **Coordinating with other component commanders and subordinate task forces to ensure the most efficient support is provided to the JFC**
- **Conducting PYSOP dissemination operations**
- **Evaluating the results of PSYOP**
- **Conducting liaison with host-nation agencies and other United States Government organizations**
- **Establishing combat identification standing operating procedures and other directives based on JFC guidance**

Figure 6 - extracted and modified for this audience from JP 5-00.2

IV. Combined Force Organization

Fusing a coalition together is much more complex, therefore attaining unity of effort can be very challenging. There are essentially three types of combined C2 structures, *parallel*, *lead nation*, and *combination*.

Parallel Command Structures

When two or more nations combine to form a coalition, and none of the nations are designated to take the lead, a parallel structure must be formed. Why nations won't subordinate their forces to foreign command are many, including political factors, national prestige, lack of Status of Forces Agreements (SOFA), lack of military interoperability, protection of intelligence sources, etc. By definition, a parallel command structure has two or more lead nations of equal influence. Therefore, parallel structures don't ensure unity of command; however, they can achieve unity of effort. The key is to establish a Coalition Coordination Center (CCC) at the theater level in order to coordinate and synchronize combined operations throughout the theater campaign. Advantages of forming a parallel structure as opposed to subordinating nations under the authority of one nation are:

- It's much easier to form the coalition this way; partners are more comfortable politically.
- It eases the ability to sustain the force because each nation supports itself.
- It's politically and militarily easier for a nation to withdraw from the coalition once the coalition's objectives diverge from your own.
- Greater staff effectiveness within each nations' militaries because the staffs of different nations remain non-integrated.

Alternatively, parallel command structures have seams which a wise adversary may exploit, and the lack of coalition integration may lead to pursuit of a course of action which sub-optimizes the capabilities of the combined force. An example of a parallel structure is shown in Figure 7.

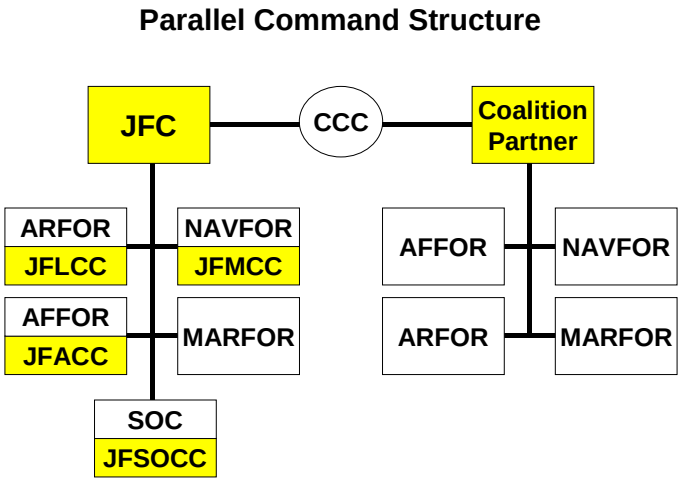


FIGURE 8: U.S. and Partner Coalition Command Structure

Lead Nation Command Structures

Lead nation command structures are usually found in alliances, or in coalitions where other nations have an existing working relationship with the lead nation. NATO is a good example of a lead nation command structure with the U.S. as its lead. Unlike parallel structures, lead nation staffs are usually integrated if national disclosure policy issues, intelligence sharing, SOFAs, and interoperability problems can be worked out in advance. Lead nation structures are advantageous:

- Because the seams within the combined force can be minimized.
- Because it ensures unity of command.
- Because it will be harder to shatter due to the level of integration.

There are drawbacks however. Lead nation structures are not without political issues that can paralyze the Combined Force Commander (CFC). Because every nation has a "vote", decision making can still be slow and cumbersome. Finally, each nation will have to compromise on sovereignty issues to get along with each other. An example of a lead nation structure is shown in Figure 8. Note the CFC's integrated staff. Depending upon the amount of time the coalition has to form, integration could take place down to the functional/service component level. Coalition forces will normally support the lead nation either in an OPCON or TACON relationship.

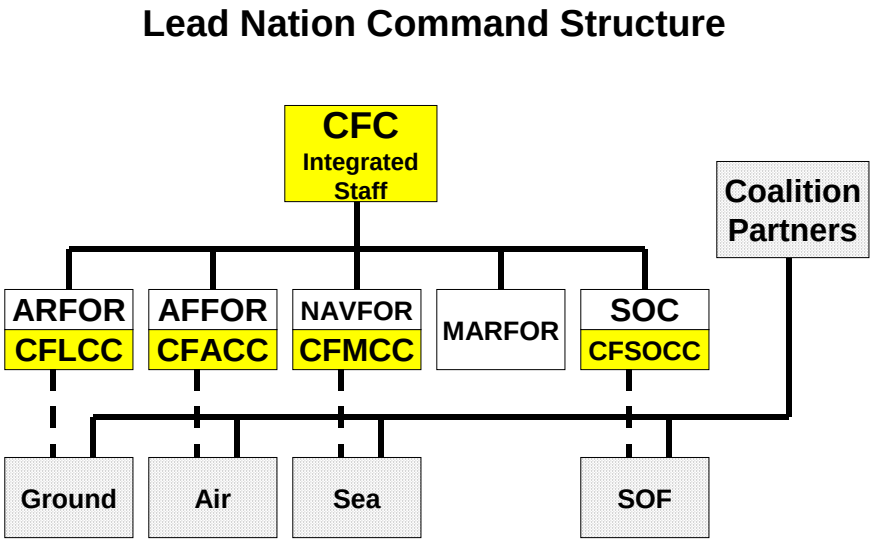


FIGURE 9: U.S. Lead Nation Command Structure

Combination Command Structures

Combination structures are a blend of parallel and lead nation. This normally happens in large coalitions where U.S. allies are willing to accede the lead to the U.S., but other non-allied partners are not. Such was the case in DESERT SHIELD/DESERT STORM. NATO allies were integrated into the U.S. structure, whereas Islamic nations were integrated into the Saudi Structure. Example is shown in Figure 9. Note the allies subordinating their forces under U.S. control in either an OPCON or TACON relationship, whereas the other coalition partners are led by a parallel nation in equal stature to the U.S. and their forces only have a coordinating relationship with ours.

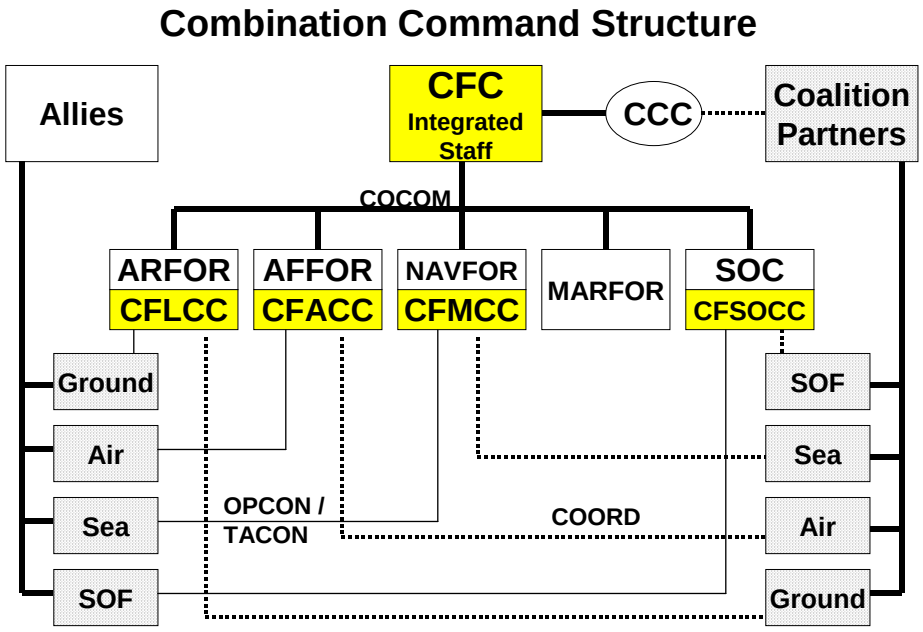


FIGURE 10: Combination Command Structure

V. Considerations

The following are considerations for establishing Joint Force Organizations:

- JFCs will normally designate JFACCs and organize special operations forces into a functional component.(JP 3-0)
- Joint Forces will normally be organized with a combination of Service and functional components with operational responsibilities.(JP 3-0)
- Functional component staffs should be joint with Service representation in approximate proportion to the mix of subordinate forces. These staffs will be required to be organized and trained prior to employment in order to be efficient and effective, which will require advanced planning.
- combatant commanders may establish supporting/supported relationships between components to facilitate operations.
- combatant commanders define the authority and responsibilities of functional component commanders based on the strategic concept of operations and may alter their authority and responsibility during the course of an operation.
- Combatant commanders must balance the need for centralized direction with decentralized execution.
- Major changes in the Joint Force organization is normally conducted at phase changes.

VI. Requirements for Supporting Plans

The combatant commander, Service component commanders, functional component commanders, and subordinate JFCs consider a total resource support concept that is integrated, vertically and horizontally, into supporting plans for theater and subordinate campaigns or major operations. The combatant commander and subordinate JFCs and their staffs develop these plans based on unified support that can be provided from national-level assets, supporting combatant commanders, Service and functional components, alliance or coalition partners, other government agencies, non-government or private agencies, international agencies, United Nations efforts, and host nations.

Supporting plans may address tasks and support requirements during mobilization, pre-deployment, deployment, force projection operations, employment, post-conflict operations, redeployment, and demobilization. They address requirements for political, informational, as well as economic coordination and support. Detailed support during the various phases of the theater campaign is also contained in a supporting plan.

Supporting commanders synchronize their plans with the theater campaign plan. They time-sequence mobilization to support employment, deployment and force projection with employment, and employment with execution, execution with sustainment, and vice versa. They identify resources and necessary liaison early, as the plan is being developed. Supporting plans provide for liaison from the supporting to the supported combatant commander who controls all support into the theater. Coordination will be required with allies, coalition forces, and host nations on intra-theater movements. Plans to effect intra-

theater movement should provide the combatant commander the maximum possible control of the movement and concentration of forces and materiel, which will permit rapid response to changing situations as the campaign develops.

Supporting and subordinate commanders and supporting U.S. departments and agencies use the combatant commander's strategic concepts of operation and tasks for subordinates as the basis for determining the necessary support for each phase of the campaign plan. Supporting and subordinate commanders respond to the identified tasks by preparing supporting plans and submitting them for approval to the supported combatant commander.

Considerations

The following are considerations for developing supporting plans:

- The combatant commander identifies space and intelligence support requirements for the campaign through the development or revalidation of a supporting space and/or intelligence plan. This plan will identify requirements for national-level support from DOD intelligence agencies, NRO, NIMA, SPACECOM, and the military Services.

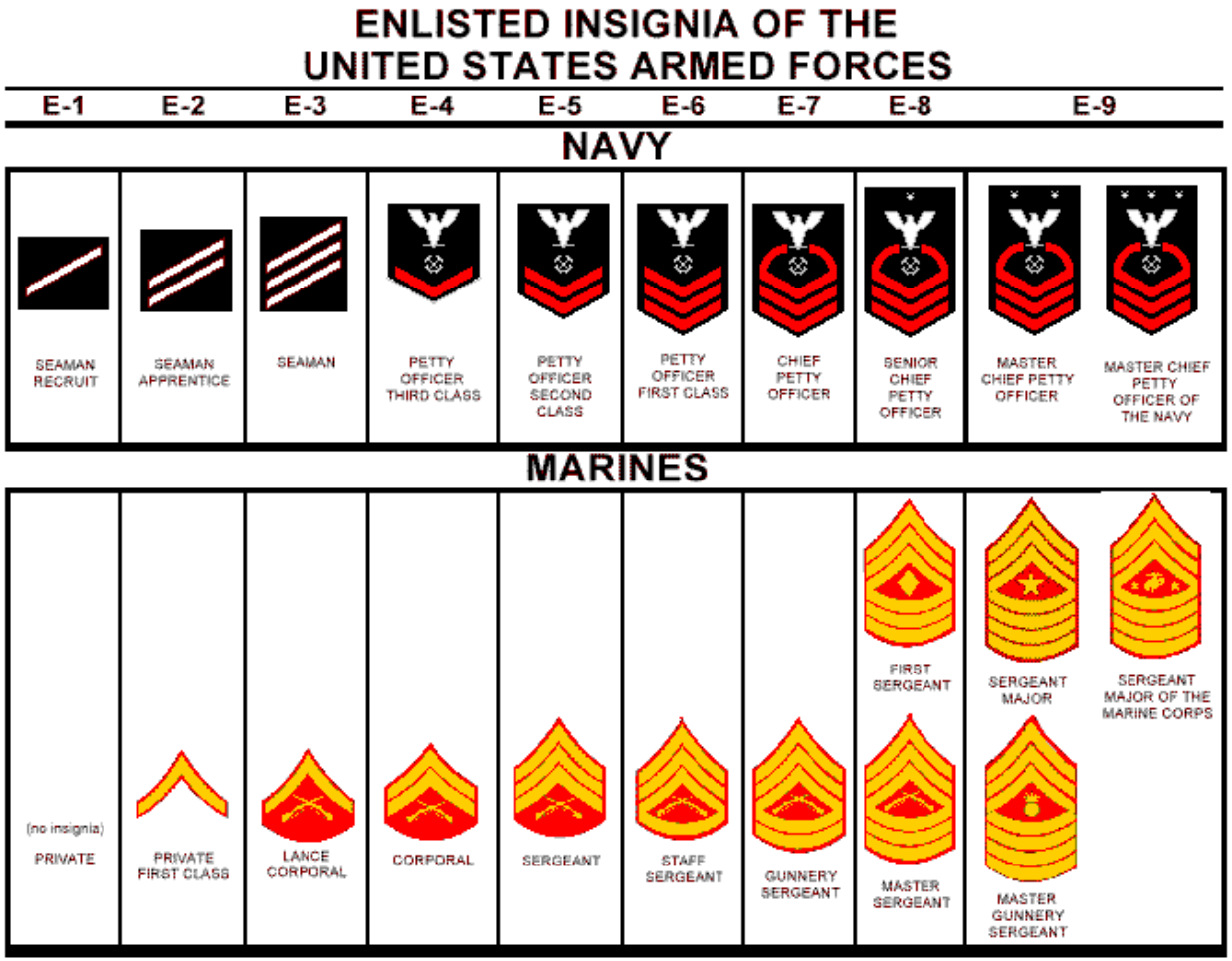
- Through the development of a mobility plan and a civil engineering support plan, the combatant commander identifies engineer requirements for strategic and operational mobility, construction, and real estate for the campaign. These plans will identify requirements for national-level support from non-DOD government agencies and the Services.

- Strategic Command and Special Operations Command may prepare supporting plans for the employment of unique forces from their commands in support of a theater campaign plan.

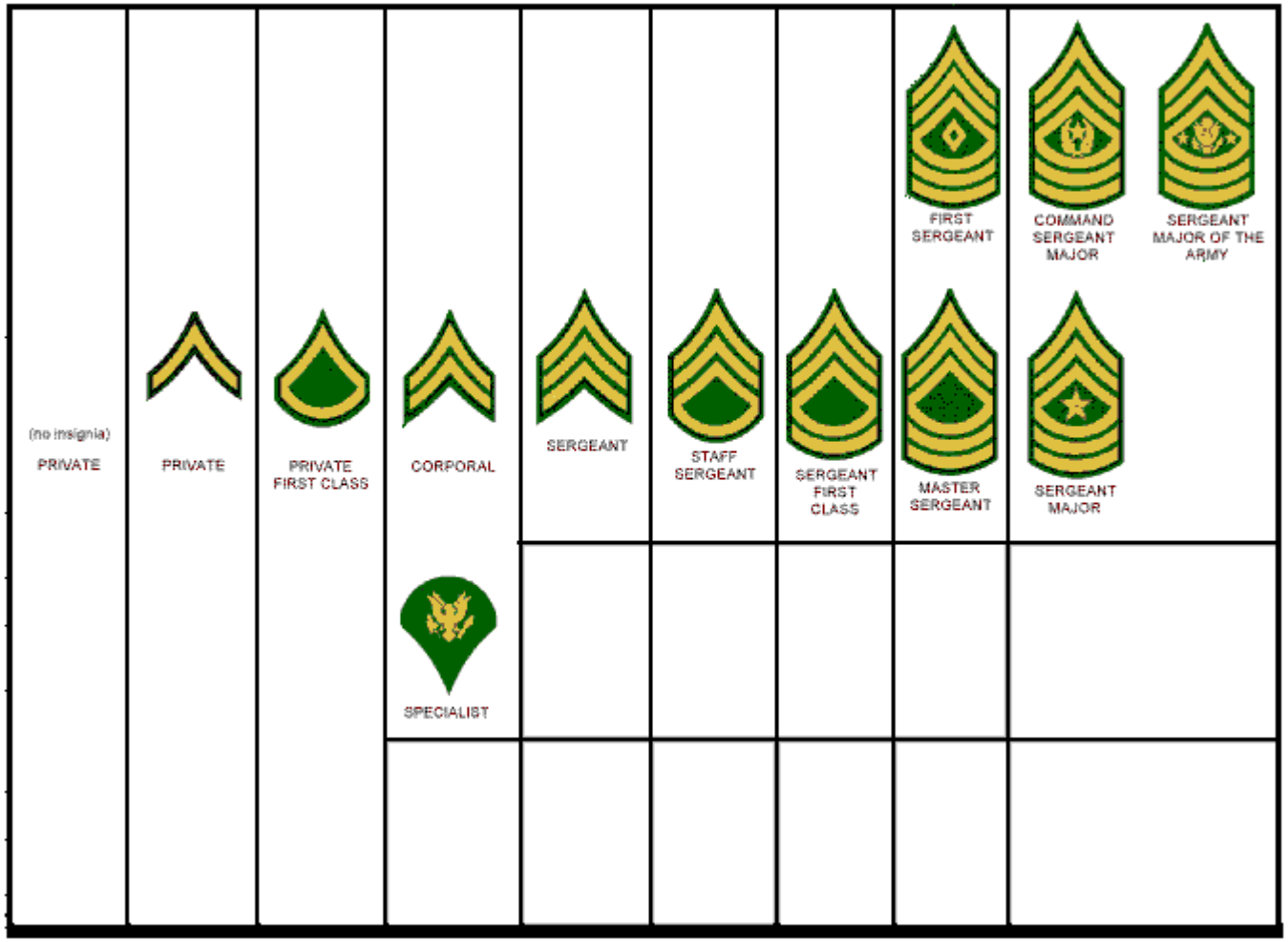
- Functional supporting major operations plans. JP 3-30 describes the Joint Air Operations Plan (JAOP) as the functional plan required to be prepared by the JFACC. Similarly, NDP 5 refers to a Naval Operations Plan to be prepared by a Naval Component Commander. By analogy, the JFLCC and the JFSOCC should prepare Joint Land Operations Plans and Joint Special Operations Plans respectively.

APPENDIX A

SERVICES' INSIGNIA

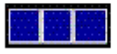


ARMY

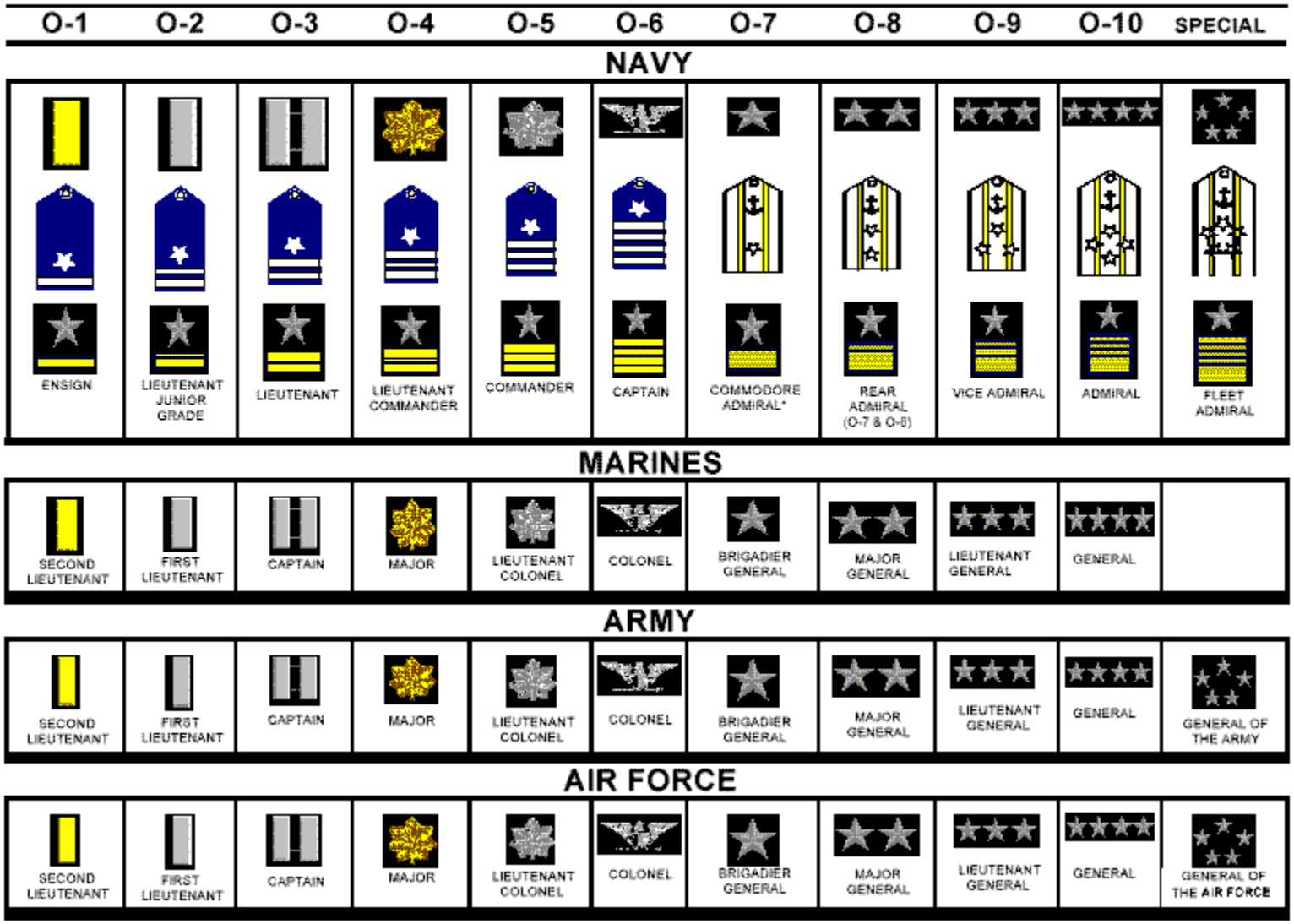

(no insignia)
PRIVATE
PRIVATE
PRIVATE FIRST CLASS
CORPORAL
SPECIALIST
SERGEANT
STAFF SERGEANT
SERGEANT FIRST CLASS
FIRST SERGEANT
MASTER SERGEANT
COMMAND SERGEANT MAJOR
SERGEANT MAJOR
SERGEANT MAJOR OF THE ARMY

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



APPENDIX B

CONVERSION CHART

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 CHART (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

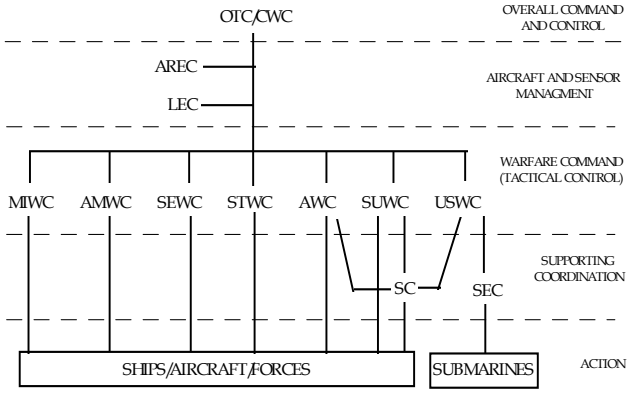
Navy Composite Warfare Commander (CWC) Concept

During the Cold War because of the complexities of command and control in modern naval warfare, the Navy developed the "Composite Warfare Commander" concept within a task organization. Today, the Joint Force Commander has assumed a number of the functions of the CWC. However, the concept is still used, in particular for self-defense.

Under the CWC architecture, the Officer in Tactical Command (OTC) delegates command authority in particular warfare areas to subordinate commanders within his organization. He may even delegate overall coordination of defensive warfare areas to a CWC, although this is very rare. Thus, the terms CWC and OTC are usually interchangeable. Subordinate to the CWC are principal warfare commanders - the air warfare commander (AWC), strike warfare commander (STWC), surface warfare commander (SEWC), space and electronic warfare commander (SEWC), undersea warfare commander (USWC), amphibious warfare commander(AMWC), and mine warfare commander (MIWC). The OTC can retain direct command in any one (or more) warfare area(s) if desired.

The warfare commanders are responsible for collecting, evaluating, and disseminating tactical information and, at the discretion of the CWC, are delegated authority to respond to threats with assigned forces. If the warfare commanders are delegated authority to respond to threats in accordance with the rules-of-engagement (ROE), the CWC can still exercise control via "command by negation."

Supporting the CWC and the warfare commanders are the submarine element coordinator (SEC), a cell of the ASWC staff, who, when assigned, is responsible for coordinating the actions of support submarines; the screen coordinator (SC) responsible to the USWC, SUWC, AWC, AMWC, and MIWC for coordinating ships in the screen; the air element coordinator (AREC), who is responsible for managing and coordinating the distribution of aircraft and keeping the CWC and other warfare commanders and coordinators apprised of air operations; and the LAMPS element coordinator (LEC) who performs a similar function as the AREC for LAMPS helicopters. *The supporting coordinators differ from the warfare commanders in one very important respect. When authorized by the CWC, the warfare commanders have tactical control of resources assigned and may autonomously initiate action. The supporting coordinators execute policy, but do not initiate autonomous actions.*



APPENDIX D

ABBREVIATIONS AND ACRONYMS

A

A	-	ATTACK (AIRCRAFT)
AASLT	-	AIR ASSAULT
AAV	-	AMPHIBIOUS ASSAULT VEHICLE
AAW	-	ANTI-AIR WARFARE
ABCCC	-	AIRBORNE BATTLEFIELD COMMAND AND CONTROL CENTER
ABN	-	AIRBORNE
ABW	-	AIR BASE WING
ACC	-	AIR COMBAT COMMAND AIR COMPONENT COMMANDER
ACE	-	AVIATION COMBAT ELEMENT
ACF	-	AIR CONTINGENCY FORCE
ACFT	-	AIRCRAFT
ACW	-	AIR CONTROL WING
AD	-	DESTROYER TENDER (SHIP)
AE	-	AMMUNITION SHIP
AFB	-	AIR FORCE BASE
AFS	-	COMBAT STORES SHIP
AGF	-	FLEET COMMANDER FLAGSHIP
AI	-	AIR INTERDICTION
ALCM	-	AIR LAUNCHED CRUISE MISSILE
ALO	-	AIR LIAISON OFFICER
AMC	-	AIR MOBILITY COMMAND
AMRAAM	-	ADVANCED MEDIUM RANGE AIR TO AIR MISSILE
AMW	-	AMPHIBIOUS WARFARE AIR MOBILITY WING
AMWC	-	AMPHIBIOUS WARFARE COMMANDER
AO	-	FLEET OILER (SHIP)
AOA	-	AMPHIBIOUS OBJECTIVE AREA
AOE	-	FAST COMBAT SUPPORT SHIP
AOR	-	AREA OF RESPONSIBILITY REPLENISHMENT OILER (SHIP)
APAM	-	ANTI-PERSONNEL, ANTI-MATERIAL
AR	-	REPAIR SHIP
AREC	-	AIR RESOURCE ELEMENT COORDINATOR
ARG	-	AMPHIBIOUS READINESS GROUP
ARS	-	SALVAGE SHIP
ARTY	-	ARTILLERY
ARW	-	AIR REFUELING WING
AS	-	SUBMARINE TENDER (SHIP)

ASOC	-	AIR SUPPORT OPERATIONS CENTER
ASR	-	SUBMARINE RESCUE SHIP
ASROC	-	ANTI-SUBMARINE ROCKET
ATACMS	-	ARMY TACTICAL MISSILE SYSTEM
ATF	-	AMPHIBIOUS TASK FORCE
ATS	-	SALVAGE SHIP (TUG)
AW	-	AIRLIFT WING
AW	-	AIR WARFARE
AWACS	-	AIRBORNE WARNING AND CONTROL SYSTEM
AWC	-	AIR WARFARE COMMANDER

B

B	-	BOMBER (AIRCRAFT)
BBL	-	BARREL (42 gallons)
BCE	-	BATTLEFIELD COORDINATION ELEMENT
BDE	-	BRIGADE
BG	-	BATTLE GROUP
BN	-	BATTALION
BSSG	-	BATTALION SERVICE SUPPORT GROUP
BTRY	-	BATTERY
BW	-	BOMBARDMENT WING

C

C	-	TRANSPORT/CARGO (AIRCRAFT)
CA	-	CIVIL AFFAIRS
CAB	-	COMBAT AVIATION BRIGADE
CAG	-	CARRIER AIR WING COMMANDER
CAP	-	COMBAT AIR PATROL
CAS	-	CLOSE AIR SUPPORT
CATF	-	COMMANDER, AMPHIBIOUS TASK FORCE
CCC	-	COMMAND, CONTROL, COMMUNICATIONS
CE	-	COMMAND ELEMENT
CEC	-	COOPERATIVE ENGAGEMENT CONCEPT
CEG	-	CONVOY ESCORT GROUP
CFV	-	CAVALRY FIGHTING VEHICLE (BRADLEY)
CG	-	GUIDED MISSILE CRUISER
CGFMF	-	COMMANDING GENERAL FLEET MARINE FORCE
CGN	-	GUIDED MISSILE CRUISER (NUCLEAR POWERED)
CINC	-	COMMANDER-IN-CHIEF
CIWS	-	CLOSE-IN WEAPON SYSTEM
CLF	-	COMBAT LOGISTICS FORCE COMMANDER, LANDING FORCE
CO	-	COMMANDING OFFICER COMPANY

COD - CARRIER ONBOARD DELIVERY
COMINT - COMMUNICATION INTELLIGENCE
CONREP - CONNECTED REPLENISHMENT
CONUS - CONTINENTAL UNITED STATES
CRAF - CIVIL RESERVE AIR FLEET
CRC - CONTROL AND REPORTING CENTER
CRP - CONTROL AND REPORTING POST
CSAB - COMBAT SUPPORT AVIATION BATTALION
CSSE - COMBAT SERVICE SUPPORT ELEMENT
CT - COUNTERTERRORISM
CTE - COMMANDER TASK ELEMENT
CTF - COMMANDER TASK FORCE
CTG - COMMANDER TASK GROUP
CTU - COMMANDER TASK UNIT
CV - AIRCRAFT CARRIER (CONVENTIONAL POWERED)
CVBF - CARRIER BATTLE FORCE
CVBG - CARRIER BATTLE GROUP
CVN - AIRCRAFT CARRIER (NUCLEAR POWERED)
CVW - CARRIER AIR WING
CWC - COMPOSITE WARFARE COMMANDER

D

DA - DIRECT ACTION
DCA - DEFENSIVE COUNTER AIR
DD - DESTROYER
DDG - GUIDED MISSILE DESTROYER
DIV - DIVISION
DIVARTY - DIVISION ARTILLERY
DP ICM - DUAL PURPOSE IMPROVED CONVENTIONAL MUNITION
DSRV - DEEP SUBMERGENCE RESCUE VEHICLE

E

E - ELECTRONIC WARFARE (AIRCRAFT)
EAC - ECHELONS ABOVE CORPS
ECCM - ELECTRONIC COUNTER COUNTERMEASURES
ECM - ELECTRONIC COUNTERMEASURES
EHF - EXTREMELY HIGH FREQUENCY
ELINT - ELECTRONIC INTELLIGENCE
EOD - EXPLOSIVE ORDNANCE DISPOSAL
ESM - ELECTRONIC SUPPORT MEASURES
EW - ELECTRONIC WARFARE (MISSION)

F

F	-	FIGHTER (AIRCRAFT)
FAC	-	FORWARD AIR CONTROLLER
FACP	-	FORWARD AIR CONTROL POST
FEBA	-	FORWARD EDGE BATTLE AREA
FFG	-	GUIDED MISSILE FRIGATE
FID	-	FOREIGN INTERNAL DEFENSE
FLIR	-	FORWARD LOOKING INFRARED RADAR
FLOT	-	FORWARD LINE OWN TROOPS
FMF	-	FLEET MARINE FORCE
FSSG	-	FORCE SERVICE SUPPORT GROUP
FW	-	FIGHTER WING
FWT	-	FUNDAMENTAL WARFARE TASKS
FY	-	FISCAL YEAR

G

GCE	-	GROUND COMBAT ELEMENT
GSAB	-	GENERAL SUPPORT AVIATION BATTALION

H

H	-	RESCUE/MEDICAL/GENERAL PURPOSE (AIRCRAFT)
HALO	-	HIGH ALTITUDE LOW OPEN
HARM	-	HIGH SPEED ANTI-RADIATION MISSILE
HE	-	HIGH EXPLOSIVE

I

ICBM	-	INTER-CONTINENTAL BALLISTIC MISSILE
ID	-	INFANTRY DIVISION
IFV	-	INFANTRY FIGHTING VEHICLE (BRADLEY)
INF	-	INFANTRY
I&W	-	INDICATIONS AND WARNING

J

JFACC	-	JOINT FORCE AIR COMPONENT COMMANDER
JSOC	-	JOINT SPECIAL OPERATIONS COMMAND
JSOTF	-	JOINT SPECIAL OPERATIONS TASK FORCE
JSTARS	-	JOINT SURVEILLANCE AND TARGET ATTACK RADAR SYSTEM
JSTPS	-	JOINT STRATEGIC TARGET PLANNING STAFF

K

K	-	TANKER (AIRCRAFT)

L

LAMPS	-	LIGHT AIRBORNE MULTI-PURPOSE SYSTEM
LAV	-	LIGHT ARMORED VEHICLE
LCAC	-	LANDING CRAFT AIR CUSHION
LCC	-	AMPHIBIOUS COMMAND SHIP
LCU	-	LANDING CRAFT
LEAP	-	LIGHTWEIGHT EXO-ATMOSPHERIC PROJECTILE
LEC	-	LAMPS ELEMENT COORDINATOR
LHA	-	AMPHIBIOUS ASSAULT SHIP (TARAWA CLASS)
LHD	-	AMPHIBIOUS ASSAULT SHIP (WASP CLASS)
LKA	-	AMPHIBIOUS CARGO SHIP
LOSAT	-	LINE-OF-SIGHT ANTITANK WEAPON
LPD	-	AMPHIBIOUS TRANSPORT DOCKS
LPH	-	AMPHIBIOUS ASSAULT SHIP (IWO JIMA CLASS)
LSD	-	DOCK LANDING SHIP
LST	-	TANK LANDING SHIP
LT INF	-	LIGHT INFANTRY

M

M	-	SOF/MINE COUNTERMEASURES (AIRCRAFT)
MACG DET	-	MARINE AIR CONTROL GROUP DETACHMENT
MAG	-	MARITIME ACTION GROUP MARINE AIRCRAFT GROUP
MAGTF	-	MARINE AIR GROUND TASK FORCE
MAW	-	MARINE AIRCRAFT WING MEDIUM ANTI-TANK ASSAULT WEAPON
MBT	-	MAIN BATLE TANK
MCM	-	MINE COUNTERMEASURES MINE COUNTERMEASURES SHIP
MEB	-	MARINE EXPEDITIONARY BRIGADE
MEF	-	MARINE EXPEDITIONARY FORCE
MEF(FWD)	-	MARINE EXPEDITIONARY FORCE (FORWARD)
MEU	-	MARINE EXPEDITIONARY UNIT
MEU(SOC)		MARINE EXPEDITIONARY UNIT SPECIAL OPERATIONS CAPABLE
MHC	-	MINE HUNTER COASTAL SHIP
MHS	-	MINE COUNTERMEASURES HELICOPTER SUPPORT SHIP
MIRV	-	MULTIPLE INDEPENDENTLY TARGETABLE RE-ENTRY VEHICLE
MIW	-	MINE WARFARE

MIWC	-	MINE WARFARE COMMANDER
MLRS	-	MULTIPLE LAUNCH ROCKET SYSTEM
MPA	-	MARITIME PATROL AIRCRAFT
MPF	-	MARITIME PREPOSITIONING FORCE MARINE
MPS TAK	-	MARITIME PREPOSITIONING SHIP (LASH)
MSC	-	MILITARY SEALIFT COMMAND
MW	-	MISSILE WING
M1/M1A1	-	ABRAMS TANK

N

NALE	-	NAVY AMPHIBIOUS LIAISON ELEMENT
NEACP	-	NATIONAL EMERGENCY AIRBORNE COMMAND POST
NEO	-	NON-COMBATANT EVACUATION OPERATION
NSSMS	-	NATO SEA SPARROW MISSILE SYSTEM
NSW	-	NAVAL SPECIAL WARFARE
NVG	-	NIGHT VISION GEAR

O

O	-	OBSERVATION (AIRCRAFT)
OA	-	OBSERVATION AIRCRAFT
OCA	-	OFFENSIVE COUNTER AIR
OCONUS	-	OUTSIDE CONTINENTAL UNITED STATES
OTC	-	OFFICER IN TACTICAL COMMAND

P

P	-	PATROL (AIRCRAFT)
PACAF	-	PACIFIC AIR FORCES
PC	-	COASTAL PATROL BOAT
PERMA	-	PLANNING, EMBARKATION, REHEARSAL, MOVEMENT, ASSAULT
PLT	-	PLATOON
POL	-	PETROLEUM/OIL/LUBRICANTS
PSYOP	-	PSYCHOLOGICAL OPERATIONS

R

R	-	RECONNAISSANCE (AIRCRAFT)
RAP	-	ROCKET ASSISTED PROJECTILE
R&D	-	RESEARCH AND DEVELOPMENT
ROC	-	REQUIRED OPERATIONAL CAPABILITY
RO/RO	-	ROLL-ON/ROLL-OFF
RPV	-	REMOTE PILOT VEHICLE

S

S	-	STRATEGIC/SEARCH (AIRCRAFT)
SAG	-	SURFACE ACTION GROUP
SAR	-	SEARCH AND RESCUE SYNTHETIC APERTURE RADAR
SBU	-	SPECIAL BOAT UNIT
SC	-	SCREEN COORDINATOR
SDV	-	SEAL DELIVERY VEHICLE
SEAD	-	SUPPRESSION ENEMY AIR DEFENSES
SEAL	-	SEA AIR AND LAND
SEC	-	SUBMARINE ELEMENT COORDINATOR
SEW	-	SPACE AND ELECTRONIC WARFARE
SEWC	-	SPACE AND ELECTRONIC WARFARE COMMANDER
SF	-	SPECIAL FORCES
SHF	-	SUPER HIGH FREQUENCY
SIGINT	-	SIGNAL INTELLIGENCE
SIOP	-	SINGLE INTEGRATED OPERATIONAL PLAN
SM	-	STANDARD MISSILE
SOA	-	SPECIAL OPERATIONS AVIATION
SOF	-	SPECIAL OPERATIONS FORCES
SOFLE	-	SPECIAL OPERATIONS FORCES LIAISON ELEMENT
SOW	-	SPECIAL OPERATIONS WING
SP	-	SELF PROPELLED
SPLL	-	SELF PROPELLED LOADED LAUNCHER
SPMAGTF	-	SPECIAL PURPOSE MARINE AIR GROUND TASK FORCE
SR	-	SPECIAL RECONNAISSANCE
S&R	-	SURVEILLANCE AND RECONNAISSANCE
SRAM	-	SHORT RANGE ATTACK MISSILE
SRBOC	-	SUPER RAPID BLOOMING OVERHEAD CHAFF
SRIG	-	SURVEILLANCE RECONNAISSANCE AND INTELLIGENCE GROUP
SSBN	-	SUBMARINE, BALLISTIC
SSGN	-	SUBMARINE, GUIDED MISSILE
SSN	-	SUBMARINE, ATTACK
STW	-	STRIKE WARFARE
STWC	-	STRIKE WARFARE COMMANDER
SUW	-	SURFACE WARFARE
SUWC	-	SURFACE WARFARE COMMANDER
SW	-	SUPPORT WING

T

T	-	TRAINER/TACTICAL (AIRCRAFT) TOWED (ARTILLERY)
TACC	-	TACTICAL AIR COMMAND CENTER (USMC)

		TACTICAL AIR CONTROL CENTER (USN)
TACP	-	TACTICAL AIR CONTROL PARTY
TAH	-	HOSPITAL SHIP
TARP	-	TACTICAL AIR RECONNAISSANCE POD
TASM	-	TOMAHAWK ANTI-SHIP MISSILE
TAVB	-	AVIATION LOGISTICS SUPPORT SHIP
TBMD	-	THEATER BALLISTIC MISSILE DEFENSE
TLAM	-	TOMAHAWK LAND ATTACK MISSILE
TOW	-	TUBE LAUNCHED, OPTICALLY TRACKED, WIRE GUIDED ANTI-TANK MISSILE SYSTEM
TRAP	-	TACTICAL RECOVERY OF AIRCRAFT & PERSONNEL

U

U	-	UTILITY (AIRCRAFT)
UCMJ	-	UNIFORMED CODE OF MILITARY JUSTICE
UHF	-	ULTRA-HIGH FREQUENCY
UNREP	-	UNDERWAY REPLENISHMENT (Connected & Vertical)
URG	-	UNDERWAY REPLENISHMENT GROUP
USAFE	-	U.S. AIR FORCE IN EUROPE
USW	-	UNDERSEA WARFARE COMMANDER
USWC	-	UNDERSEA WARFARE COMMANDER
UW	-	UNCONVENTIONAL WARFARE

V

VERTREP	-	VERTICAL REPLENISHMENT
VLS	-	VERTICAL LAUNCH SYSTEM (MISSILES)
VSTOL	-	VERTICAL/SHORT TAKEOFF AND LANDING

W

W	-	WEATHER (AIRCRAFT)
WAGB	-	POLAR ICEBREAKER (SHIP)
WHEC	-	HIGH ENDURANCE CUTTER (SHIP)
WLB	-	BUOY TENDER (SHIP)
WMEC	-	MEDIUM ENDURANCE CUTTER (SHIP)
WOC	-	WING OPERATIONS CENTER
WPB	-	PATROL BOAT

X

X	-	EXPERIMENTAL (AIRCRAFT)
XO	-	EXECUTIVE OFFICER

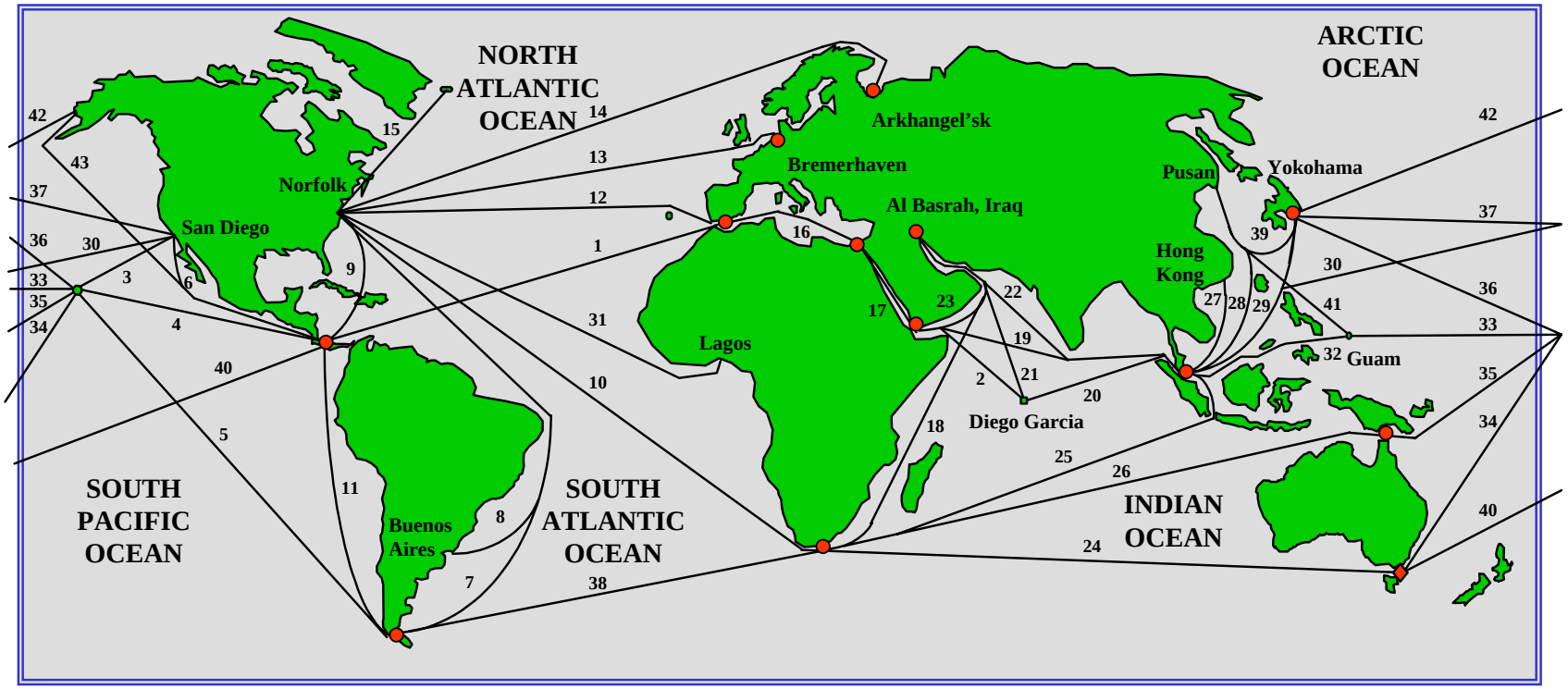
Y

YA - SUPERSONIC (AIRCRAFT)

APPENDIX E

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

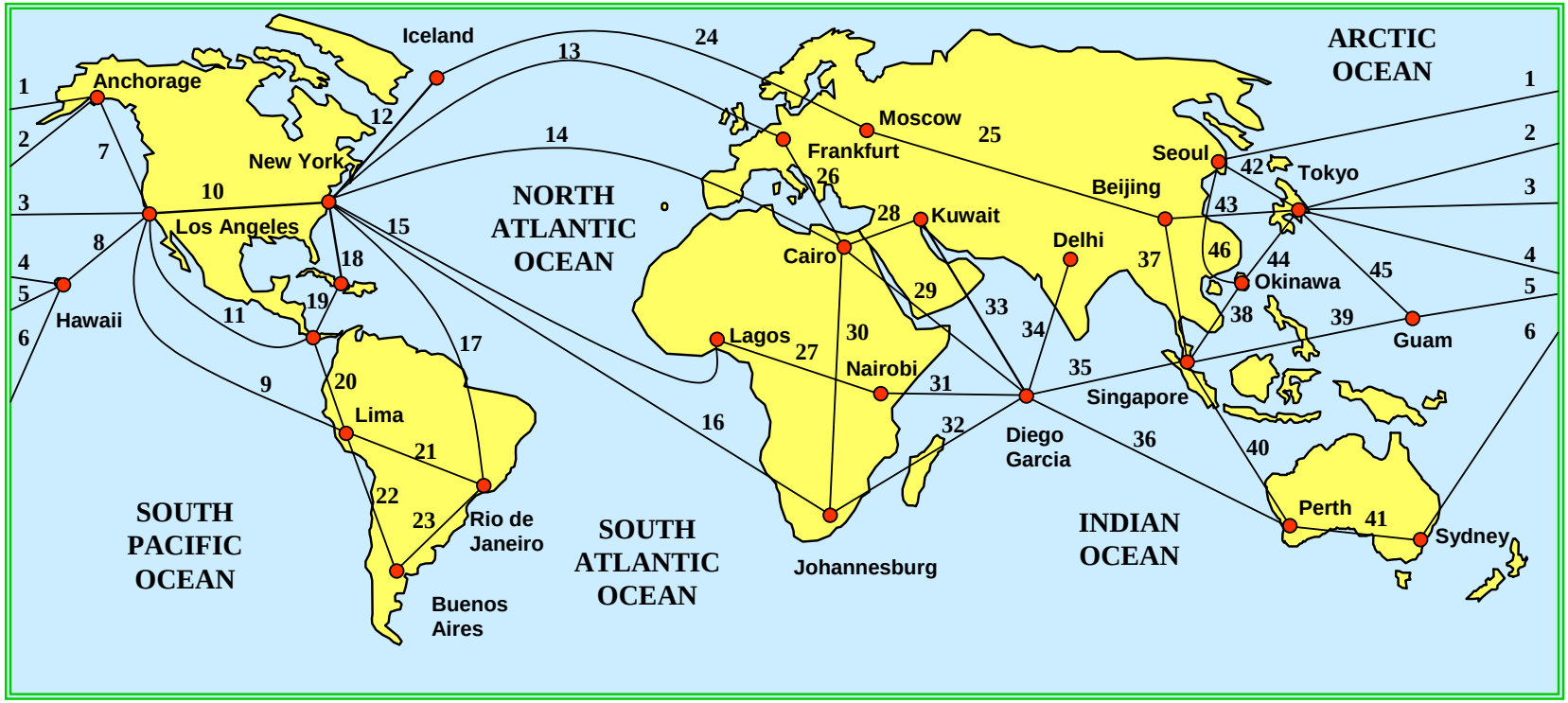


Route	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41*	42	43
NM	1967	5530	5696	6854	1454	2502	2889	7736	4941	2585	3318	4792	4191	3397	4932	4362	665	7770	1740	2696	5840
18 KTS [1]	4.6	12.8	13.2	15.9	3.4	5.8	6.7	17.9	11.4	6.0	7.7	11.1	9.7	7.9	11.4	10.1	1.5	18.0	4.0	6.2	13.5
25 KTS [2]	3.3	9.2	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

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