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DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

#562

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

As is the case in any military operation, many people contributed to the research, design and production of this first-of-a-kind reference. Its publication marks one of the few times when action officers can hold in their hands a concrete product of their hard work.

Our thanks to these officers, NCOs and civilians of the Army, Navy, Air Force, Marine Corps and Coast Guard who worked directly on the Fact File or contributed information and photos to make it happen. The credit is theirs; any errors are mine.

This is a continuing project. We expect to update the Fact File regularly, and look forward to your suggestions, corrections and recommendations for other items to be included. Please forward your comments in writing to the Fact File, OSD(PA)-DPL, The Pentagon, Washington DC 20301.

John Means
Fact File Editor
July 1, 1993

PREFACE

The "Voice of the Pentagon," whether it comes from the Secretary of Defense's assistant for Public Affairs or a duty officer on the weekend, must have a myriad of facts behind it.

The people authorized to speak for the nation's armed forces do not have heads crammed full of facts like so many filing cabinets. Smart people the world over don't know everything; they just know where and how to find out everything.

The Pentagon's chief spokesman is briefed extensively before appearing in front of the media at news conferences. Public affairs officers, guided by the news of the day, try to anticipate what will be asked. How many F-14 Tomcats are there aboard the USS America? How many people? What's the cargo capacity of a Lockheed Hercules? The range of an M-16 rifle?

In the months after the Persian Gulf War, public affairs debriefings and after-action reports pointed out the tremendous amount of time and energy spent educating the hundreds of reporters covering the war, on scene and at the Pentagon—many of whom had no experience in or around military organizations. The recommendation was made for a "Military 101" textbook, a ready reference on organization, operations and hardware.

Thus was born the idea for an inter-service, DoD-wide Fact File. And from its inception, it has carried with it one primary caveat: Write it in English, not in Pentagonese. It's not a launcher, rifle cartridge, 7.62 mm; it's a rifle. Call it a compass, not a direction-finding module. And if someone insists on being called AdcomphibsPac, the Fact File should explain to those not gifted in garblespeak that he's talking about the administrative office of communication services for amphibious forces in the Pacific.

The hardware portion of the Fact File is organized by items. Some of these may carry an explanation of how various services may use a particular weapons system common to more than one of them, but one does not have to know which service uses that weapon or vehicle to find it in the Fact File. Look for a bomber under Aircraft, a cannon under Artillery.

In the history of military hardware, today's alphabet soup is a fairly recent innovation. Ships went by their names well past the days of sail, and the first U.S. aircraft to bear a number was the Curtis JN-3 "Jenny" after World War I. In the years between the world wars, as

modern aviation began its emergence, some anonymous nomenclaturist came up with a letter designation that still prevails today: A for attack aircraft, B for bombers, C for cargo, P for pursuit ships and T for trainers. P for pursuits was changed in the late 1940s to F for fighters, and the Air Force system has since evolved somewhat to include letter combinations: AC for gunships, KC for tankers, UH for utility helicopters, for instance.

The Navy uses an arbitrary two- and three-letter system for prow numbers: BB for battleship, DD for destroyers, CV for aircraft carriers. A third or even fourth letter may be added before the number: the USS Nimitz, for instance, is CVN 68, the N standing for nuclear propulsion; SSBN 734 is the USS Tennessee, a nuclear ballistic submarine.

Weapon designation is less easily traced. M or Mk before a model number is thought to come from mark or proofmark, symbols die-stamped onto gun barrels ever since smiths and bellmakers first became gunsmiths. But why the M-9 Beretta pistol postdates the M-1911 Colt, or why the Garand rifle was called the M-1 when the M-1903 Springfield predated it by almost four decades, are research questions for someone with many years to spend pursuing the arcane.

Cost figures in this file deserve some explanation. Whenever possible, the yardstick is how much it would cost to buy another one, in today's dollars, to replace one lost in combat.

That obviously would not work for some items, such as older Navy ships. In some cases, congressional appropriations figures were relied on, and in many cases the figures were simply not available. Occasionally, if all else failed, a local gunshop might get a phone call and be asked, "What's a good condition Colt .45 worth these days?"

As per a congressional mandate for all government publications, measurements are given in both U.S. and metric figures whenever possible. One exception to this is in aircraft altitudes, which are expressed in feet by air controllers throughout the world.

The DoD Fact File was designed and edited for reporters, and to assist military public affairs offices in giving maximum access and information to the civilian media. Updates will be made regularly.

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FACTOFILE

CHAPTER 1

Organizations

DEPARTMENT OF DEFENSE

DESCRIPTION:
The federal agency charged with the constitutional mandate to "provide for the common defense."

BACKGROUND:
The Department of Defense (DoD), is the successor agency to the War and Navy Departments. It was established as an executive department of the government by the National Security Act Amendments of 1949 with the Secretary of Defense as its head. Since that time, through many legislative and administrative changes, the Department has evolved into the organizational structure under which it currently operates. The Department's functions are to:

- Support and defend the Constitution of the United States against all enemies, foreign and domestic.
- Ensure, by timely and effective military action, the security of the United States, its possessions, and areas vital to its interests.
- Uphold and advance the national policies and interests of the United States.

THE SECRETARY OF DEFENSE:
Under the President, who is the Commander--in-Chief of the nation's armed forces, the Secretary of Defense exercises authority, direction and control over the Department. The Secretary

- sits as a member of the President's Cabinet;
- sits as a member of the National Security Council;
- serves as the principal adviser to the President on defense matters;
- manages the largest department in the federal government; and
- commands all U.S. military forces throughout the world.

THE JOINT CHIEFS:
The Department of Defense, under the Office of the Secretary of Defense includes the Military Departments and the military services within those Departments; the Chairman of the Joint Chiefs of Staff and the Joint Staff; Unified and Specified Combatant Commands; the DoD Inspector General; Defense agencies and field activities; and other activities as may be established or designated by law, or by the President or the Secretary of Defense. The Office of the Secretary of Defense consist of the Secretary's immediate staff and includes the immediate offices of the Secretary and Deputy Secretary of Defense, undersecretaries and assistant secretaries as designated by the Secretary.

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The military departments are the Departments of the Army, Navy, and Air Force (the Marine Corps is a part of the Department of the Navy). Each military department is separately organized under its own Secretary and functions under the authority, direction, and control of the Secretary of Defense. The Secretary of a military department is responsible to the Secretary of Defense for the operation and efficiency of that department.

The Chairman of the Joint Chiefs of Staff; the Vice Chairman; the Chief of Staff, U.S. Army; the Chief of Naval Operations; the Chief of Staff, U.S. Air Force; and the Commandant of the Marine Corps, make up the Joint Chiefs, the immediate military staff of the Secretary of Defense. The Chairman of the Joint Chiefs of Staff is the principal military adviser to the President, the National Security Council, and the Secretary of Defense. The Chiefs of the services are the senior military officers of their respective services, responsible for keeping the secretaries of the military departments fully informed on matters considered or acted upon by the Joint Chiefs of Staff. They serve as military advisers to the President, the National Security Council and the Secretary of Defense.

The Vice Chairman performs such duties as may be prescribed by the Chairman with the approval of the Secretary of Defense,and acts as Chairman in the absence or disability of the Chairman.

UNIFIED, SPECIFIED COMMANDS:
The Commanders of the Unified and Specified Combatant Commands are responsible to the President and the Secretary of Defense for accomplishing the military missions assigned to them. The operational chain of command runs from the President to the Secretary of Defense to the commanders of the combatant commands. The Chairman of the Joint Chiefs of Staff functions within the chain of command by transmitting to the commanders the orders of the President or the Secretary of Defense.

Unified Combatant Commands are composed of assigned components of two or more services and include Atlantic Command, Central Command, European Command, Pacific Command, Southern Command, Space Command, Special Operations Command, Strategic Command and Transportation Command.

Specified Combatant Commands are composed of forces from one service, but may include units and have representation from other services. Forces Command is the only Specified Combatant Command.

DoD AGENCIES
The Defense Agencies perform selected support and service functions. Defense agencies that are assigned wartime support missions are designated as Combat Support Agencies. There are 16 Defense Agencies within the Department:

Central Imagery Office: Defense Advanced Research Projects Agency; Defense Commissary Agency; Defense Contract Audit Agency; Defense Finance and Accounting Service; Defense Information Systems Agency; Defense Intelligence Agency; Defense Investigative Service; Defense Legal Services Agency; Defense Logistics Agency; Defense Mapping Agency; Defense Nuclear Agency; Defense Security Assistance Agency; National Security Agency; On-Site Inspection Agency; Strategic Defense Initiative Organization and Combat Support Agency.

DoD Field Activities are authorized to perform selected support and service functions of a more limited scope than Defense Agencies. There are seven DoD Field Activities within the Department:

American Forces Information Service; Defense Medical Programs Activity; Defense Technology Security Administration; Department of Defense Dependents Schools; Office of Civilian Health and Medical Program of the Uniformed Services; Office of Economic Adjustment; and Washington Headquarters Services.

POINT OF CONTACT:
Office of the Secretary of Defense/Public Affairs, 2E800 The Pentagon, Washington, D.C. 20301-1400; 703/697-9312, 697-5131

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

JOINT CHIEFS OF STAFF

DESCRIPTION:
The Joint Chiefs of Staff (JCS) consists of the Chairman, the Vice Chairman, the Chief of Staff of the Army, the Chief of Naval Operations, the Chief of Staff of the Air Force and the Commandant of the Marine Corps. This body is headed by the Chairman, who since 1956 has set the agenda and presided over JCS meetings.

BACKGROUND:
In World War II, the Joint Chiefs of Staff commanded theater and area commanders. But the original National Security Act of 1947 saw the Joint Chiefs of Staff as planners and advisers, not as commanders. In spite of this, the 1948 Key West Agreement that was appended to the governing Department of Defense directive allowed members of the Joint Chiefs of Staff to serve as executive agents for unified commands, a responsibility that allowed them to originate direct communication with the combat commands. Congress rescinded this authority in 1953.

Today, the Joint Chiefs of Staff do not have executive authority to command combat forces. The Chairman of the Joint Chiefs of Staff alone functions within the chain of command by transmitting communications to the commanders of the combat commands from the President and Secretary of Defense. The Chairman does not exercise military command over any combat forces.

As the head of the Joint Chiefs of Staff and the senior ranking member of the Armed Forces, the Chairman is the principal military adviser to the President. He may seek the advice of and consult with the other JCS members and combat commanders. Then, when he presents his advice, he is representing the range of advice and opinions he has received along with any individual comments of the other JCS members. All JCS members are, by law, military advisers and may respond to a request or voluntarily submit advice or opinions to the President, the National Security Council or The Secretary of Defense.

The Vice Chairman, the second ranking member of the armed forces, replaces the Chairman in case of absence or disability.

The Chairman oversees strategic direction and planning, contingency planning, requirements, programs, budget, doctrine, training, education and other matters.

The military chiefs are responsible to the secretaries of the military departments for management of the services. The service chiefs serve for four years.

By custom, the vice chief of the services act for their chiefs in most matters having to do with day-to-day operation of the services. The duties of the service chiefs as members of the Joint Chiefs of Staff take precedence over all their other duties.

There are two recognized groups that greatly assist the Joint Chiefs of Staff in the execution of their role. Each service chief appoints an operations deputy who works

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with the director of the Joint Staff to form the Operations Deputies of the JCS.

The second body, known as the Deputy Operations Deputies, JCS, is composed of a chairman, who is the vice director of the Joint Staff, and a flag or general officer appointed by each service chief. Issues come before this group to be settled at their level or forwarded to the senior body. Except for the director and vice director of the Joint Staff, the members of these two groups are not considered part of the Joint Staff.

The term "Joint Staff" is not specifically defined, but the size is restricted to 1,627 military and civilian personnel. The staff is composed of approximately even numbers of officers from the Army, Navy and Air Force. In practice, the Marines make up about 20 percent of the number allocated to the Navy.

The Joint Staff assists the Chairman with unified strategic direction of the combatant forces; unified operation of the combatant commands; and integration into an efficient team of land, naval, and air forces.

POINT OF CONTACT:
Office of the Chairman, JCS, Special Assistant for Public Affairs, 2E857 The Pentagon, Washington. D.C. 20301; 703-697-4272

U.S. ATLANTIC COMMAND (LANTCOM)

OVERVIEW:
The United States Atlantic Command is one of nine United States Unified Commands. Its mission is to deter military attacks against the United States and to protect the vital interests of the nation. This includes support for U.S. allies, access to resources and markets, and access to critical areas. Offensively oriented sea control is the major mission if hostilities start.

The U.S. Atlantic Command was established Dec. 1, 1947. Its 45 million square-mile area of responsibility includes the Atlantic Ocean from the North Pole to the South Pole, including the Caribbean Sea; the Pacific Ocean West of Central and South America extending to 92 degrees west longitude (intersecting the Galapagos Islands, about 700 miles west of Ecuador); the Norwegian, Greenland, and Barents seas; and the waters around the western coast of Africa extending to the Cape of Good Hope. The Pacific Ocean area (off the coast of Central and South America) is in the Atlantic Command area to allow one U.S. national commander to work with all of the Central and South American navies.

The commander in chief, U.S. Atlantic Command, maintains his headquarters in Norfolk, Va.

The four service component commands of the Atlantic Command (Army, Navy, Marine Corps, and Coast Guard) provide ground, maritime and air forces for exercises, national emergencies and military operations as directed by the president or secretary of defense through the Joint Chiefs of Staff. The only permanently assigned forces are those of the U.S. Atlantic Fleet at Norfolk. The other components are: U.S. Army Forces Atlantic (Forces Command, Fort McPherson, Ga.), U.S. Air Forces Atlantic (Air Combat Command, Langley Air Force Base, Va.) and the U.S. Marine Corps Forces Atlantic (Fleet Marine Forces Atlantic, Norfolk). These components actively develop and coordinate joint plans with the Atlantic Command staff.

Subordinate commands of the U.S. Atlantic Command are U.S. Forces Azores (Lajes Field, Azores); Iceland Defense Force (Keflavik, Iceland); and Special Operations Command, Atlantic (Norfolk).

There are three special commands: Joint Task Force 4, Joint Task Force 120 and Joint Task Force 140. JTF 4 conducts detection and monitoring missions in support of drug suppression efforts.

POINT OF CONTACT:
CINCLANT Public Affairs, Norfolk VA 23511-5100, (804)445-1511

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

U.S. CENTRAL COMMAND (CENTCOM)

OVERVIEW:
The U.S. Central Command (USCENTCOM) at MacDill Air Force Base, Fla., is the administrative headquarters for U.S. military affairs in 18 countries of the Middle East, Southwest Asia and Northeast Africa, including the Persian Gulf. The Command was established by President Reagan in January 1983 as the evolutionary successor to the Rapid Deployment Joint Task Force.

CENTCOM supports U.S. and free-world interests by assuring access to Mideast oil resources, helping friendly regional states maintain their own security and collective defense, maintaining an effective and visible U.S. military presence in the region, deterring threats by hostile regional states and projecting U.S. military force into the region if necessary.

Since its inception, CENTCOM has matured into a truly unified joint service command. Day-to-day, there are 675 people from all services assigned to CENTCOM headquarters. If needed, the command draws on personnel from the operating forces of each military service. CENTCOM component commands are the U.S. Army Forces Central Command, U.S. Central Command Air Forces, U.S. Naval Forces Central Command, U.S. Marine Corps Forces Central Command and the U.S. Special Operations Command Central.

CENTCOM's area of responsibility includes 18 countries of diverse political, economic, cultural and geographic make-up in Europe, Asia and Africa. Three of the world's major religions have their roots there: Christianity, Judaism and Islam. The area is larger than the continental United States, stretching some 3,100 miles east to west and 3,400 miles north to south. The topography includes mountain ranges with elevations as high as 24,000 feet, desert areas below sea level and temperatures ranging from freezing to above 130 degrees. The 18 countries within the area are: Afghanistan, Bahrain, Djibouti, Egypt, Ethiopia, Jordan, Iran, Iraq, Kenya, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, United Arab Emirates and the Republic of Yemen.

The region contains more than 70 percent of the world's oil reserves. Its security is vital to the economies of the United States and its allies. It also sits astride the major maritime trade routes linking the Middle East, Europe, South and East Asia and the Western Hemisphere. Ships plying these routes, sailing through maritime choke points such as the Straits of Hormuz and the Suez Canal, carry the petroleum products that fuel the world's economies.

POINT OF CONTACT:
USCENTCOM, Public Affairs, MacDill Air Force Base, FL 33608-7001; (813) 830-5895

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

EUROPEAN COMMAND (EUCOM)

OVERVIEW:
For more than 40 years, the United States European Command (EUCOM) has exercised joint operational command of the U.S. forces in the European theater. Its area of responsibility for U.S. operations includes more than 13 million square miles and 76 countries. This territory extends from the North Cape of Norway, through the waters of the Baltic and Mediterranean seas, including most of Europe and parts of the Middle East, to the Cape of Good Hope in South Africa.

The Commander in Chief of EUCOM commands three U.S. components: U.S. Army Europe, U.S. Navy Europe and U.S. Air Forces in Europe. CINCEUR is also NATO's Supreme Allied Commander Europe, with headquarters in Mons, Belgium.

BACKGROUND:
Headquarters EUCOM was established Aug. 1, 1952, to support U.S. treaty obligations to NATO. It was in Frankfurt and Camp des Loges, France, before moving to Stuttgart, Germany in March 1967.

MISSION:
EUCOM's mission is to support and achieve U.S. interests and objectives throughout its area of responsibility and to provide combat-ready land, sea and air forces to support U.S. commitments to NATO. The command performs a variety of other functions including planning for and conducting contingency operations such as noncombatant evacuations and humanitarian relief operations, providing combat-ready forces to other U.S. unified commands, conducting intelligence activities and providing security assistance.

RECENT OPERATIONS:
The utility and flexibility of U.S. forward deployed forces have been vividly illustrated in recent years during many contingency operations. During Desert Shield and Desert Storm in 1990-91, the command moved 90,000 troops, 400 aircraft and 33,000 pieces of equipment from Central Europe to the Persian Gulf region to support the U.S. Central Command. EUCOM's joint task force flew 6,000 sorties from Turkey during Desert Storm.

Units of the Mediterranean Amphibious Ready Group deployed to war-torn Liberia in 1990 for the evacuation of 2,400 civilians, including 266 U.S. citizens. In April 1991, EUCOM developed a combined task force with forces from 13 nations to aid 450,000 Kurdish refugees in northern Iraq after the Gulf War. That effort utilized 12,000 U.S. service members and delivered more than 25 million pounds of supplies. In the winter of 1991 and into 1992, under the direction of EUCOM, 65 aircraft flights were sent into 24 cities across 11 republics of the former

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Soviet Union with critically needed food and medical supplies. More recently, European Command forces evacuated U.S. and European civilians from troubled areas in Africa such as Zaire and Sierra Leone. EUCOM initiated an airlift in July 1991 in support of humanitarian relief efforts for the United Nations in former Yugoslavia. In late 1992, EUCOM medical, logistics and other personnel provided additional support to United Nations forces in the Bosnia-Serbia area.

OUTLOOK:
The security of the United States remains linked to that of Europe, and U.S. participation in NATO is crucial to future deterrence. Even though EUCOM's forces will be reduced by more than half by 1995, what remains will be a balanced and capable land, naval and air force of 150,000 military personnel. The land force will form the foundation of a U.S.-led multinational corps and also provide a U.S. division committed to a Germany-led multinational corps and a forward element of the Allied Rapid Reaction Force—a total of 92,000 Army personnel. The Air Force structure of 44,000 personnel will consist of between three and four air combat wings and associated support. Naval forces (approximately 13,000 personnel ashore) will retain their strong and versatile carrier battle group and amphibious force to provide a full range of naval surface, subsurface and air power.

Europe is undergoing dramatic political change following the dissolution of the Warsaw Pact and the Soviet Union. The presence of U.S. forces has provided a stabilizing influence since the end of World War II.

POINT OF CONTACT:
US European Command Public Affairs, 011-49-711-680-8486

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

U.S. FORCES COMMAND (FORSCOM)

OVERVIEW:

The United States Forces Command (FORSCOM), headquartered at Fort McPherson, Ga., is responsible for :

- providing combat-ready ground forces to reinforce U.S. forces already deployed;
- executing no-notice contingency missions throughout the world;
- planning for, and executing if required, the land defense of the continental United States (including military support of civil defense and protection of key assets);
- providing Department of Defense assets to support federal, state and local law enforcers in the fight against illegal drugs, and to provide natural disaster relief; and
- defending the United States and Canada.

As the Army's largest major command, FORSCOM supervises the training of nearly one million active, Army National Guard and Army Reserve soldiers to provide an effective strategic force capable of responding rapidly to support national security.

FORSCOM functions as the Army component of the United States Atlantic Command, which is responsible for command and control of assigned forces in the Atlantic/Caribbean area.

The command consists of active duty Army units, the Army National Guard and the U.S. Army Reserve. FORSCOM has 18 major installations and 17 sub-installations.

Active Army combat forces assigned to Forces Command are: "I" Corps at Fort Lewis, Wash.; III Corps at Fort Hood, Texas; and XVII Airborne Corps at Fort Bragg, N.C. They include nine divisions, an armored cavalry regiment and four separate brigades.

The active duty component of FORSCOM has more than 232,000 soldiers. FORSCOM also commands Third Army, the Army component of the U.S. Central Command responsible for Southwest Asia, the Persian Gulf and the Horn of Africa. Headquarters, Third Army, is at Fort McPherson.

The U.S. Army Reserve Command, a major subordinate command of FORSCOM, is responsible for all U.S. Army Reserve units in the continental United States except those assigned to Special Operations. Included are 12 training divisions, three infantry brigades and three separate training brigades, more than 304,000 soldiers.

Under FORSCOM are four Armies that provide support to Reserve component units and execute a wide range of FORSCOM

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missions within their geographic areas of responsibility. They are:

First U.S. Army, Fort Meade, Md.; Second U.S. Army, Fort Gillem, Ga.; Fifth U.S. Army, Fort Sam Houston, Texas; and Sixth U.S. Army at the Presidio, San Francisco.

The Army National Guard provides FORSCOM with 10 National Guard combat divisions, two armored cavalry regiments and 20 combat brigades. The current Army National Guard strength (excepting Alaska, Hawaii and Guam units, which are not assigned to FORSCOM) is more than 430,000 soldiers. Federalizing the Army National Guard would bring the total strength of FORSCOM to almost one million soldiers, nearly two-thirds of the Army's total combat ground forces.

POINT OF CONTACT:
Forces Command Public Affairs, Fort McPherson GA 30330-6000. (404)669-7301

U.S. PACIFIC COMMAND (PACOM)

NARRATIVE:
The United States Pacific Command (PACOM) is a unified command with responsibility for the area extending from the west coast of the United States mainland to the east coast of Africa, and from the Arctic Ocean to Antarctica, including Alaska and Hawaii. Geographically, PACOM is the largest of the U.S. unified commands. This area equals about 50 percent of the earth's surface or more than 100 million square miles, including 45 countries, eight U.S. territories and 10 territories of other countries.

The role of PACOM is to foster peace, democracy and freedom while promoting U.S. interests in the area. The command serves to deter conflict through combat-ready U.S. and allied military forces in place or readily available, or to engage in combat if ordered by the president.

The commander in chief of PACOM (CINCPAC) commands a total force of about 383,000 military personnel drawn from all the military services—about 20 percent of all active duty U.S. military forces. The component commands are:

• U.S. Army Pacific, including 25th Infantry Division (Light); U.S. Army Hawaii; U.S. Army Japan/IX Corps (Japan); U.S. Army Chemical Activity Pacific (Johnston Island); 6th Infantry Division (Light)/U.S. Army Garrison Alaska; and IX Corps (Reinforcement)/9th Army Reserve Command (Hawaii).

• The U.S. Navy's Pacific Fleet, which in-includes Third Fleet, Navy Seventh Fleet and Fleet Marine Force, Pacific.

Pacific Air Forces, which include 5th Air Force (Japan), 7th Air Force (Korea), 11th Air Force (Alaska) and 13th Air Force (Guam).

The subordinate unified commands include: U.S. Forces Japan at Yokota Air Base, U.S. Forces Korea in Seoul, Special Operations Command Pacific at Camp H.M. Smith, Hawaii, and the Alaskan Command at Elmendorf Air Force Base. Also included are Joint Task Force Five in Alameda, Calif., and Joint Task Force Full Accounting at Camp H.M. Smith.

CINCPAC reports through the chairman of the Joint Chiefs of Staff to the secretary of Defense and ultimately to the president.

POINT OF CONTACT:
PACOM Public Affairs, Camp H.M. Smith HI 86961-5025, (808)477-1341

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

SPECIAL OPERATIONS COMMAND (SOCOM)

OVERVIEW:
The United States Special Operations Command (SOCOM) is one of nine unified combat commands. It was activated in April 1987 to provide command, control and training for all special operations forces (SOF) in the United States. The command has approximately 47,000 active, National Guard and reserve forces.

SOCOM headquarters is at MacDill Air Force Base, Fla. Its components include the U.S. Army Special Operations Command at Fort Bragg, N.C.; the Air Force Special Operations Command, Hurlburt Field, Fla; the Naval Special Warfare Command, Coronado, Calif., and the Joint Special Operations Command at Fort Bragg. The John F. Kennedy Special Warfare Center and School, the U.S. Air Force Special Operations School, and the Naval Special Warfare Center are also assigned to the command.

Special operations are those conducted against strategic and tactical targets in pursuit of national military, political, economic or psychological objectives, by personnel specially trained, equipped, and organized to do so.

SOCOM's primary mission is to provide combat-ready forces for rapid reinforcement of the other unified commands worldwide. To carry out this mission, SOCOM:

- Develops doctrine, tactics, techniques and procedures for all special operations;
- Conducts specialized courses of instruction for all SOF;
- Trains assigned forces and ensures interoperability of equipment and forces;
- Monitors the preparedness of its forces assigned to other unified commands; and
- Develops and acquires unique SOF equipment, material, supplies and services.

In short, U.S. Special Operations Command prepares assigned forces to carry out special operations, psychological operations and civil affairs missions as required. Also, the command plans for and conducts special operations if directed by the president or the secretary of Defense. These operations may be conducted in peacetime or during hostilities. SOF have been employed in more than 95 percent of the military contingencies accomplished since the Vietnam War.

During Operation Desert Storm, SOF played a unique and important role, operating on land, on and under the sea, and in the air as part of the combined arms team. These teams remained behind enemy lines and conducted special reconnaissance, combat search and rescue, and direct action missions.

Special operations forces contributed significantly to coalition warfare and the reconstruction of Kuwait's military and public infrastructure.

Today, some 20,000 SOCOM personnel are employed in more than 20 countries around the world providing training, advice and "nation-building" assistance.

POINT OF CONTACT:
SOCOM Public Affairs, (813) 830-2011

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

U.S. SOUTHERN COMMAND (SOUTHCOM)

OVERVIEW:
The United States Southern Command (SOUTHCOM) is the unified command responsible for all U.S. military activities in South America and Central America. Its area of responsibility encompasses 19 countries, represents about one-sixth of the world's land mass and covers about seven million square miles, stretching 6,000 miles from Mexico's southern border to Cape Horn. The command supports U.S. interests in the southern theater by establishing and implementing plans, programs and policies that contribute to the defense of the U.S. and its allies.

The command's theater strategic objectives are to:
- strengthen democratic institutions;
- assist host nations in eliminating threats to their security;
- support continued economic and social progress;
- assist host nations and U.S. agencies in attacking drug production and agencies;
- with the Government of Panama, ensure an open and neutral Panama Canal; and
- enhance military professionalism.

SOUTHCOM's resources are primarily focused on its current key mission areas which include drug suppression, counterinsurgency, nation assistance, military professionalism, and treaty implementation programs. The commander in chief for the Southern Command has established the following priorities:
- supporting drug suppression efforts;
- sustaining the negotiated peace settlement in El Salvador;
- promoting liberty in Panama; and
- enhancing professionalism in the military forces of Central and South America.

The command carries out its missions and objectives through several means: security assistance programs (for training and equipment, including mobile training teams), combined training exercises with host nation forces, deployments for training, planning and intelligence exchanges, humanitarian assistance and civic action, personal exchange programs, military dialogue and other politico-military methods. The command works closely with the U.S. ambassadors in the region and their staffs.

The Southern Command carries out its missions and objectives through its joint-service headquarters staff (390 military and 120 civilian employees) at Quarry Heights, Panama, and its component commands. SOUTHCOM consists of a small force that is based in Panama, composed of combat and support elements of all four military services. Primary elements are an Army light infantry brigade, an Army aviation brigade with helicopters and fixed-wing air-

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craft, a Navy special warfare unit, an Army landing craft mechanized boat company, Air Force medium airlift and tactical aircraft on rotation duty, military/ security police, and Army combat engineer, medical, and signal battalions. The command's assigned forces number approximately 10,000 U.S. military personnel and 7,500 civilians, three-fourths of them Panamanian.

SOUTHCOM's components are:

- U.S. Army South, a major Army command headquartered at Fort Clayton, Panama;
- Commander in Chief Atlantic Fleet, at Norfolk, Va., and the fleet's Detachment South at Fort Amador, Panama;
- 12th Air Force, at Bergstrom Air Force Base, Texas, and under it, 24th Wing at Howard Air Force Base, Panama;
- Special Operations Command South, a sub-unified command at Albrook Air Force Station, Panama, that controls all special operations forces within SOUTHCOM's area;
- Joint Task Force Bravo, a temporary organization at the Honduran Air Force's Sono Cano Air Base near Comayagua. The force is manned by about 1,200 U.S. military personnel from U.S. units on temporary duty, and supports U.S. exercises and deployments in Honduras; and
- Security Assistance Organizations, which serve as the U.S. military representatives to the U.S. embassies. There are 17 of these groups (100 military and 100 civilians total personnel) throughout the region. SOUTHCOM also has responsibility for security assistance in Mexico, even though it is outside of the command's area of responsibility.

SOUTHCOM makes extensive use of Army, Air Force and Navy reserve components deployed on temporary duty throughout the region primarily for civic actions and training exercises and deployments.

POINT OF CONTACT:
SOUTHCOM Public Affairs, Quarry Heights, Panama, APO Miami FL 34003, Tel. #011-507-82-4255

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

U.S. SPACE COMMAND (SPACECOM)

NARRATIVE:
More than three decades ago the United States military launched Explorer I, the nation's first satellite. Its launch date was Jan. 31, 1958, less than four months after the Soviet Union's first Sputnik went into space.

The commitment by President Eisenhower to put a high priority on "space objectives relating to defense" and by President Kennedy to put a man on the Moon expanded and accelerated the space program.

Throughout the 1960s and '70s, the U.S. Army, Navy and Air Force rapidly advanced and expanded space technology, creating the need for a focal point for the Department of Defense military space program.

On Sept. 23, 1985, the United States Space Command was activated to consolidate all military space efforts under the direction of one commander in chief.

SPACECOM is a unified command of the Department of Defense, headquartered at Peterson Air Force Base, Colorado Springs, Colo. The command is staffed by personnel of all services, and has three components: the Army, Naval, and Air Force Space Commands.

MISSION: SPACECOM provides joint employment of military forces and operational support to other unified, combatant commands. The command performs these functions through four primary missions: space support, force enhancement, space control and force application.

SPACE SUPPORT: Space support operations include satellite command and control operations. Space support is provided by Army, Naval, and Air Force Space Commands. The U.S. has two primary launch sites, at Kennedy Space Center, Fla., and Vandenberg AFB, Calif.

Air Force Space Command operates the launch wings at each base and is engaged in a major program to restore and modernize launch facilities. AFSPACECOM launches warning, navigation, and communications satellites from Cape Canaveral into low inclination or synchronous orbits. From Vandenberg AFB, AFSPACECOM launches meteorological and other satellites into polar orbits. Once a satellite is in orbit, it is controlled by a worldwide network of 28 ground stations. Scheduling and control of these stations is done by AFSPACECOM at Falcon AFB, Colo., and Onizuka AFB, Calif.

Naval Space Command controls the TRANSIT maritime navigation system and Fleet Satellite Communications Satellites. Army Space Command operates the Defense Satellite Communications Systems payloads supporting worldwide combat needs.

FORCE ENHANCEMENT:
Space systems provide direct support to land, sea, and air forces. To meet this need, SPACECOM has control of a fleet of satel-

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lites that provide ballistic missile warning, communications, weather, and navigation and positioning support. Additionally, U.S. forces employ commercial communications satellites, civil weather satellites and civil multispectral imagery satellites.

SPACECOM can provide warning dataon ballistic missile launches, satellite communications support, weather and navigational data.

During Operations Desert Shield and Desert Storm, space forces met the needs of U.S. land, sea, and air forces and frequently provided capabilities and support not envisioned when the systems were on the acquisition drawing boards. For example, the alerting system that warned of SCUD attacks was based on warning provided by DoD satellites originally designed to warn of intercontinental ballistic missile attack.

Ground forces initially deployed to Desert Shield had access to the United States' most effective means of navigation, the Global Positioning System. Deployed forces received weather data broadcast by satellites and used maps produced from spaceborne platforms. More than 90 percent of the communication into and out of the Persian Gulf theater went through communication satellites.

SPACE CONTROL:
Space Control is similar to sea control. It includes surveillance of objects in space, ensuring the conduct of space operations without interference, and the ability to deny an adversary the use of space-based support.

Space Surveillance: SPACECOM's Space Surveillance Network employs ground-based radars and optical sensors to detect, track, catalog and identify man-made objects orbiting earth. More than 7,000 objects are tracked daily to provide DoD, NASA and worldwide users information on satellites.

Operating Without Interference: SPACECOM is responsible for monitoring space activities and ensuring that United States space operations can be conducted without interference. Upon detection and verification of any potentially hostile act, SPACECOM can warn the affected space system operator, allowing for timely accommodation.

Denying the Adversary: The United States currently has no operational weapon system to destroy an aggressor's satellites. However, research and development into anti-satellite technology is continuing.

FORCE APPLICATION:
Force application will be performed through the planned acquisition of a ballistic missile defense system. The Missile Defense Act of 1991 directs DoD to place a priority on research and development of capabilities to provide global protection against ballistic missile strikes. This would include surface and space-based sensors to provide global, continuous surveillance and tracking of ballistic missiles of all ranges from time of launch. Surface and space-based interceptors would provide global continuous interdiction capability.

POINT OF CONTACT:
U.S. SPACECOM, PA Bldg. 1470, Peterson AFB CO 80914-5003; 719/554-6889

U.S. STRATEGIC COMMAND (STRATCOM)

OVERVIEW:
U.S. Strategic Command is the newest of the nine unified combat commands. When the command was activated on June 1, 1992, U.S. strategic forces were integrated under a single field commander for the first time.

STRATCOM serves a number of key roles involving strategic weapons. It provides the primary military voice for strategic nuclear force structure, modernization and arms control; assures the integration of strategic nuclear policies; and prepares forces for use if deterrence should fail.

STRATCOM's forces for fulfilling its deterrent mission include Minuteman III and Peacekeeper intercontinental ballistic missiles; C-4 and D-5 sea-launched ballistic missiles based on submarines; B-52H and B-1B bombers and other aircraft for battle management and electronic warfare.

To keep these forces and their associated personnel organized, trained, and equipped, STRATCOM relies on its service component commands: Air Combat Command, the Atlantic Fleet and the Pacific Fleet. Under each of these service components are task forces with specific operational responsibilities. Execution of these forces can only be authorized by the President and the Secretary of Defense.

One of the command's primary functions is developing and maintaining the National Strategic Target List and National Strategic Response Plans, and the refinement, clarification and dissemination of National Command Authority policy decisions as they relate to nuclear weapons.

STRATCOM headquarters is at Offutt Air Force Base, Neb. In addition to a traditionally organized joint staff it includes the Combat Operations Staff, the Joint Coordination Center (at Fort Ritchie, Md.), the Strategic Joint Intelligence Center and the Strategic Communications Computer Center.

The Combat Operations Staff provides continuous manning of STRATCOM's underground command center and airborne command posts.

The Strategic Joint Intelligence Center collects and assesses vast quantities of raw intelligence data for STRATCOM, other unified commanders, the Department of Defense and other national agencies.

The Joint Coordination Center is responsible for disseminating peacetime strategic nuclear operational data to the Joint Staff, the National Military Command Center and other unified commanders. In wartime it serves as a nuclear data agency.

The computer systems essential to STRATCOM's function are provided by the Strategic Communications Computer Center. This includes the network required for planning and targeting of nuclear forces, intelligence systems and the vital command and control network linking STRATCOM, the Pentagon and the nation's nuclear forces.

POINT OF CONTACT:
USSTRATCOM Public Affairs, Offutt AFB, Neb. 68113-6020, (402) 294-4130

U.S. TRANSPORTATION COMMAND (TRANSCOM)

OVERVIEW:
The United States Transportation Command (TRANSCOM) is the unified command that moves U.S. troops, equipment and supplies by land, sea or air to or from any place in the world whenever necessary. Because it sustains U.S. forces from start to finish of any military operation, the command provides the combat commanders in chief, the military services and other Department of Defense agencies with the ability to project U.S. military power rapidly.

As the designated manager of all defense transportation, TRANSCOM provides a global transportation planning and execution system supported by a communication and computer network. Its component commands are the Air Force's Air Mobility Command (AMC); the Army's Military Traffic Management Command (MTMC) and the Navy's Military Sealift Command (MSC).

The Department of Defense must be able to send military forces where needed, when needed, with the appropriate number of people and equipment. This demands a lift structure that can transport forces rapidly to distant locations, and resupply these forces for sustained operations if necessary.

To accomplish this, TRANSCOM employs three modes of transport:

• **Airlift.** AMC provides airlift for TRANSCOM. Airlift aircraft can deliver cargo and personnel anywhere in the world within hours. Another additional force available for long-range airlift in times of national emergency is the Civil Reserve Air Fleet, composed of commercial aircraft committed to support AMC worldwide.

• **Sealift.** MSC operates a fleet of government owned and chartered U.S. flag ships to transport military supplies and equipment overseas. The U.S. Maritime Administration maintains the National Defense Reserve Fleet, surplus cargo vessels placed in storage for recall in times of national mobilization. The Ready Reserve Fleet, a part of the NDRF, is a force of inactive ships maintained by the Maritime Administration to provide shipping to meet stepped-up sealift requirements in wartime. The largest source of military sealift is made up of U.S. registered commercial vessels and foreign flag ships. There are more than 500 useful vessels in this category.

• **Overland lift.** To transport troops and material expeditiously to ports of embarkation, MTMC manages the overland lift system. The extensive lift capability needed for national defense includes railroads, highways, waterways and a fleet of rail cars, trucks and barges. MTMC arranges with the commercial transportation carrier industry to provide the necessary overland lift on behalf of Department of Defense shippers. MTMC coordinates the movement of military forces to seaports, prepares the ports for ships and cargo, and supervises the loading at ports.

POINT OF CONTACT:
TRANSCOM Public Affairs, Scott Air Force Base IL, 62225-7001, (618)256-4828

THE UNITED STATES ARMY

DESCRIPTION:
The U.S. Army was organized on June 14, 1775, when the Second Continental Congress authorized the formation of an American Continental Army.

FEATURES:
The National Security Act of July 16, 1947, as amended in 1949, established a Department of the Army, along with a Department of the Navy and a Department of the Air Force, within the Department of Defense. The Department of the Army is headed by a civilian, the Secretary of the Army. His principal advisor is the Chief of Staff of the Army, a four-star general who is the Army's senior military officer. The Chief of Staff is also a member of the Joint Chiefs of Staff. The Joint Chiefs of Staff is the principal military advisory body to the Secretary of Defense and the President.

MISSION:
The missions of the Army are depicted below:

- forward presence with units forward deployed
- projection of land forces/contingency operations
- peacetime and wartime reinforcement
- evacuation/protection of U.S. citizens
- support of the nation's war on drugs
- assistance to friendly nations
- support of nation assistance and civil affairs

ORGANIZATION:
The U.S. Army is organized into nine commands, plus others that belong to unified

land, sea, and air commands. The first and the largest of the commands is U.S. Army Forces Command. It is responsible for all army forces, including reserve forces, within the territorial United States. U.S. Army Forces Command consists of three areas. The First U.S. Army Area, in eastern United States, is headquartered at Fort Meade, Md. The Fifth U.S. Army Area, headquartered at Fort Sam Houston, Tex., includes the central portion of the United States. The Sixth U.S. Army Area, headquartered at the Presidio of San Francisco, Calif., includes the western states.

The Training and Doctrine Command, headquartered at Fort Monroe, Va., is the second major command in the army. It develops, manages, and supervises the training of the active army, the Army Reserve, and the National Guard.

The Material and Development and

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Readiness Command, headquartered at Alexandria, Va., is responsible for developing and providing equipment and related services to the army and to some foreign agencies.

The other six commands are the U.S. Army Communications Command, headquartered at Fort Huachuca, Ariz.; the Intelligence and Security Command and the Health Services Command, headquartered at Fort Sam Houston, Tex.; the Criminal Investigations Command and the Military Traffic Management Command, headquartered at Washington D.C.; and the Military District of Washington. Three additional overseas-commands are separate from the Army command structure: the U.S. Army, Europe, the U.S. Army, Japan; and the Eighth U.S. Army, South Korea.

POINT OF CONTACT:
Army Public Affairs Office, The Pentagon, Washington, D.C. 20301; (703) 697-7589.

AIRLAND BATTLE

SERVICE: Army

DESCRIPTION:
AirLand Battle (ALB) is the U.S. Army's doctrine for conducting military operations.

BACKGROUND:
Since its inception in 1982, ALB has guided the Army's doctrine, training, designs, materiel requirements and leader development. It has produced the best trained, most ready Army in the nation's history.

ALB describes the Army's approach to generating and applying combat power on the battlefield. It reflects the application of classical principles of war to contemporary conditions. Its name is derived from the fact that modern war is multidimensional and that the U.S. Army must fight in conjunction with the other armed services.

AirLand Battle doctrine provides descriptive guidance for planning and conducting campaigns, operations, battles, and engagements. It serves as the foundation for professional education and training of both individuals and units. Although the doctrine emphasizes conventional operations, it reogizes that the Army must be able to fight and win even against unconventional weapons such as chemical, biological, or nuclear.

The essence of ALB is to defeat the enemy by conducting simultaneous operations over the full breadth and depth of the battlefield. Commanders must fight close, deep, and rear-area battles concurrently, all integrated as parts of one battle.

Commanders fight the close battle to destroy enemy forces in contact with the Army's main forces. The deep battle is fought against follow-on enemy forces that could reinforce the close forces if left alone. The deep battle thus delays and disrupts the enemy's battle plans and isolates the close forces. Rear-area battles are fought against enemy forces (such as enemy attack helicopters or paratroops) that are employed against the Army's units supporting the close battle.

Operation Desert Storm was an example of an ALB campaign. The ground campaign stressed the key areas:

- joint operations with other U.S. services,
- combined operations with coalition forces,
- deception,
- close, deep and rear operations,
- agility, initiative, depth, and synchronization, and
- concentration of overwhelming combat power.

Well-trained soldiers equipped with modern systems play a critical role in success. Abrams tanks and Bradley Fighting Vehicles, for example, provide the agility to outmaneuver the enemy and conduct highly effective operations in conjunction with attack helicopters, Air Force aircraft and field artillery systems. Technologically advanced target acquisition and firepower allow U.S. forces to bring overwhelming combat power to bear at great ranges, thus minimizing losses to Army units. Tactical wheeled vehicles provide flexibility and versatility and are the key elements of maneuver.

AirLand Battle works because the Army has the equipment this doctrine requires, and well-trained soldiers are masters of employing that equipment in accord with the doctrine. The synchronization of air, ground, and sea assets disrupts the enemy's plans and helps to precipitate the decisive defeat or capitulation of his forces.

This doctrine is being updated, to reflect balanced considerations of global commitments and place greater emphasis on projecting power from the United States as the Army's overseas presence shrinks. The updated version is scheduled for release in late summer 1993.

POINT OF CONTACT: Army Public Affairs, (703) 697-7589

THE PEACETIME ARMY

OVERVIEW:
The Army organizational system has three primary components: combat, production, and integrating/coordinating subsystems.

COMBAT:
Combat systems are designed to meet specific needs based on local conditions, consideration of the capabilities and objectives of our allies and the capabilities of a potential adversary that is usually referred to as the "threat." For example, the Army organized U.S. Army Europe (USAREUR) to develop contingencies to meet European requirements. Similarly, we have organized combat forces for other regional contingencies such as Eighth U.S. Army (Korea); U.S. Army Japan; U.S. Army Pacific; U.S. Army South in Panama (as part of Southern Command); Forces Command (combat forces based in the Continental United States); and the Army's Special Operations Command, which provides special operations forces for combat commanders. Each organization is charged with being able to project power within its area of responsibility to meet the strategic objectives of the nation.

PRODUCTION:
The production system supports the Army's purpose to deter aggression, and if that fails, to help it fight and win. It accomplishes its task through training centers. Initial Entry Centers such as Fort Jackson, S.C., train recruits in basic soldiering skills and the fundamentals of their specific military specialities. Readiness Centers such as the National Training Center at Fort Irwin, Calif., and the Joint Readiness Training Center are designed for intense training of battalion and larger-sized units.

The Army's Training and Doctrine Command (TRADOC) focuses its efforts on standardizing training methods and topics and formulates doctrine for conducting military operations which are thoroughly integrated among all the Army's branches and among all the separate services.

The Army Materiel Command helps develop, buy and distribute weapons and equipment for combat units.

COORDINATION/INTEGRATION:
Headquarters, Department of the Army, coordinates and integrates these organizations. It is charged with determining the Army's role in support of the national military strategy and the means to accomplish that strategy, allocating responsibilities and resources and constantly evaluating goals to determine if the goals can be accomplished.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

THE WARTIME ARMY

OVERVIEW:
The Army is responsible for the use of land forces for the effective prosecution of war and other military operations. In accordance with joint mobilization plans, it is responsible for the expansion of the peacetime components of the Army to meet the needs in the event of war.

FUNCTIONS:
The primary wartime functions of the Army are:

- to organize, train, and equip forces for the conduct of prompt and sustained combat operations on land—specifically, forces to defeat enemy land forces and to seize, occupy, and defend land areas.
- to organize, train, equip, and provide forces for appropriate air and missile defense and space control operations, including the provision of forces as required for the strategic defense of the United States.
- to organize, equip and provide Army forces, in coordination with other military services, for joint amphibious, airborne and space operations and to provide for the training of such forces.
- to organize, train, and equip special operations forces.
- to provide equipment, forces, procedures and doctrine for electronic warfare operations.
- to provide forces for the occupation of territories abroad, including military government personnel pending transfer of this responsibility to other authority.
- to organize, train, equip, and provide forces for land lines of communications.

The Army's M-1 Abrams tank in action

POINTS OF CONTACT:
Army Public Affairs, (703) 697-7589

COMBAT OPERATIONS

SERVICE: Army

OVERVIEW:
Organizing for combat operations begins with understanding the mission to be accomplished, how much time and how many troops are available and on what type of terrain. From this analysis commanders at all levels are then able to determine the personnel and material resources required to accomplish the mission.

Army organization in wartime parallels its peacetime organization from squad through corps. The complexity of the theater of operations dictates the type of Army headquarters required to sustain theater operations and one or more corps, including allied forces.

The wartime commander is then able to develop a concept of operations, expressing what, where, and how force will affect the enemy, and in sufficient detail for the staff and subordinate commanders to understand what they are to do and how to fight the battle without further instructions. The commander describes how he sees the actions of each of his units fitting together to accomplish the mission. The concept includes plans for how he will deal with the enemy, including how his forces will move and how he plans to use his direct and indirect fire support against enemy targets.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

UNITED STATES MILITARY ACADEMY

OVERVIEW:

The purpose of the United States Military Academy at West Point, N.Y., is to provide the nation with leaders of character to serve the common defense.

BACKGROUND:

Today's Military Academy is a vastly different institution from the small school legislated into being by Congress in March 1802. The first graduating class numbered just two officers; today's classes graduate more than 900 men and women annually.

Since its founding nearly two centuries ago, the Military academy has developed cadets in three essential areas: intellectual, physical and military. These developmental paths are balanced and fully integrated into the daily lives of each young man and woman at the Academy.

Intellectual growth is fostered through a four-year academic curriculum leading to a bachelor of science degree and a commission as a second lieutenant in the Army.

Physical development is achieved through a rigorous athletic and physical education program. Each cadet participates at the intercollegiate, club or intramural level. This readies the cadet for the physical demands of military life and helps teach good judgment and self-discipline, even under mental or physical stress.

Military development begins with the cadet's first day at West Point and continues throughout the four-year program. The Cadet Leader Development System seeks to give the cadets increasing responsibility until they are ready to receive their commissions.

The timeless simplicity of the cadet honor code—"a cadet will not lie, cheat or steal, nor tolerate those who do" —is at the heart of the West Point moral and ethical environment, around which the entire cadet experience is built. At West Point it is not enough to train leaders. They must be leaders of character.

Prospective cadets must receive a nomination by a member of Congress or from the Department of the Army. Candidates are evaluated on their academic, physical and leadership potential.

The life of a cadet is demanding, but leisure time does permit such activities as golf, skiing, sailing and ice skating. A wide variety of religious activities is available to cadets of virtually all religious backgrounds.

As knowledge expands to meet the needs of the Army and the nation, life at West Point changes to keep pace. Ever aware of its heritage and its mission, the U.S. Military Academy is developing leaders for tomorrow, and its focus remains the national needs of the next century.

POINT OF CONTACT:

Public Affairs Office, United States Military Academy, West Point NY, 10996-1788; 914-938-2006

THE ARMY RESERVE

OVERVIEW:
The Army Reserve, a major element of the Army's Total Force Policy, reached about 292,000 officers and enlisted soldiers in the late 1980s. As the total military establishment shrinks, the Army Reserve strength will diminish in the coming months, but it will remain a vital part of the Army and the Army's combat and support ability.

ORGANIZATION:
The Army Reserve is administered by the Office of the Chief of the Army Reserve (OCAR), which supports its training, readiness, mobilization and maintenance. As part of the Army staff, OCAR monitors and executes Army Reserve plans, policies and programs; administers funds for personnel, construction and operations; and commands the U.S. Army Reserve Personnel Center.

The Chief, Army Reserve, also serves as commander of the Army Reserve Command (USARC) and is the deputy commanding general of U.S. Forces Command (FORSCOM).

The Office of the Chief, Army Reserve (OCAR) administers six divisions. They are:

- Operations Division, which includes the Operations Support Branch, Current Training Operations Branch; Current Operations Branch; Institutional Training Branch; Force Development Branch; Force Analysis Branch and Full-Time Support Branch.
- Personnel Division, including Plans and Programs Branch, Personnel Management Branch, Personnel Support Branch and Policy Office for ARPERCEN.
- Logistics Division, including Policy, Operations and Programming Branch, and Equipping and Readiness Branch.

Comptroller Division: Budget Branch, Investment Branch, Pay Support Center.

- Program Analysis and Evaluation Division: Plans Section, Programs Section, Data Management Branch.
- Information Division: Information Management Office, Public Affairs OFfice, Administration Office.

In addition to these six divisions, four officers answer directly to the Chief. They are the Office of Programs and Liaison; the Senior Officer/Enlisted Management Office; Engineer Office and Medical Affairs Office.

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BACKGROUND:
The Army Reserve was created by Congress as a pool of manpower in 1912, and the National Defense Act of 1916 created the Officers Reserve Corps, the Enlisted Reserve Corps and the ROTC program.

More than 160,000 Army reservists served on active duty in World War I, and some 200,000 saw active service in World War II.

During the Vietnam War the Army ordered a Reserve call-up of 42 units, encompassing nearly 5,900 reservists, in 1968. Of these, 35 units, with 3,500 soldiers, were sent overseas.

The Army Reserve made an even greater contribution in the Persian Gulf crisis in 1990-91. The total number of Army Reserve soldiers activated was about 85,000, with approximately 40,000 serving in the Southwest Asia theater. Of those called up during Operations Desert Shield and Desert Storm, about 20,000 were Individual Ready Reserve (IRR) soldiers, not affiliated with a reserve unit.

POINT OF CONTACT:
Public Affairs Office, The Army Reserve, 1815 North Fort Myer Drive, Arlington, Va. 22209; 703-696-3961

ARMY NATIONAL GUARD

The Army National Guard has more than 2,600 units in about 3,600 communities across the nation and in its territories. These units train at more than 3,000 armories and operate about 930 maintenance shops, 115 aviation facilities and 71 major training sites, which support their efforts.

This network of support facilities includes traditional training sites at Camp Shelby, Miss., Fort Bragg, N.C., Camp Dodge, Iowa, and Fort Dix, N.J.

A field medical training site in Panama maintains and restores medical equipment used by medical units deploying to Central and South America. Other medical training sites are at Camp Shelby and Fort Indiantown Gap, Pa.

Today, almost one half the Army's combat units and more than a third of its overall strength are found within the Guard. About 398 Army National Guard units and more than 62,000 Guardsmen supported Operations Desert Shield and Desert Storm. Of these, more than 37,000 deployed to Southwest Asia, 3,400 went to Europe and almost 6,000 were stationed in the United States in case of need.

In 1993, Army National Guard personnel numbers are declining, as is the active military establishment. Reaching its peak strength of 457,000 in 1989, the Guard was reduced to about 431,000 in 1992, and is projected to drop to 338,000 by fiscal year 1995.

ORGANIZATION:
All Army and Air Guard units are administered by the National Guard Bureau, a Department of the Army office headed by a lieutenant general as its chief. Under the chief of the bureau are two directors, one for Army and one for Air.

At the state level, the chief military officer is the adjutant general, appointed by the governor. These top officers work through the National Guard Bureau and their state staffs to keep their units in a high state of readiness.

BACKGROUND:
The Army National Guard traces its origins back more than 350 years to the Colonial militia, the citizen soldiers who became the original Minutemen, noted for their contribution to the nation's fight for independence.

Today's Army National Guard is a volunteer organization capable of defending worldwide interests while retaining ties to the individual states in which units are based.

The Guard is, as it has been for generations, available to state and territorial governors as a disciplined and trained force ready to respond to local emergencies such as earthquakes, floods, storms and civil unrest, and more recently, accepting an increased role in drug interdiction.

POINT OF CONTACT:
Public Affairs Office, National Guard Bureau, The Pentagon, Washington, D.C. 20310-2500; 703-695-0421.

U.S. NAVY ORGANIZATION

MARITIME POWER:
The American imperative for maritime power is based on the United States' requirement to have free use of the world's oceans.

MISSION:
The mission of the Navy is to be prepared to conduct combat operations at sea in support of U.S. national interests. This means defeating hostile aircraft, surface ships and submarines. It also means using maritime forces to project power ashore.

DEPARTMENT OF THE NAVY:
The Department of the Navy has three principal components: the Navy Department, consisting of executive offices mostly in Washington, D.C; the operating forces, including the Marine Corps, the reserve components, and in time of war, the Coast Guard and the National Oceanographic and Atmospheric Administration; and the shore establishment.

The shore establishment provides support in the form of: facilities such as machinery and electronic repair; communication centers; training areas and simulators; ship and aircraft repair; intelligence support; storage areas for repair parts, fuel, and munitions; medical facilities; and air bases.

CHAIN OF COMMAND:
The fleet commanders-in-chief provide naval forces to the theater unified commands and are the naval component commanders for three of the theater unified commanders-in-chief: United States Commander-in-Chief Pacific; United States Commander-in-Chief Atlantic; and United States Commander-in-Chief Europe.

In the case of naval forces in the Persian Gulf, the Atlantic and Pacific commands both provide forces for the Commander-in-Chief U.S. Central Command.

These four-star fleet commanders-in-chief sit astride a dual chain of command.

Administratively, they report to the Chief of Naval Operations and provide, train and equip naval forces.

Operationally, the fleet commander-in-chief reports to the theater unified commander-in-chief.

The fleet commander-in-chief exercises command through a subordinate numbered fleet commander. There are four of these three-star commanders whose geographic responsibilities encompass the oceans of the world.

The Third and Seventh Fleet commanders report to the Commander-in-Chief Pacific Fleet. Their areas of responsibility encompass the Pacific and Indian Oceans.

The Second Fleet commander reports to the Commander-in-Chief Atlantic Fleet. His areas of responsibility include the Atlantic, the Caribbean and the Pacific adjacent to the west coast of Central and South America.

The Sixth Fleet commander reports to the

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Commander-in-Chief United States Naval Forces Europe. His area of responsibility encompasses the Mediteranean Sea and the Black Sea.

NAVY FUNCTIONS:
The functions of the Navy are sea control, power projection and strategic sealift.

The concept of sea control as viewed by the United States Navy today is control over a limited sea area for a limited period of time sufficient to accomplish a task.

Power projection is commonly thought of as projecting power ashore through amphibious landings, carrier launched air strikes, strategic nuclear missiles and cruise missiles (conventional or nuclear) from surface ships.

This concept of power projection can be broadened to include projection of influence in peacetime by physical presence either in support of an ally or to influence a potential enemy.

Strategic sealift has been recently added as the third function of the Navy. It is commonly thought of in terms of massive resupply of U.S. land forces fighting overseas.

TASK ORGANIZATION:
Fleet commanders-in-chief and their subordinate naval commanders organize their forces by "task" capabilities to carry out their missions. In practice, this means anticipating mission requirements and effectively organizing the various surface ships, aircraft and submarines.

Several task-organized groups with have commonly used titles are: Carrier Battle Groups, Surface Action Groups, Amphibious Task Forces, Underway Replenishment Groups, and Convoy Escort Groups.

NAVAL WARFARE:
Each naval platform (ship, submarine, or aircraft) is designed to accomplish a specific naval warfare task, often while performing other warfare tasks simultaneously. These tasks include anti-submarine warfare (ASW), anti-surface ship warfare (ASUW), anti-air warfare (AAW), strike warfare, amphibious warfare, mine warfare, and supporting warfare tasks such as electronic warfare (EW), command, control, communication (C3) and intelligence, special operations, logistics or ocean surveillance.

ANTI-SUBMARINE WARFARE:
Naval aircraft, surface ships, submarines and wide area surveillance sensors are designed to control an enemy submarine threat. Land-based and carrier-based fixed-wing and rotary-wing aircraft search for submarines using high tech listening devices. All destroyers, frigates and cruisers are equipped with sonar designed to detect submarines.

Operating in the same arena as the threat is the attack submarine. It is an efficient submarine hunter/killer.

ANTI-SURFACE SHIP WARFARE:
Anti-surface ship warfare (ASUW) is directed against enemy warships or merchant ships.

Carrier based aircraft can attack enemy surface ships hundreds of miles from the main force, well before the enemy ships are within missile firing range.

ANTI-AIR WARFARE:
The air threat is the most dynamic threat the naval commander faces.

Carrier based aircraft are the premier anti-air warfare system in the Navy. Designed to operate beyond 100 nautical miles, their goal is to intercept and destroy aircraft before they can launch their air-to-surface missiles.

The second line of defense against air threats is the surface-to-air missile-equipped ship. Guided missile cruisers and destroyers are designed with the primary task of anti-air warfare about 100 nautical miles around the main force.

A final defense, extending out to about five nautical miles from each ship, includes the short range NATO Sea Sparrow missile system, the 5-inch and 76mm gun systems, and the Vulcan Phalanx 20mm close-in weapon-system (CIWS).

STRIKE WARFARE:
At the highest end of the spectrum of conflict, strike warfare would involve the use of nuclear power launched from ballistic missile submarines, cruise missile-equipped

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ships and carried-based aircraft.

AMPHIBIOUS WARFARE:
The ability of naval forces to land troops ashore from the sea is essential to combat operations. Seizing control of coastal areas and securing port and air base facilities to prepare an area for the introduction of follow-on land and air forces are the primary reasons for amphibious landings. Amphibious assault ships provide command and control, attack aircraft platforms, helicopter lift support and a small waterborne craft lift capability.

MINE WARFARE:
Recent events in the Persian Gulf have once again highlighted the need for an effective mine countermeasures force. The most efficient way to counter a mine threat is to keep the enemy from laying mines in the first place.

Although no platform in the United States Navy has been designed with mine delivery as its primary warfare task, mines can in fact be delivered by aircraft, submarines and surface ships. The P-3 Orion aircraft is an accurate delivery system; and any aircraft that can deliver bombs, such as the S-3 Viking, A-6 Intruder, or F/A-18 Hornet, can lay mines. Although not configured for mine laying, surface ships can be modified to deploy mines. Many attack submarines can also deliver mines.

SUPPLEMENTAL WARFARE TASKS:
Forward bases, port facilities and an air head near the port are essential elements for sustained maritime operations in forward areas.

Underway replenishment ships deliver fuel, munitions, food and repair parts to other surface ships.

The combat logistics force consists of much more than just underway replenishment ships. It includes towing and salvage ships such as oceangoing fleet tugs, submarine rescue ships, repair ships such as submarine tenders, floating dry-docks and even hospital ships to care for the wounded.

Forward bases and the combat logistics force provide naval forces the ability to sail anywhere in the world and to remain and operate there.

The Navy's fundamental warfare tasks also could not be accomplished successfully without early intelligence, long range target detection, identification and acquisition, electronic surveillance, electronic countermeasures, overall command, control and communications, aircraft refueling capability and, at times, special operations forces.

Special operations forces also provide critical support to the U.S. Navy. Sea-Air-Land (SEAL) teams are capable of a wide variety of special warfare operations, including reconnaissance, demolition, sabotage, insertion, hostage and prisoner rescue and other specialized tasks.

JOINT AND BILATERAL OPERATIONS:
The theater commander and his naval component commander must have at their disposal a wide variety of naval assets. Success in high intensity modern warfare requires a joint, integrated, combined arms approach. An operation might include ocean surveillance and mining by Air Force aircraft, support by Army helicopters, Navy attack aircraft strikes, naval gunfire support by surface ships, support by the Marine Corps and assistance from allied forces. Recent joint operations including the Persian Gulf War have demonstrated the flexibility of the Navy-Marine Corps team to work with other U.S. and allied armed services to react to any situation in the world.

POINT OF CONTACT:
Department of the Navy, Office of Information, The Pentagon, Washington, D.C. 20301; (703) 697-5342

SECOND FLEET

SERVICE: Navy

DESCRIPTION:
The United States Second Fleet, operating in the Atlantic Ocean and parts of the Pacific, is the largest of the U.S. Navy's four numbered fleets and complements the Sixth Fleet in the Mediterranean and the Third and Seventh Fleets in the Pacific.

Second Fleet operates primarily in the Atlantic Ocean from the North Pole to the South Pole and from the shores of the United States to the west coast of Europe. It also operates along both coasts of South America and part of the west coast of Central America. In all, it covers more than 38 million square miles.

BACKGROUND:
The U.S. Second Fleet traces its origin to the reorganization of the Navy after World War II in December 1945 and the formation of the U.S. Eighth Fleet. In February 1950, the command was redesignated to its current title, U.S. Second Fleet, and is a part of U.S. Atlantic Command.

Based in Norfolk, Va., Second Fleet currently uses USS Mount Whitney (LCC 20) as the fleet flagship. The force consists of a balanced mix of capabilities including aircraft carriers, surface combatants, submarines, surveillance assets, amphibious forces, marine landing and mobile logistic units.

The Second Fleet commander wears a second hat in the joint chain of command for the U.S. Atlantic Command as Joint Task Force 120 commander.

Second Fleet could also be ordered under certain contingencies in the Caribbean theater of operations to control similarly constructed forces as Joint Task Force 140.

Second Fleet also has a permanent assignment within NATO's Supreme Allied Commander Atlantic (SACLANT) as Striking Fleet.

The Striking Fleet is composed of forces contributed by Belgium, Canada, Denmark, Federal Republic of Germany, The Netherlands, Norway, Portugal, United Kingdom and the United States. In wartime, this force would likely consist of three to four carrier battle groups, one or two anti-submarine task forces, an amphibious task force and about 22,000 Dutch, British and American marines.

POINT OF CONTACT:
Public Affairs Office, Commander, Second Fleet FPO New York, NY 09501-6000
(804) 444-2422

THIRD FLEET

SERVICE: Navy

DESCRIPTION:
Third Fleet operates in the western sea approaches to the United States, including Alaska and the Aleutian Islands. This area of approximately fifty million square miles of mid- and eastern Pacific Ocean areas, includes the Bering Sea and a sector of the Arctic. Alaska, the Aleutian Islands, and major oil and trade sea lines of communication are also within the area.

BACKGROUND:
Third Fleet was originally formed during World War II on March 15, 1943, under the command of Admiral William F. Halsey. He opened his shore headquarters in Pearl Harbor, Territory of Hawaii, on June 15, 1944.

The Third Fleet staff planned and directed many of the decisive naval operations in the Pacific. The Fleet operated in the South and Western Pacific during campaigns in the Solomons, Philippines, Formosa, Okinawa, Ryukyus and the Japanese homeland, with attacks on Tokyo, the naval base at Kure, and the island of Hokkaido. Embarked aboard his flagship USS Missouri (BB-63), Admiral Halsey led Third Fleet into Tokyo Bay on Aug. 29, 1945. The formal Japanese surrender took place aboard the Missouri on Sept. 2, 1945.

On Oct. 17, 1945, the Third Fleet was designated a reserve fleet. On Feb. 1, 1973, after a Pacific Fleet reorganization, Third Fleet was recommissioned as an active fleet, assuming the duties of the former First Fleet, based in San Diego, and the Anti-Submarine Warfare Force on Ford Island, Hawaii. The latter function has since been reassigned within the Pacific Fleet organization.

On Nov. 26, 1986, Third Fleet shifted its headquarters from Ford Island to the flagship USS Coronado (AFG-11), afloat again for the first time since World War II. The move was made to allow the Third Fleet commander the mobility necessary to command his forces on the scene in the event of war and to work more closely with his embarked commanders in peacetime training exercises. Since 1991, the Third Fleet staff and flagship have been based in San Diego, Calif.

POINT OF CONTACT:
Public Affairs Office; U.S. Third Fleet; FPO San Francisco, CA 96601-6001

SIXTH FLEET

SERVICE: Navy

DESCRIPTION:
The ships and aircraft of the United States Sixth Fleet operate throughout the Mediterranean Sea and adjacent areas. The Sixth Fleet is divided into a variety of forces, including an aircraft carrier battle group, an amphibious ready group with an embarked reinforced battalion of U.S. Marines, support ships, land-based patrol aircraft and submarines.

BACKGROUND:
The United States first sent naval forces to the Mediterranean in the early 1800s. They have been maintained there on a continuous basis since the end of World War II.

The force that was initially called "U.S. Naval Forces, Mediterranean" during World War II became the U.S. Sixth Fleet in 1950. Today, the Sixth Fleet works closely with allied military and other friendly forces whose nations have an economic reliance on Mediterranean trade routes. U.S. interests are also vital and make our presence in the Mediterranean region a necessity.

The U.S. Sixth Fleet Commander has both U.S. national and NATO responsibilities, reporting to the Commander in Chief, U.S. Naval Forces, Europe in the national chain of command, and to the Commander in Chief, Allied Forces, Southern Europe when the fleet operates as part of NATO's Allied Strike Forces Southern Europe.

The fleet commander operates from his flagship, the guided missile cruiser USS Belknap (CG-26) homeported in Gaeta, Italy. The Sixth Fleet normally comprises an average of 30 ships, 75 aircraft and approximately 20,000 sailors and Marines organized into a number of task groups to conduct assigned missions.

POINT OF CONTACT:
Public Affairs Office; Commander Sixth Fleet; FPO AD 09501-6002

SEVENTH FLEET

SERVICE: Navy

DESCRIPTION:
Operating in the Western and Southern Pacific, Indian Ocean and Arabian Gulf, the fleet covers 52 million square miles, from the Cape of Good Hope to the Pacific Ocean east of Austrtalia and New Zealand, and south to the Antarctic.

BACKGROUND:
Established in 1943, the Seventh Fleet is the largest of the forward-deployed U.S. Fleets.

Seventh Fleet is commanded by a vice admiral embarked in USS Blue Ridge (LCC-19), a forward deployed ship operating from Yokosuka, Japan. Seventh Fleet reports directly to Commander in Chief, U.S. Pacific Fleet at Pearl Harbor, Hawaii.

The fleet is composed of one or two aircraft carriers; three or four cruisers; 18 to 20 destroyers and/or frigates; seven ir eight submarines; one amphibious command/flagship; five to eight amphibious ships; one fleet repair ship; one Marine Amphibious Unit composed of 1,800 men, plus their air assets, which may include Harrier jets and helocopters; 18 mobile logistics support ships; three ocean-going tugs/salvage vessels; 16 Near Term Prepositioned Force ships (NTPF); and approximately 360 aircraft.

There are approximately 60,000 Navy and Marine Corps personnel assigned to the Seventh Fleet.

POINT OF CONTACT:
Public Affairs Office (Code 012); Commander, Seventh Fleet; FPO AP 96601-6003

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

U.S. ATLANTIC FLEET

SERVICE: Navy

DESCRIPTION:
With headquarters in Norfolk, Va., the Atlantic Fleet provides the forces for the Second Fleet in the Atlantic, the Sixth Fleet in the Mediterranean, and the Middle East Force in the Persian Gulf-Indian Ocean area. It also provides readiness training, logistics support and administrative support for surface ships, submarines and aviation squadrons through its subordinate type commands of Naval Surface Force Atlantic, Submarine Force Atlantic and Naval Air Force Atlantic. The Atlantic Fleet covers the Atlantic Ocean from the North Pole to the South Pole; the Caribbean Sea and the waters around Central and South America extending to 92 degrees west longitude in the Pacific (the Galapagos Islands); the Norwegian, Greenland and Barents seas; and waters around Africa extending to the Cape of Good Hope.

BACKGROUND:
The U.S. Atlantic Fleet numbers about 280 ships, 1,700 combat and support aircraft, 180,000 Navy personnel and 43,000 Marines.

U.S. Atlantic Fleet forces join those from other nations in forming NATO's Striking Fleet Atlantic. They circumnavigate South America annually with forces of the Commander, South Atlantic, making goodwill port visits and training with the navies of South America. The Atlantic Fleet also deploys forces in support of the Standing Naval Forces Atlantic, a permanent squadron of destroyers and frigates representing the NATO nations.

Within the U.S. Atlantic Fleet there is only one numbered fleet—U.S. Second Fleet—and there are six "type" commands: Naval Surface Force; Naval Air Force; Naval Submarine Force; Fleet Marine Force; Naval Training Command and Naval Construction Battalions (Seabees).

Type commanders provide administrative and logistic support and readiness training for their respective units.

In addition, three special commands—Operational Test and Evaluation Force; Commander Naval Base, Guantanamo Bay, Cuba; and U.S. Naval Activities Caribbean—provide support and training for the Fleet.

The U.S. Atlantic Fleet continues to provide training, readiness, administrative and logistic support to its ships during extended operation in the Mediterranean or in the Middle East when they are under the operational control of other unified, joint or naval commanders. Additionally, Atlantic Fleet units support various federal authorities in counternarcotics operations.

POINT OF CONTACT:
Public Affairs Office; Commander in Chief, U.S. Atlantic Fleet (Code NO2P); Norfolk, Va. 23511-5100; (804) 444-6294

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

MILITARY SEALIFT COMMAND

SERVICE: Navy

DESCRIPTION:
Headquartered in Washington, D.C., the Military Sealift Command provides efficient sea transportation, combat-ready logistics forces and reliable special mission ships for the Department of Defense in peace and war.

BACKGROUND:
MSC ships are separate and distinct from other Navy surface forces in three primary ways: they are non-combatant; they include both government-owned and chartered vessels; and they are crewed by civilian mariners from the U.S. Civil Service and private ship operating companies. MSC has flexibility to meet the widely varying logistical support requirements for U.S. forces in peacetime and in war.

MSC accomplishes its mission with approximately 141 active ships in three forces: the Naval Fleet Auxiliary Force; Special Mission Support Force; and Strategic Sealift Force.

The Naval Fleet Auxiliary Force provides direct support to Navy combatant ships and is made up of fleet oilers, fleet stores ships, ocean-going tugs, underwater surveillance ships and one ammunition ship. In October 1992, six Navy-operated large combat stores ships, the Mars class AFS, were turned over to MSC to conduct underway replenishment of Navy ships more cost-effectively with civilian mariner crews.

The Special Mission Support Force carries out a variety of highly specialized missions, including oceanographic research, missile tracking, oceanographic and hydrographic surveys, and cable laying and repairing through the use of 21 ships.

The Strategic Sealift Force is composed of 77 government-owned and chartered ships. These ships carried 95 percent of all the cargo used in the Persian Gulf war. They include dry cargo ships, tankers, freighters, two hospital ships, aviation logistics support ships, Maritime Prepositioning Ships, prepositioning ships, Fast Sealift Ships and Ready Reserve Force ships maintained in reduced five, ten or 20-day operating status by the Maritime Administration.

In wartime, the Strategic Sealift Force can grow dramatically to meet the increased need for military cargo movement. MSC's prepositioning ships, all strategically located around the world and loaded with military supplies, would likely be closest to the operating theater and first to arrive on scene. Other sealift assets can be called into action, including MSC's eight fast sealift ships, two hospital ships and two aviation logistics support ships--all of which are maintained in a reduced operating status during peacetime.

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As cargo requirements increase, MSC looks to the U.S. merchant marine and allied fleets for additional chartered ships and to the Maritime Administration for activation of ships in the Ready Reserve Force.

Beyond these strategic sealift assets, DOD has other sealift options during war. These include ships from the Sealift Readiness Program (SRP), a program which provides U.S. merchant ships which have competed for procurement from MSC or have used government subsidies for construction or operation. Effective U.S. Controlled Ships (EUSC), meaning ships owned by U.S. citizens, but which fly foreign flags of convenience, could be requisitioned. In addition, merchant ships from our NATO allies could be called into action.

With the trend toward containerization of cargo in today's maritime industry, ship design has changed. Smaller break-bulk ships, although extremely well suited to military transport, are no longer commercially viable and are therefore fast becoming vestiges of the past. The cargo holds of newer container ships do not accommodate oversized military equipment, including tanks, trucks and other vehicles. Additionally, shoreside container cranes may not always be available during hostilities. The problems are compounded because many of the newer, larger commercial ships are prevented access to a number of vital ports around the world.

With the advent of Operations Desert Shield and Desert Storm in the Persian Gulf beginning in August 1990, the importance of military sealift was brought to the forefront. This massive sealift effort was larger than any in U.S. history. Sealift performed exceptionally well and proved that the investment in sealift enhancement less than a decade earlier was a sound one.

POINT OF CONTACT:
Department of the Navy; Military Sealift Command; Washington, DC 20398-5540; (202)433-0330

NAVAL TELECOMMUNICATIONS COMMAND

SERVICE: Navy

DESCRIPTION:
The Naval Telecommunications Command controls the Naval Telecommunications System and maintains the Navy's portion of the Defense Communications System.

BACKGROUND:
The Naval Communication System Headquarters was established on July 1, 1959, to manage the Naval Communication System. On June 1, 1973, the Chief of Naval Operations redesignated the command as the Naval Telecommunications Command.

The Naval Telecommunications Command is broken into four communications areas, which correspond with the geographic areas of the four numbered fleets. In each area, a master station provides communications between the shore-based communications systems and afloat forces.

More than 70 communication stations, units and telecommunications detachments and centers worldwide provide the tactical assets needed to support the Navy. Nearly all teletype and data transmissions from Navy operating forces are received by Naval Telecommunications Command facilities.

The command also provides specialized communications support such as satellite access management, and anti-submarine support communications centers that transmit vital information to maritime patrol aircraft.

The Naval Telecommunications Command has six major field activities:

- The Naval Telecommunications Automation Support Center maintains a telecommunications automation support center at which software and components are maintained and supported.
- The Naval Telecommunications Systems Integration Center maintains a naval telecommunications certification facility at which all naval automated telecommunications systems ashore and afloat may be tested, integrated, operated and certified. The center also maintains software for assigned fleet systems.
- The Naval Electromagnetic Spectrum Center controls electromagnetic spectrum management matters.
- The Navy Commercial Communications Office manages Navy-leased, dedicated, and common-user systems including the Automatic Voice Network Automatic Digital Network Defense Switched Network, and Automatic Secure Voice Communications.
- The Chief Navy-Marine Corps Military Affiliate Radio Systems (MARS) oversees the Military Affiliate Radio System and amateur radio affairs.
- The Office of Navy Telecommunications Contracting is responsible for contracts for base systems and services for the Navy.

POINT OF CONTACT:
Naval Telecommunications Command; 4401 Massachusetts Ave, N.W. Washington, D.C. 20394-5290 (202) 433-2096

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

U.S. NAVAL FORCES, EUROPE

SERVICE: Navy

DESCRIPTION:
The Commander in Chief, U.S. Naval Forces, Europe, and his staff provide coordination and leadership to naval forces throughout Eourope and Western Africa.

BACKGROUND:
Commander in Chief, U.S. Naval Forces, Europe (CINCUSNAVEUR) operates under two separate chains of command: first, he is an operational commander in charge of all U.S. naval forces in Europe, a component commander of the U.S. Commander in Chief, Europe. Second, he is an administrative commander in the Navy Department chain of command directly responsible to the Chief of Naval Operations for management, logistics and communications support of Navy assets in Europe.

NAVEUR is responsible for having fully ready forces available for NATO if the need arises. It is also responsible for the logistic support of U.S. Navy ships and aircraft whether they are nationally or NATO assigned. It deals with NATO commands and member governments in planning, operating, and funding NATO facilities used by the U.S. Navy. The geographic area of responsibility of the command stretches from Norway to Capetown and Portugal to Israel.

Naval Forces Europe's principal subordinate commands are:

- U.S. Sixth Fleet, the largest U.S naval force in Europe, which has operated in the Mediterranean since it was established on June 1, 1948. Headed by a vice admiral, the Sixth Fleet normally consists of approximately 30 ships, 100 aircraft and 20,000 Navy men and women and Marines.
- Fleet Air Mediterranean. A rear admiral commands a wide range of shore activities throughout the Mediterranean from his headquarters in Naples, Italy. Included are ship and aviation support commands at Rota, Spain; La Maddalena, Sardinia; Naples, Italy; Sigonella, Sicily; and Souda Bay, Crete. Additionally, the Fleet Air Mediterranean commander acts as an operational task force commander under Sixth Fleet, directing shore-based aircraft in maritime surveillance and defense of the fleet.
- U.S. Naval Activities, United Kingdom provides management and area coordination for U.S. naval activities throughout the United Kingdom and northern Europe. The Commander in Chief of U.S. Naval Forces Europe also serves as the U.S. Commander, Eastern Atlantic, a wartime command of the U.S. Atlantic Fleet. The geographic area of responsibility of the command stretches from the mid-Atlantic to the European coast and from the North Pole to south of the Azores, excluding Iceland and the Azores. In wartime, the command supports battle groups in the eastern and northern Atlantic Ocean and the Norwegian Sea.

POINT OF CONTACT:
Public Affairs Office; Commander in Chief, U.S. Naval Forces, Europe; FPO AE 09510-0151

RESEARCH AND DEVELOPMENT (OFFICE OF CHIEF OF NAVAL RESEARCH)

SERVICE: Navy

MISSION:
The Chief of Navy Research oversees Office of Naval Research, Office of Naval Technology, and Office of Advanced Technology. These agencies provide programs to ensure transition of research and technology to the fleet.

BACKGROUND:
The Office of Naval Research (ONR) was created by Congress immediately after World War II to sponsor and nurture basic research. A second and companion entity, the Office of Naval Technology (ONT), was established in 1980. In 1990, the Office of Advanced Technology (OAT) was created to allocate and reallocate advanced development resources. ONR, ONT and OAT form the Navy's science and technology program and are part of the Office of the Chief of Naval Research (OCNR) headquartered in Arlington, Va.

ONR supports basic research at universities, Navy laboratories and R&D centers, and with industry and nonprofit organizations. Research programs currently emphasize the ocean sciences, advanced materials and information sciences.

Additionally, in order to ensure the continuation of quality science, ONR supports the efforts of more than 5,000 graduate students and investigators performing research in naval relevant technical fields.

The Office of Naval Technology's exploratory development program adopts the best science emerging from basic research and proves the technical feasibility of its application for fleet and expeditionary force problems and needs. OAT is responsible for Advance Technology Development programs, matching emerging technologies with the Navy's military needs. OAT ensures that limited resources are invested in the Navy's highest priority areas.

POINT OF CONTACT:
Department of the Navy, Office of the Chief of Naval Research, Arlington, Va. 22217-5000

PACIFIC FLEET

SERVICE: Navy

DESCRIPTION:
Pacific Fleet command encompasses 102 million square miles (52 percent of the earth's ocean area).

BACKGROUND:
Five operational commands fall under the Pacific Fleet. Seventh Fleet operates in the Indian Ocean and Western Pacific; Third Fleet operates in the Eastern and Northern Pacific; Task Force Fourteen conducts submarine operations throughout the entire Pacific theater; Task Force Twelve conducts theater antisubmarine operations in CINCPACFLT's theater of operations; and Submarine Force Pacific, based in Pearl Harbor, controls all tactical and ballistic missile submarines in the Pacific Ocean.

Additionally, five type commanders report to CINCPACFLT for training and administration of specific types of ships, aircraft and marine forces.

Commanding General Fleet Marine Force Pacific, based at Camp H. M. Smith in Pearl Harbor, is responsible for the 80,000 marines and sailors serving the Fleet Marine Force, Pacific.

Commander Naval Air Force U.S. Pacific Fleet, based in San Diego, is responsible for all the fleet's carrier and land-based aircraft.

Commander Naval Surface Force U.S. Pacific Fleet, based in San Diego, is responsible for approximately 170 surface units ranging from amphibious ships to battleships.

Commander Naval Logistics Force Pacific Fleet, based in Pearl Harbor, is responsible for providing logistics support throughout the CINCPACFLT's area of responsibility.

Commander Naval Training Command U.S. Pacific Fleet, based in San Diego, coordinates all training functions for CINCPACFLT.

In addition to operational commanders, CINCPACFLT directs seven regional coordinators at Navy commands ashore which support seagoing forces. These are U.S. Naval Forces, Japan (Yokosuka); Korea (Seoul); Marianas (Guam); San Diego; San Francisco; Seattle; and Pearl Harbor.

CINCPACFLT's four Western Pacific regional coordinators are responsible for maintaining effective liaison with host nation governments, facilitating combined exercises and enhancing mutual force coordination. The remaining regional coordinators are responsible for Navy activities ashore in their assigned regions.

Approximately 255 ships, 2,000 aircraft, and more than 275,000 sailors and Marines and 55 shore facilities fall under the Pacific Fleet.

POINT OF CONTACT:
Commander in Chief, U.S. Pacific Fleet; Public Affairs Office; Pearl Harbor, HI 96860-7000; (808) 471-9779

NAVAL SPACE COMMAND

SERVICE: Navy

DESCRIPTION:
The Naval Space Command's primary mission is to provide space systems support to naval forces worldwide, and to help prepare the naval services for a larger space involvement, extending well into the next century.

BACKGROUND:
The Naval Space Command was established in 1983 at Dahlgren, Va., to operate naval space systems and consolidate the Navy's existing space activities and organizations.

The Navy is the principal tactical user of satellites for space surveillance, environmental monitoring, communications, and navigation. Navy and Marine Corps primary warfare areas depend upon space today for mission effectiveness.

ORGANIZATION:
The Naval Space Command has its headquarters staff in Virginia and three field activities at Dahlgren and Chesapeake, Va., and Point Mugu, Calif.

The Naval Satellite Operations Center is responsible for control and operation of the Navy Navigation Satellite System, known as TRANSIT. Normally, four TRANSIT satellites are in orbit to provide precise navigational fixes to the ships and submarines.

The Fleet Surveillance Support Command was established in July 1986. The command's mission is to operate and maintain Navy Relocatable Over-the-Horizon Radar (ROTHR) systems. ROTHR is a high-frequency radar under development to provide wide-area oceanic surface and air surveillance data to the fleet. Fleet commanders-in-chief will assume operational control of Navy ROTHR systems following development testing and deployment.

The Naval Space Surveillance Center is charged with the "space watch." Begun in 1961, the system can detect, identify, and track space vehicles out to an effective range of 15,000 nautical miles. The command also maintains a catalog of all earth-orbiting satellites.

SPACE SYSTEMS OPERATIONS:
NAVSPACECOM currently manages the Fleet Satellite Communications System to provide primary UHF communications to naval forces deployed worldwide. The system, which has been operational since 1978, features six satellites in orbits over the United States and Atlantic, Pacific, and Indian Oceans. The command's spacecraft also serve as the host vehicle for the strategic Air Force Satellite Communications System.

The command also manages a new Navy-leased UHF satellite communications system that supplements the Fleet Satellite Communications System.

POINT OF CONTACT:
Naval Space Command; Dahlgren, Virginia; 22448-5170; (703) 663-7841

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

SPECIAL WARFARE

SERVICE: Navy

DESCRIPTION:
Naval Special Warfare encompasses operations generally accepted as being unconventional in nature and clandestine in character, including use of specially trained and equipped forces.

BACKGROUND:
In World War II, the U.S. Navy recognized the requirement for combat swimmers to reconnoiter assault beaches. To fulfill this need, the Navy organized volunteer swimmers into special teams called Navy Combat Demolition Units. These units conducted underwater reconnaissance and obstacle clearance missions. At war's end, beach reconnaissance and clearance methods had become standardized and the teams were a highly effective force. In 1947, the Navy organized its first underwater offensive strike units, the Underwater Demolition Teams (UDTs). During the Korean War, UDTs took part in the Inchon landing and performed a variety of other missions including demolition raids on bridges and tunnels and limited minesweeping operations in harbors and rivers.

During the early 1960s, each service formed its own counterinsurgency force. The Navy utilized UDT personnel to form Sea-Air-Land (SEAL) teams.

During the Vietnam War, UDTs performed successful reconnaissance missions and SEAL Teams carried out numerous offensive operations.

In 1983, existing UDTs were redesignated as SEAL Teams and SEAL Delivery Vehicle (SDV) Teams. The UDT requirement for underwater reconnaissance and demolition became SEAL missions. Recently, SEALs performed direct action missions during U.S. military operations in Grenada, Panama and the Persian Gulf. Today, forward-deployed Naval Special Warfare units provide fleet commanders with a unique capability world-wide.

In 1987 the United States Special Operations Command (SOCOM) became a unified command. SOCOM has operational command of all U.S. based Special Operations Forces and is responsible for the readiness and interoperability of such forces worldwide.

The Naval Special Warfare Center at Coronado, Calif., established in November 1985, conducts both basic and advanced level training for SEAL personnel.

Naval Special Warfare forces are organized, equipped and trained to be quickly deployable and highly mobile. SEAL, SEAL Delivery Vehicle Teams and Special Boat Units are lightly armed and rely on stealth, concealment and surprise to accomplish their operations.

POINT OF CONTACT:
Department of the Navy (OP-604); Washington, DC 20350-5000; (703) 695-9397

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

UNITED STATES NAVAL ACADEMY

OVERVIEW:
The purpose of the United States Naval Academy at Annapolis, Md., is to prepare midshipmen to become professional officers in the naval service.

BACKGROUND:
The Naval Academy was born in 1845, founded by Secretary of the Navy George Bancroft, in the Polk administration. The campus is set on 338 acres between the south bank of the Severn River and historic downtown Annapolis, Maryland's state capital, 33 miles east of Washington, D.C.

The Yard, as the campus is known, features French Renaissance and contemporary architecture, with the Chesapeake Bay as a backdrop. The venerable Bancroft Hall dormitory complex, the academy chapel and the Administration Building, among others, make the Academy a National Historical Site. Newer facilities such as the multipurpose Alumni Hall for brigade activities, Nimitz Library, Rickover Hall engineering complex and Hendrix Oceanography Laboratory give the academy ultramodern educational resources.

PROFILE:
The Brigade of Midshipmen is made up of about 4,200 men and women, the best of the nation's youth, from every state and territory and several foreign countries. They are taught by a faculty of more than 600 military and civilian instructors.

In addition to a core curriculum of academic and professional courses, students work toward bachelor of science degrees in 18 areas: eight in engineering, six in science, mathematics and computer sciences; and four in the humanities and social sciences.

Professional subjects such as seamanship and navigation, tactics, naval engineering, leadership, military law, small arms and close order drill are taught during the four-year program. In addition, midshipmen train at naval bases and aboard ship during part of each summer.

Midshipmen can choose from 20 men's and nine women's intercollegiate varsity sports, 12 intramural sports and 10 club sports. More than 100 other extracurricular activities are offered in areas ranging from music and drama to parachuting and scuba diving. The goal of this intensive educational package is to prepare the midshipmen morally, mentally and physically to become the captains and admirals of tomorrow's United States Navy and generals of the Marine Corps.

They are commissioned as ensigns in the U.S. Navy or second lieutenants in the U.S. Marine Corps upon graduation, and will serve at least six years of exciting and rewarding service as naval officers.

POINT OF CONTACT:
U.S. Naval Academy, Public Affairs Office, Annapolis, Md. 21402; 410-267-2291.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

UNITED STATES MARINE CORPS

BACKGROUND:

On November 10, 1775, the Continental Congress, meeting in Philadelphia, resolved that "two Battalions of Marines be raised" for service as landing forces with the fleet. The passage of this resolution, sponsored by John Adams, established the Continental Marines and marked the birth date of the Marine Corps.

The same year, Congress commissioned 32-year-old Captain Samuel Nicholas, the first Marine officer, and future first Marine Commandant. On July 11, 1798, the United States Marine Corps was established as a separate service, and in 1834 it was made part of the Department of the Navy.

The National Security Act in 1947, which organized the military under a single Secretary of Defense, formalized in law for the first time the Corps' special amphibious function. Public Law 416 enacted in 1952 amended the National Security Act to stipulate that the strength of the Marine Corps would be not less than three combat divisions and three air wings. It also gave the Commandant of the Marine Corps equal status with other members of the Joint Chiefs of Staff in matters of direct concern to the Marine Corps.

MISSION:

The statutory mission of the Marine Corps is to organize, train and equip to provide fleet Marine forces of combined arms, together with supporting air components, for service with the fleet in the seizure or defense of advanced naval bases and for the conduct of such land operations as may be essential to the prosecution of a naval campaign; provide detachments and organizations for service on armed vessels of the Navy; provide security detachments for the protection of naval property at naval stations and bases; and perform other duties as the President may direct. The Marine Corps is also responsible for developing amphibious doctrine including tactics, techniques and equipment used by landing forces.

CONCEPT:

The Concept of the Corps was developed by focusing on the continuing requirements of our nation. The Marine Corps remains a versatile, fast-moving, hard-hitting force, prepared to intercede in potential conflicts at their beginnings and able to hold an aggressor at bay while the American nation mobilizes. The expeditionary, combined-arms nature of the Marine Corps provides the

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National Command Authority with responsible, credible forces crucial to projecting U.S. influence and safeguarding national interests. Marine forces can either "kick the door open" with their sea-based forcible-entry capablility, or "hold it open" for the employment of follow-on forces.

MARINE AIR-GROUND TASK FORCE:
The Marine Corps organization for combat is the Marine Air-Ground Task Force (MAGTF), which can be sized to meet any mission requirement. Regardless of size, MAGTFs are all structured with the same four task-organized, major subordinate elements (MSEs): the command, ground combat, aviation combat, and combat service support elements. The basic units that are used to build MAGTF MSEs are maintained in the Fleet Marine Force. Today's MAGTFs are credible, mobile, sustainable, and flexible forces with combined- arms capabilities for a wide range of operations. These operations include crisis response, presence, alliance support, disaster relief, stability operations, security assistance, counter- narcotics operations, humanitarian assistance, and special operations. The inherent flexiblility of this task-organized, combined arms force gives the nation a rapid response capability to almost any situation.

COMMANDANT/CHIEF OF STAFF:
The Commandant of the Marine Corps command the operating forces of the Marine Corps and shore activities assigned by the Secretary of the Navy, and is responsible to the Secretary for the Corps' proper utilization of resources and operational efficiency in order to maintain a high state of readiness. His specific responsibilities include: Determining the needs of the Corps for equipment, weapons, weapons systems, materials, supplies, facilities, maintenance, and supporting services. Formulating budget proposals for the Marine Corps. Developing, in conjunction with other military services, amphibious doctrine. Formulating Marine Corps strategic plans and policies, and participating in the formulation of joint and combined plans and policies. Determining present and future needs for manpower, to include reserve and civilian personnel; maintaining a high degree of competence, education, training, leadership, morale, and motivation.

MAJOR COMMANDS:
Marine Forces, Atlantic Norfolk, VA; Marine Forces, Pacific Camp Smith, HI; I Marine Expeditinary Force EMCB Camp Pendleton, CA; II Marine Expeditionary Force EMCB Camp Lejeune, NC; III Marine Expeditionary Force, EMCB Camp Courtney, Okinawa, Japan; 1st Marine Division, EMCB Camp Pendleton, CA; 2nd Marine Division,EMCB Camp Lejeune, NC; 3rd Marine Division EMCB Camp Smedley D. Butler, Okinawa, Japan; 1st Marine Aircraft Wing EMCB Camp Butler, Okinawa, Japan; 2nd Marine Aircraft Wing EMCAS Cherry Point, NC; 3rd Marine Aircraft Wing, EMCAS El Toro, CA; 1st Force Service Support Group, EMCB Camp Pendleton, CA; 2nd Force Service Support Group, EMCB Camp Lejeune, NC; 3rd Force Service Support Group, E Camp Kinser, Okinawa, Japan; Headquarters, U.S. Marine Corps, Washington, D.C.; Marine Reserve Forces, New Orleans, LA

POINT OF CONTACT:
Commandant of the Marine Corps (PAM), Headquarters, U.S. Marine Corps, 2 Navy Annex, Washington D.C., 20380-1775; (703) 614-1492.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

CONCEPT OF OPERATIONS U.S. MARINE CORPS

OVERVIEW:

Congress intended the Marine Corps to be a strong, ready force that is versatile, fast moving and hard hitting. Congress further intended that the Corps be prepared to prevent potential conflicts by prompt and vigorous action, be able to hold a full-scale aggressor at bay while the United States mobilizes, and be ready when the nation is least ready.

In keeping with this intent, the Marine Corps provides the nation with an expeditionary military organization capable of responding rapidly to threats to American interests by projecting power through its forward deployed units and by reacting to crises with combat-ready units tailored to meet any contingency.

Complex global situations require Marine forces that are capable of rapid and discriminate employment across the spectrum of conflict on land, sea, and air. This spectrum ranges from general war to mid- or low-intensity conflicts. The Marine Corps provides forces both visible or discreet, on-scene or poised beyond the horizon, and which possess a conspicuous strike and power projection capability.

Marines, in conjunction with naval forces, provide the nation with a strategically mobile force.

AMPHIBIOUS WARFARE

Amphibious warfare integrates all types of ships, aircraft, weapons, and landing forces in an attack against a hostile shore.

Initiated with no combat power ashore, amphibious warfare requires the rapid landing and build-up of forces and equipment to prosecute further combat operations.

Marine CH-53 puts Humvee on the beach

Amphibious operations, exploiting the element of surprise and capitalizing on enemy weaknesses in the most timely manner, are the most complex forms of warfare.

Amphibious forces can deploy by a variety of means, on short notice, as a deterrence force or with a measured military action that may range from mere presence to intervention/retaliation, up to a full-scale assault.

Depending on the combat capability of the opponent, an amphibious force may be the dominant force throughout the duration of a conflict or serve as part of joint forces. In cases where the threat is greater, amphibious forces may seize initial entry points for introduction of more extensive follow-on forces and then reembark aboard amphibious shipping to conduct operations elsewhere.

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WARFARE TASKS
Title 10, U.S. Code, assigns the Marine Corps several specific roles and functions. In fulfilling these roles and functions, the Marine Corps performs a wide variety of wartime tasks, including:

Seizure and defense of advanced naval bases; land operations ashore; crisis response, forward presence, alliance support and special operations; which can include close-quarter battle, reconaissance and surveillance, seizure and destruction of offshore facilities such as oil or gas platforms, hostage rescue, and various noncombat operations involved with disaster relief, humanitarian assistance and counternarcotics efforts.

ORGANIZATION
The Marine Corps is organized into two broad categories: operating forces and the support establishment.

Operating forces make up more than half of the total force (including civilians and Reserves) of the Marine Corps. The major elements of these forces are Fleet Marine Forces, security forces, Marines assigned to unified commands, and support battalions.

Fleet Marine Forces. Fleet Marine Forces (FMF) are made up of command elements, divisions, aircraft wings and service support groups.

A Marine division is made up primarily of three infantry regiments, each of which usually consists of three infantry battalions a weapons company and a headquarters company. A division also includes a tank battalion, an assault amphibian battalion, combat engineer battalion, reconnaissance battalion, headquarters battalion, light armored infantry battalion and an artillery regiment. An artillery regiment is made up of a headquarters battalion, three direct support artillery battalions, and one general support artillery battalion.

A Marine Aircraft Wing contains an air control group, a headquarters squadron, a wing support group, an aerial refueler transport squadron, a tactical electronic warfare squadron and four Marine aircraft groups, three of fighter-attack aircraft and one helicopter group.

Marine Force Service Support Groups. A Marine Force Service Support Group includes a headquarters and service battalion, maintenance battalion, supply battalion, engineer support battalion, landing support battalion, motor transport battalion, medical and dental battalions, and a brigade service support group command element.

Marine Security Forces. Marine Corps Security Forces are comprised of two Marine Corps Security Force battalions, Marine Barracks in the continental United States and abroad, and Marine detachments aboard ships. The Marine Security Force battalions provide Marines to the State Department for embassy security at 138 diplomatic posts in 129 different countries.

Support Forces. Support forces form less than one quarter of the Marine Corps' total force. They include training and education commands, bases and stations, recruiters, combat development and research and development.

COMBAT ORGANIZATION
The Marine Corps organizes for combat by forming integrated, combined arms Marine Air Ground Task Forces. These task forces are specifically tailored according to the mission, and can be rapidly deployed by air or sea.

A task force comprises four elements: command, ground combat, aviation combat and service support. The size of the task force and its elements is mission dependent.

A Marine Expeditionary Force (MEF) is the largest task force and is made up of a command element, a division, a wing and a force support group.

A Marine Expeditionary Brigade (MEB) is smaller than an MEF and consists of a command element, an infantry regiment, an aircraft group and a brigade support group.

A Marine Expeditionary Unit (MEU) is the smallest standard task force and includes a command element, infantry battalion, aircraft squadron and an MEU support group.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-1775; (703) 614-1492

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

ORGANIZATION OF THE UNITED STATES AIR FORCE

NARRATIVE:
World War II had been over for two years when the Air Force ended a 40-year association with the U.S. Army to become a separate service.

The Department of the Air Force was created when President Truman signed the National Security Act of 1947. On Sept. 18, 1947, Chief Justice Fred M. Vinson administered the oath of office to the first secretary of the Air Force, W. Stuart Symington of Missouri.

Under the National Security Act, the functions assigned to the Army Air Force's commanding general transferred to the Department of the Air Force. The act provided for a two-year transfer of these functions as well as property, personnel and records.

Later, under the Department of Defense Reorganization Act of 1958, unified and specified commands came into being and became responsible to the president and the secretary of defense through the Joint Chiefs of Staff.

Today, three wars after its inception, the Air Force counts among its resources 10 major commands, 36 field operating agencies, three direct reporting units, 121 major installations in the United States and overseas, and more than three-quarters of a million active duty, Air National Guard, Air Force Reserve and civilian personnel.

MISSION:
The Air Force mission is to defend the nation through control and exploitation of air and space.

Teamed with the Army, Navy and Marine Corps, the Air Force is prepared to fight and win any war if deterrence fails. The Air Force is responsible for providing:

- Aircraft and missile forces necessary to prevent or fight a general war.
- Land-based air forces to establish air superiority, interdict the enemy and provide air support of combat ground forces.
- Primary aerospace forces for the defense of the nation against air and missile attack.
- The primary airlift capability for use by all of the nation's military services.
- Major space research and development support for the Department of Defense.
- Assistance to the National Aeronautics and Space Administration in conducting our nation's space program.

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AIR FORCE MANAGEMENT:
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, retaining immediate supervision of activities that involve vital relationships with Congress, the secretary of defense, other governmental officials and the public.

CHIEF OF STAFF AND 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. He serves as a member of the Joint Chiefs of Staff and the Armed Forces Policy Council. In the Joint Chiefs capacity, he is one of the military advisers to the president, the National Security Council and the secretary of defense. He is also the principal adviser to the secretary of the Air Force on Air Force activities.

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. He is responsible for the efficiency of the Air Force and the preparation of its forces for military operations. He supervises the administration and support of Air Force personnel assigned to unified organizations and unified and specified commands.

Other members of the Air Staff include the vice chief of staff, assistant vice chief of staff, chief master sergeant of the Air Force, deputy chiefs of staff for personnel, plans and operations, logistics, and command, control, communications and computers; an assistant chief of staff for intelligence;, civil engineer, chiefs of safety, police, scientist, Air Force Reserve, National Guard Bureau and chaplains; the AF historian; the Air Force Scientific Advisory Board; the judge advocate general; the surgeon general; and the directors of manpower and organization, test and evaluation, programs, and morale, welfare, recreation and services.

FIELD ORGANIZATIONS:
The 10 major commands, 36 field operating agencies, three direct reporting units and their subordinate elements constitute the field organizations that carry out the Air Force mission.

These commands are organized on a functional basis in the United States and a geographic basis overseas.

Units of major commands, in descending order, 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 Force's prime operational unit.

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. Within the wing, operations, logistics and support groups are the cornerstones of the organization.

Field operating agencies and direct reporting units are assigned specialized missions and report directly to Headquarters U.S. Air Force.

POINT OF CONTACT: Air Force News Agency, Products Team (AFNEWS/IICP), 1015 Billy Mitchell Road, Kelly AFB, Texas 78241-5601; (210) 925-7564

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Major Commands:

(Note: Separate fact sheets on major commands follow in this publication)

- Air Combat Command, Langley Air Force Base, Va.
- Air Force Intelligence Command, Kelly Air Force Base, Texas.
- Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio.
- Air Force Space Command, Peterson Air Force Base, Colo.
- Air Force Special Operations Command, Hurlburt Field, Fla.
- Air Mobility Command, Scott Air Force Base, Ill.
- Air Training Command, Randolph Air Force Base, Texas
- Air University, Maxwell Air Force Base, Ala.
- Pacific Air Forces, Hickam Air Force Base, Hawaii.
- United States Air Forces in Europe, Ramstein Air Base, Germany.

Field Operating Agencies

- Air Force Audit Agency, Pentagon, Arlington, Va.
- Air Force Base Disposal Agency, Pentagon, Arlington, Va.
- Air Force Center for Environmental Excellence, Brooks Air Force Base, Texas.
- Air Force Civil Engineering Support Agency Tyndall Air Force Base, Fla.
- Air Force Civilian Personnel Management Center, Randolph Air Force Base, Texas.
- Air Force Combat Operations Staff, Pentagon, Arlington, Va.
- Air Force Communications Command, Scott Air Force Base, Ill.
- Air Force Cost Analysis Agency, Arlington, Va.
- Air Force Flight Standards Agency, Pentagon, Arlington, Va.
- Air Force Frequency Management Agency, Pentagon, Arlington, Va.
- Air Force Historical Research Agency, Maxwell Air Force Base, Ala.
- Air Force Inspection Agency, Norton Air Force Base, Calif.
- Air Force Intelligence Support Agency, Fort Belvoir, Va.
- Air Force Legal Services Agency, Bolling Air Force Base, Washington, D.C.
- Air Force Logistics Management Agency, Maxwell Air Force Base, Gunter Annex, Ala.
- Air Force Management Engineering Agency, Randolph Air Force Base, Texas.
- Air Force Medical Operations Agency, Bolling Air Force Base, Washington, D.C.
- Air Force Medical Support Agency, Brooks Air Force Base, Texas.
- Air Force Military Personnel Center, Randolph Air Force Base, Texas.
- Air Force Morale, Welfare, Recreation and Services Agency, Randolph Air Force Base, Texas.
- Air Force News Agency, Kelly Air Force Base, Texas.
- Air Force Office of Special Investigations, Bolling Air Force Base, Washington, D. C.
- Air Force Program Executive Office, Pentagon, Arlington, Va.
- Air Force Real Estate Agency, Bolling Air Force Base, Washington, D.C.
- Air Force Reserve, Robins Air Force Base, Ga.
- Air Force Review Boards Agency, Pentagon, Arlington, Va.
- Air Force Safety Agency, Norton Air Force Base, Calif.
- Air Force Security Police Agency, Kirtland Air Force Base, N.M.
- Air Force Studies and Analyses Agency, Pentagon, Arlington, Va.
- Air Force Technical Applications Center, Patrick Air Force Base, Fla.
- Air National Guard Readiness Center, Andrews Air Force Base, Md.
- Air Reserve Personnel Center, Denver, Colo.
- Air Weather Service, Scott Air Force Base, Ill.
- Center for Air Force History, Bolling Air Force Base, Washington, D.C.
- Joint Services Survival, Evasion, Resistance and Escape Agency, Fort Belvoir, Va.
- Seventh Communication Group, Pentagon, Arlington, Va.

Direct Reporting Units:

- Air Force District of Washington, Bolling Air Force Base, Washington, D.C.
- Air Force Operational Test and Evaluation Center, Kirtland Air Force Base, N.M.
- United States Air Force Academy, Colorado Springs, Colo.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIR COMBAT COMMAND

SERVICE: Air Force

DESCRIPTION:
Air Combat Command, a major command with its headquarters at Langley Air Force Base, Va., was activated June 1, 1992.

FEATURES:
ACC's twin missions of deterrence and air campaign operations are accomplished through the use of intercontinental ballistic missiles; command, control, communications and intelligence aircraft; reconnaissance aircraft; some tactical airlift and tankers; fighters and bombers. Of the 950 ICBMs and the approximately 3,100 aircraft available to ACC, about 1,300 aircraft belong to the Air National Guard and Air Force Reserve.

ACC organizes, trains, equips and maintains combat-ready forces and ensures that strategic air defense forces are ready to meet the challenges of peacetime air sovereignty and wartime air defense. ACC provides nuclear-capable forces for U.S. Strategic Command and theater air forces for the five United States unified commands (Atlantic Command, European Command, Pacific Command, Central Command Southern Command). In addition, ACC also provides air defense forces to the North American Aerospace Defense Command.

PERSONNEL:
The 185,000 strong work force consists of 22,700 officers, 141,300 enlisted personnel, and 21,300 civilians. When mobilized, more than 87,000 members of the Air National Guard and Air Force Reserve are assigned to ACC.

ORGANIZATION:
Six numbered air forces and two major direct reporting units report to the ACC commander, who is also commander-in-chief, U.S. Air Forces Atlantic and the Air Force component commander of U.S. Strategic Command.

FIRST AIR FORCE:
Headquartered at Tyndall Air Force Base, Fla., First Air Force's daily operational mission is the air defense of the continental U.S. The First Air Force commander, as the region commander, reports directly to the commander-in-chief, NORAD. First Air Force includes four air defense sectors that are responsible for the air defense of their respective areas of the continental United State. Aircraft are on around-the-clock alert in support of this mission.

First Air Force also plays a key role in the nation's war on drugs, working closely with the Coast Guard and the Customs Service to monitor and intercept illegal drug traffic.

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First Air Force includes Air Forces Iceland at Naval Air Station Keflavik, which is the Air Force component of the Iceland Defense Force, a subordinate command under the commander-in-chief of U.S. Atlantic Command.

Air Forces Iceland provides a combat force for the air defense of Iceland and air surveillance data in support of the NORAD mission.

SECOND AIR FORCE:
Second Air Force, with headquarters at Beale Air Force Base, Calif., controls strategic reconnaissance and battle management forces. These forces provide specialized support for theater commanders, U.S. Strategic Command and other U.S. agencies.

EIGHTH AIR FORCE:
With headquarters at Barksdale Air Force Base, La., Eighth Air Force is responsible for ACC forces on 10 bases in the Central United States and functions as the operational air component for U.S. Strategic Command.

More than 39,750 people and 250 bomber, fighter, and tanker aircraft are assigned to 8th Air Force.

NINTH AIR FORCE:
Ninth Air Force, with its headquarters at Shaw Air Force Base, S.C., has 13 wings performing fighter, bomber, tanker, airlift and air control operations and training in the Eastern United States. Ninth Air Force has 50,900 people and more than 650 aircraft on 12 bases.

Ninth Air Force is also the Air Force component of U.S. Central Command—U.S. Central Air Forces. Operation Desert Shield deployed the USCENTAF staff to the Southwest Asia theater, operationally controlling joint and coalition air forces. To prepare for this type mission, USCENTAF active and reserve forces train regularly with Army, Navy, and Marine Corps units.

TWELFTH AIR FORCE:
Twelfth Air Force, with its headquarters at Bergstrom Air Force Base, Texas, operates combat-ready forces and equipment with 10 wings in the Western United States and Panama. In addition, Twelfth Air Force is the Air Force component of Southern Command. More than 45,150 people and 475 aircraft are assigned to nine 12th Air Force bases. The command's units perform fighter and bomber operations, training, reconnaissance, air control, and a wide range of electronic combat tasks.

TWENTIETH AIR FORCE:
Twentieth Air Force at Vandenberg Air Force Base, Calif., controls ACC's ICBM force and acts as the operational missile component for U.S. Strategic Command. With seven wings, including six operational missile wings and one training and test wing, Twentieth Air Force has more than 18,000 people and 950 ICBMs.

DIRECT REPORTING UNITS:
The two direct reporting units are the Air Warfare Center, Eglin Air Force Base, Fla., and the Weapons and Tactics Center, Nellis Air Force Base, Nev.

The Air Warfare Center serves as the focal point for combat air forces in electronic combat, chemical defense, reconnaissance and aircrew training devices. The center is also responsible for operational testing and evaluation of new equipment and systems proposed for use by these forces.

The Weapons and Tactics Center conducts multiple activities to ensure that Air Force combat forces worldwide maintain the skilled instructors, knowledge of the enemy, technical expertise, effective equipment and sound tactics to fly, fight, and win.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak St, Langley AFB, VA 23665-2191; (804) 764-5471

AIR MOBILITY COMMAND

SERVICE: Air Force

DESCRIPTION:
Air Mobility Command, a major command with its headquarters at Scott Air Force Base, Ill., provides the United States with a global reach into the 21st century, and to sustain the power of U.S. combat forces world-wide.

MISSION:
AMC primarily provides strategic mobility through airlift and aerial refueling. In addition, the command is responsible for state-side aeromedical evacuation and continues a tradition of humanitarian support at home and around the world.

CAPABILITIES:
Airlift aircraft provide the United States the capability to deploy air and air-mobile forces anywhere in the world, and to sustain them in combat. Aerial refueling increases range, bomb load and loiter times. Air Force aircraft can also refuel Navy, Marine and allied aircraft.

PERSONNEL:
AMC consists of 181,000 active duty and reserve military and civilian personnel at 116 installations. Fourteen U.S. installations and one overseas are under AMC control, an additional 41 have AMC presence and 59 more have air reserve components (Air National Guard and Air Force Reserve). Personnel include approximately 84,300 active duty, 45,700 Air Guard and 51,000 AF Reserve.

RESOURCES:
AMC operates all C-5 and C-141 aircraft and their support units, including in-theater maintenance, aerial port, and command and control activities. Approximately two-thirds of the Air Force's KC-10s, two-thirds of its C-130s and more than three-quarters of its KC-135s are assigned to AMC. The rest of these aircraft are assigned to Air Combat Command or to theater commanders.

ORGANIZATION:
The Tanker Airlift Control Center at Scott Air Force Base is AMC's agency for centralized scheduling and assignment of airlift and refueling assets worldwide. All DoD requirements for long-haul airlift and air refueling support are channeled through TACC.

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Three numbered air forces, 15th Air Force at March Air Force Base, Calif., 21st Air Force at McGuire AFB, N.J., and 22nd Air Force at Travis AFB, Calif., operate the command's resources.

AMC Air Force bases are: Altus. Okla., Andrews, Md., Charleston, S.C., Dover, Del., Grissom, Ind., Little Rock, Ark., Malmstrom, Mont., March, Calif., McChord, Wash., McGuire, N.J., Norton, Calif., Plattsburgh, N.Y., Scott, Ill., and Travis, Calif.

EMBLEM:
The AMC emblem retains MAC's emblem design. This design was first approved in 1948 for the Military Air Transport Service, MAC's predecessor. The heraldic significance of the emblem was revised to reflect AMC's global reach mission.

POINT OF CONTACT:
Air Mobility Command, Office of Public Affairs, Bldg 1905, Rm 118, 502 Scott Dr; Scott AFB, IL 62225-5317; (618) 256-4502

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIR TRAINING COMMAND

SERVICE: Air Force

DESCRIPTION:
Air Training Command is a major command with headquarters at Randolph Air Force Base, San Antonio, Texas. It is responsible for recruiting, basic military, technical, and flying training and officer commissioning programs.

The command includes six training centers; pilot training at six locations; basic and advanced navigator training; survival training; a field training group with sub-units at 75 worldwide locations; and the Air Force Reserve Officer Training Corps program.

MISSION:
ATC recruits new people into the Air Force and provides them military, technical, and flight training, and precommissioning education. After basic training, but before placement in Air Force jobs, most enlisted people are trained in a technical skill at one of ATC's six training centers. More than 2,200 technical courses offer a wide variety of job skills for today's young adults. During their career in the Air Force, every officer and enlisted person receives training administered by the command.

RECRUITING:
The Air Force Recruiting Service, with its headquarters at Randolph Air Force Base, Texas, is ATC's recruiting and commissioning agent.

Recruiting Service has more than 1,100 nationwide recruiting offices.

BASIC MILITARY TRAINING:
A six-week, 30 training days, basic military training course for all new Air Force, Air Force Reserve and Air National Guard enlistees is conducted at Lackland Air Force Base, San Antonio, Texas.

OFFICER TRAINING:
The 301st Officer Training Squadron directs a 15-week course at the Lackland Training Annex adjacent to Lackland Air Force Base. Its curriculum includes professional military knowledge, defense studies, communication skills, leadership and management training, physical training, instruction in drill and ceremonies, and markmanship.

Using the T-41 Mescalero aircraft, OTS graduates scheduled to enter pilot training participate in a three-week flight screening program. The officer training squadron also conducts two-week Air Force Officer Orientation courses for new staff judge advocates, chaplains, direct-commissioned reserve officers and medical service officers; and a four-week Health Professions Officer Indoctrination Course for Air Force health professions scholarship recipients.

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AFROTC:
With its headquarters at Maxwell Air Force Base, Ala., AFROTC is a major source of the Air Force's commissioned officers. ROTC has existed on American college campuses for 70 years. The two- and four-year-programs hosted by many U.S. colleges and universities offer select students opportunities to earn Air Force commissions while completing degree requirements.

TECHNICAL TRAINING:
Technical training is provided to men and women in more than 200 technical specialties. Technical training courses, many accredited through the Community College of the Air Force, provide job qualification and advanced training to Air Force people in support of their primary missions. Each year approximately 230,000 students graduate from more than 2,200 formal training courses conducted at the six training centers: Chanute Air Force Base, Ill.; Keesler AFB, Miss.; Lowry AFB, Colo.; Lackland AFB, Sheppard AFB and Goodfellow AFB, Texas; and at 75 worldwide field training detachments and operating locations.

Two of ATC's centers are slated to close. Chanute Air Force Base will close in 1993 and Lowry AFB is scheduled to close in 1994.

SPACE TRAINING:
Undergraduate space training, which began in October 1986, is the newest concept in space education and is conducted by the 3301st Space Training Squadron, Lowry AFB. Under this program 150 to 200 officers prepare for careers in five space operations fields used at more than 30 sites worldwide. After graduation, most officers receive job-specific follow-on training at Peterson Air Force Base, Colo. Space training is scheduled to move to Goodfellow AFB when Lowry closes.

PILOT TRAINING:
Undergraduate pilot training, a 52-week program, is conducted for officers selected to become pilots. Training includes 189 flying hours, 450 hours of ground training, and 62 hours in flight simulators and cockpit familiarization trainers.

Undergraduate pilot training is conducted at Columbus Air Force Base, Miss.; Laughlin AFB, Texas; Reese AFB, Texas; Vance Air Force Base, Okla.; and Williams Air Force Base, Ariz. In addition, Euro-NATO Joint Jet Pilot Training, commonly referred to as ENJJPT, is an undergraduate pilot training program conducted at Sheppard Air Force Base, Texas.

Williams is scheduled to close in 1993.

NAVIGATOR TRAINING:
New technology and specialized weapons systems continually redefine the navigator's role. Today's navigators use highly accurate, sophisticated computer systems that allow them to position their aircraft on a specific target at a precise moment.

Specialized undergraduate navigator training, conducted in T-43 and T-37 aircraft at Mather AFB, Calif., trains Air Force, Air Reserve component, Navy, Marine and foreign students for duty in airlift, reconnaissance, air refueling, rescue, bomber, fighter, and electronic countermeasure aircraft. The program is scheduled to relocate to Randolph Air Force Base this year when Mather Air Force Base closes.

SURVIVAL TRAINING:
The Air Force combat survival course is conducted at Fairchild Air Force Base, Wash., where about 4,000 aircrew members receive training each year. Specialized environmental courses are provided temporarily at Tyndall AFB, Fla., for water survival, and Eielson AFB, Alaska, for arctic survival.

ATC evaluates and monitors the survival training conducted at the U. S. Air Force Academy, Colo., and the U. S. Air Force School of Aerospace Medicine, Brooks Air Force Base, Texas.

COMMUNITY COLLEGE:
The Community College of the Air Force, which was established in 1972, is a multi-campus college with administrative headquarters at Maxwell Air Force Base, Ala. The college integrates on- and off-duty education of enlisted personnel into a balanced program of study that can lead to an associate in applied science degree.

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The Community College of the Air Force was accredited by the Southern Association of Colleges and Schools Commission on Colleges in 1980. Through CCAF, Air Force enlisted members receive formal academic recognition for completion of Air Force technical and professional education. CCAF is the only federal agency authorized to award associate degrees solely to enlisted members.

OCCUPATIONAL MEASUREMENT SQUADRON:
The Air Force Occupational Measurement Squadron at Randolph AFB, determines classification and training requirements for every Air Force job and career field. To do this, the squadron conducts occupational analysis surveys that are the basis for classification, training and many personnel programs; and creates training requirements analyses that help curriculum developers create quality training.

DEFENSE LANGUAGE INSTITUTE ENGLISH LANGUAGE CENTER:
International military members and some civilians attend full-time English language training at Defense Language Institute English Language Center, Lackland AFB. Also, the center conducts English language instructor and advanced instructor courses for foreign students. About 3,300 students from about 80 countries graduate each year. Center personnel also act as in-house advisers to host-country English language classes. The center is a Department of Defense agency that reports to ATC.

WILFORD HALL USAF MEDICAL CENTER:
Wilford Hall Air Force Medical Center at Lackland, which has been involved in every American conflict since 1942, is America's largest military hospital. The 1,000-bed medical center serves as Lackland's hospital,a specialized treatment center for the southern United States, and a tertiary care center for DoD patients evacuated from around the world. Wilford Hall serves more than 26,000 in-patients, more than a million out-patients and 15,000 aeromedical evacuees each year.

Wilford Hall's training programs are world renowned, with specialty board pass rates that far surpass national averages. At any given time, Wilford Hall has more than 500 research projects under way and has won acclaim for medical advances ranging from an AIDS natural history study to development of today's aerobic exercise.

Wilford Hall provides services unique to the Air Force and military medicine. Services include the Air Force's AIDS-HIV treatment and evaluation center, DoD centers for liver and allogeneic bone marrow transplants, and the Air Force's only level-1 trauma center.

HISTORY:
Since its inception in 1943, ATC has trained more than 13 million people. From a World War II peak of more than 600 training installations, the number of ATC installations has declined to 13 bases.

Originally, the command headquarters was at Fort Worth. In the 1940s, it was located at Barksdale Air Force Base, La.; then, in 1949, the command headquarters was relocated to Scott Air Force Base, Ill. In 1957, it moved to Randolph AFB.

POINT OF CONTACT:
Air Training Command, Public Affairs Office, 100 H Street, Suite 3, Randolph AFB, Texas, 78150-4330; (210) 652-3946

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

UNITED STATES AIR FORCES IN EUROPE

SERVICE: Air Force

NARRATIVE:
U.S. Air Forces in Europe (USAFE), with its 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.

MISSION:
In peacetime, USAFE trains and equips U.S. Air Force units pledged to NATO, the North Atlantic Treaty Organization. Under wartime conditions, its tactical fighters and fighter-bombers, augmented by people, aircraft and equipment from the Air National Guard and Air Force Reserve, come under the operational command of NATO. The command's weapons systems are ready for close air support, air interdiction, air defense and support of maritime operations.

In fulfilling its NATO responsibilities, the command maintains combat-ready units dispersed from Great Britain to Turkey. It provides fighter, reconnaissance and airlift support for all U.S. and NATO exercises.

As a component of the U.S. European Command, USAFE supports U.S. military plans and operations in Europe, the Mediterranean, the Middle East and parts of Africa.

HISTORY:
USAFE originated as the 8th Air Force in 1942 and flew heavy bombardment missions from British air fields over the European continent during World War II. In January 1944, 8th Air Force was redesignated the U.S. Strategic Air Forces in Europe, responsible for operations in the Middle East as well as Europe. In August 1945, the War Department deleted "Strategic" and the command was renamed U.S. Air Forces in Europe.

When the Soviets blockaded West Berlin in June 1948, the Western Allies answered with the Berlin Airlift. USAFE airlifted more than 2.3 million tons of food, fuel and medical supplies with the aid of the U.S. Navy and the British Royal Air Force. To give armed support to these flights, the command activated the 3rd Air Division in England. The formation of NATO in 1949 committed the United States to help defend Western Europe and USAFE again strengthened its airpower.

By the end of 1951, the command's responsibilities had expanded in Europe and eventually to French Morocco, Libya, Saudi Arabia, Greece, Turkey, Italy, and Spain. The increased responsibilities led to far-reaching changes, including a major reorganization in 1967 when France withdrew from the NATO military command structure,

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forcing all foreign troops to leave.

Changes continued through the early 1970s. Headquarters USAFE transferred from Lindsey Air Station, Germany, to Ramstein Air Base in March 1973 and NATO's Allied Air Forces Central Europe was established at Ramstein in June 1974. The USAFE commander in chief then took command of Allied Air Forces Central Europe, in addition to commanding U.S. Air Force units in Europe.

The historic Intermediate Range Nuclear Forces Treaty, ratified in 1988, mandated the first-ever elimination of an entire class of weapons from U.S. and Soviet inventories. USAFE completed removal of ground-launched cruise missiles and other weaponry in March 1991.

OPERATIONS DESERT SHIELD-DESERT STORM:
With the onset of Operation Desert Shield in August 1990 and Desert Storm the following January, USAFE resources mobilized and moved to Southwest Asia. More than 180 aircraft and 5,400 people assigned to USAFE units deployed to the Persian Gulf area. More than half of the command's aircraft deployed to support Desert Storm.

The command's air support was lethal. For example, USAFE accounted for only 20 percent of the air-to-air assets in Desert Storm, but claimed half of the air-to-air kills. Command support personnel shipped 85,000 tons of munitions, including more than 35,000 bombs and 7,800 missiles.

USAFE activated aeromedical staging facilities and contingency hospitals, increasing available bed space 1,500 percent above normal peacetime operations. More than 9,000 patients, most of them suffering from noncombat-related illnesses and injuries, were evacuated to Europe. More than 3,000 were treated at USAFE medical facilities. Almost 7,600 patients were later air evacuated to the continental United States for follow-on treatment.

OPERATION PROVIDE COMFORT:
While much of the world celebrated the coalition victory, Kurdish rebels and Iraqi forces were fighting in Northern Iraq. The Kurds began a mass exodus toward Turkey and later Iran. USAFE and U.S. European Command personnel stepped in to save lives during Operation Provide Comfort.

The operation immediately began air-dropping food and supplies to the refugees. More than 2,400 USAFE people deployed in support of Provide Comfort, along with 36 fighter aircraft to provide protection for the transports. In a relatively new role, USAFE used A-10 Thunderbolt aircraft to spot and mark the pockets of Kurds needing humanitarian relief.

As Operation Provide Comfort drew to a close, Kurdish leaders asked for continued protection from the Iraqi army. Operation Provide Comfort II picked up where the first operation left off, building a multinational, rapidly deployable air and ground force in Turkey ready to defend the Kurds.

POINT OF CONTACT:
U. S. Air Forces In Europe, Public Affairs Office, Unit 3050, Box 120, APO AE 090-94; 011-49-6371-43616 - Ramstein Air Base, Germany, extension 6357

PACIFIC AIR FORCES

SERVICE: U.S. Air Force

NARRATIVE:
Pacific Air Forces, with its headquarters at Hickam Air Force Base, Hawaii, is the principal air component of the U.S. Pacific Command.

PACAF's area of responsibility is far-reaching: more than half the Earth's surface from the west coasts of the Americas to the east coast of Africa, and from the Arctic to the Antarctic. The area is home for some two billion people in 35 nations.

MISSION:
PACAF's primary mission is to plan, conduct, and coordinate offensive and defensive air operations in the Pacific and Asian theaters. This involves responsibilities to the U.S. Pacific Command and the U.S. Air Force.

As an Air Force major command, PACAF is responsible for most Air Force units, bases and facilities in the Pacific and Alaska. The command ensures that flying resources in the region are properly trained, equipped and organized.

ORGANIZATION:
The command has approximately 48,000 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.

PACAF's major units are 5th Air Force, Yokota Air Base, Japan; 7th Air Force, Osan Air Base, South Korea; 11th Air Force, Elmendorf AFB, Alaska; and 13th Air Force, Andersen AFB, Guam. Major units also include 3rd Wing at Elmendorf AFB; 8th Fighter Wing, Kunsan Air Base, South Korea; 15th Air Base Wing, Hickam AFB; 18th Wing, Kadena Air Base, Japan (Okinawa); 51st Wing, Osan Air Base, South Korea; 343rd Wing, Eielson AFB, Alaska; 432rd Fighter Wing, Misawa Air Base, Japan; 374th Airlift Wing, Yokota Air Base, Japan; and the 633rd Air Base Wing at Andersen AFB.

In Japan, U.S. air operations are controlled by 5th Air Force; for the Northern Pacific, by 11th Air Force; in South Korea, by 7th Air Force; and, in the Southwest Pacific region by 13th Air Force.

Fifteenth Air Base Wing at Hickam operates and maintains Air Force installations, provides information management and logistics support to Headquarters PACAF, and supports many small Air Force activities in the Pacific. Aligned under the 15th Air Base Wing, the 10th Air Defense Squadron directs the air defense of Hawaii and the 10-million-square-mile Pacific Islands Defense Region, including Wake, Midway, Guam, Johnston, Christmas, the Marshalls and the Mariana islands.

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HISTORY:
The organization was activated Aug. 3, 1944, as the Far East Air Forces.

After Worlw War II ended, Far East Air Forces and 5th Air Force remained in Japan, 7th Air Force operated from Hawaii and 13th Air Force operated from the Philippines. Seventh Air Force was inactivated in 1949, reactivated from 1955 through 1957 in Hawaii, and from 1966 through 1975 in Vietnam and Thailand.

On July 1, 1957, four years after the Korean War armistice, Far East Air Forces was redesignated Pacific Air Forces, and the headquarters was transferred to Hickam. In the early 1980s, increased Soviet strength in the Pacific forced PACAF to plan for additional global contingencies. The Sept. 8, 1986, reactivation of 7th Air Force in Korea, improved peacetime and wartime command arrangements in the Western Pacific.

Andersen AFB, Guam, was reassigned from Strategic Air Command to PACAF Oct. 1, 1989.

Taegu, Kwang Ju and Suwon air bases reverted to collocated base status by the end of fiscal year 1992.

Eleventh Air Force became a part of PACAF Aug. 9, 1990, when it replaced Alaskan Air Command.

Due to the June 1991 volcanic eruption of Mount Pinatubo in the Philippines, Clark Air Base was closed Nov. 26, 1991, and 13th Air Force moved to Andersen Air Force Base Dec. 2, 1991.

POINT OF CONTACT:
Pacific Air Forces, Office of Public Affairs, Hickam AFB, Hawaii 96853-5001; (808) 471-9360.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIR FORCE SPECIAL OPERATIONS COMMAND

SERVICE:
Air Force

NARRATIVE:
Air Force Special Operations Command, with its headquarters at Hurlburt Field, Fla., was established May 22, 1990. AFSOC is a major command and the Air Force component of U.S. Special Operations Command, a unified command.

MISSION:
AFSOC is America's specialized air power. It is capable of delivering special operations combat power anytime, anywhere.

The command provides Air Force special operations forces for worldwide deployment and assignment to regional unified commands for conducting:

- Unconventional warfare
- Direct action
- Special reconnaissance
- Counterterrorism
- Foreign internal defense
- Humanitarian assistance
- Psychological operations
- Personnel recovery
- Counternarcotics

ORGANIZATION:
AFSOC is composed of approximately 8,500 people, of whom about 22 percent are stationed overseas. The command's three composite active duty flying units operate more than 100 fixed and rotary-wing aircraft.

1st SPECIAL OPERATIONS WING:
The 1st SOW at Hurlburt is the oldest and most seasoned unit in AFSOC. It includes the 8th Special Operations Squadron, which flies the MC-130E Combat Talon; the 15th SOS, which flies the MC-130 Combat Talon II (Hercules) cargo/refueler; the 16th SOS, which flies the AC-130H Spectre gunship; and the 20th SOS, which flies the MH-53J Pave Low helicopter. Two squadrons are at nearby Eglin Air Force Base, Fla., the 9th SOS, with the HC-130 Combat Shadow (Hercules) refueler; and the 55th SOS, which flies the MH-60G Pave Hawk helicopter.

352nd SPECIAL OPERATIONS WING:
The 352nd SOW, RAF Alconbury, United Kingdom, is the designated Air Force component for Special Operations Command Europe. Its squadrons are 7th SOS, which flies the MC-130E Combat Talon; the 21st SOS, equipped with the MH-53J Pave Low; and the 67th SOS, with the HC-130N/P Combat Shadow.

353rd SPECIAL OPERATIONS GROUP:
The 353rd SOG, with headquarters at Kadena Air Base, Japan, is the Air Force com-

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ponent for Special Operations Command Pacific. The squadrons are the 1st SOS, which flies the MC-130 Combat Talon; the 17th SOS, with the HC-130 Combat Shadow; and the 31st SOS at Osan Air Base, Korea, which flies the MH-53J Pave Low helicopter.

720TH SPECIAL TACTICS GROUP:
The 720th STG, with its headquarters at Hurlburt Field, has units located in the United States, Europe, and the Pacific. The group is comprised of special operations combat control teams and pararescue forces. Their missions include: air traffic control for establishing air assault landing zones; close air support for strike aircraft and Spectre gunship missions; establishing casualty collection stations; and providing trauma care for injured personnel.

U.S. AIR FORCE SPECIAL OPERATIONS SCHOOL:
The USAF SOS, Hurlburt Field, provides special operations- related education to Department of Defense personnel, government agencies and allied nations. Subjects covered in the 13 courses range from regional affairs and cross-cultural communications to anti-terrorism awareness, revolutionary warfare and psychological operations.

SPECIAL MISSIONS OPERATIONAL TEST AND EVALUATION CENTER:
SMOTEC, with its headquarters at Hurlburt Field, provides expertise to improve the capabilities of special operations forces worldwide. The center 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 two Air Reserve Component units when mobilized. One is the 919th Special Operations Wing (AFRES) at Duke Field, Fla., whose 711th SOS flies the AC-130A Spectre gunship, and its 71st SOS at Davis-Monthan AFB, Ariz., which flies MH-60G Pave Hawk helicopters. The other is the 193rd SOG (ANG) at Harrisburg Airport, Pa., flying the EC-130E.

POINT OF CONTACT:
Air Force Special Operations Command, Public Affairs Office, 100 Bartley St, Hurlburt Field, Fla., 32544-5273; (904) 884-5515

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

AIR FORCE MATERIEL COMMAND

SERVICE:
Air Force

DESCRIPTION:
Air Force Materiel Command, with headquarters at Wright-Patterson AFB, Ohio, equips the Air Force with everything it uses, from bombers to pencils.

MISSION:
The Air Force's largest command in terms of employees and funding, AFMC manages 52 percent of the total Air Force budget and handles major aerospace responsibilities for the Department of Defense. This support includes research, development, testing and evaluation of satellites, boosters, space probes and associated systems for NASA.

AFMC researches, develops, tests, acquires, delivers and logistically supports every Air Force aircraft and weapon system and other equipment.

ORGANIZATION:
AFMC employs about 125,000 military and civilian employees. The command's emphasis on high technology makes it the Air Force's largest employer of scientists and engineers. It also employs the most Air Force civilians—about 90,000—and has about 12,000 officers and 23,000 enlisted people.

AFMC fulfills its mission through a series of facilities that provide comprehensive support for aircraft, missiles, munitions, and the people who operate them. Weapon systems developed and acquired through its four product centers, using science and technology from their four major laboratories. The systems are tested in AFMC's three test centers, then are serviced and receive major repairs over their lifetime at the command's five air logistics centers.

The command's specialized centers perform many other development and logistics functions. Eventually, aircraft and missiles are retired to AFMC's Arizona desert facility.

PRODUCT CENTERS:
Aeronautical Systems Center, Wright-Patterson AFB, is responsible for research, development, test, evaluation, and initial acquisition of aircraft and related equipment.

Electronic Systems Center, Hanscom AFB, Mass., develops and acquires command, control, communications, computer, and intelligence systems.

Human Systems Center, Brooks AFB, Texas, has the role of integrating and maintaining people in Air Force systems and operations. The center concentrates on crew-system integration, crew protection, environmental protection and aerospace medicine. It develops and acquires systems such as life support, chemical warfare defense, air base support and aeromedical casualty.

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Space and Missile Systems Center, Los Angeles Air Base, Calif., designs and acquires all Air Force and most DOD space systems.

MAJOR LABORATORIES:
Armstrong Laboratory at Brooks AFB, a part of the Human Systems Center, ensures that Air Force weapon systems are compatible with the people operating them. The laboratory researches and develops technology for maintaining, protecting and enhancing human capabilities. Its efforts are concentrated on aerospace medicine, crew systems, human resources and occupational and environmental health.

Phillips Laboratory, Kirtland AFB, N.M., is the Air Force's focal point for all space and missile-related research and technology, including geophysics, propulsion, space vehicles, survivability, and directed-energy weapons. It is part of AFMC's Space and Missile Systems Center.

Rome Laboratory, Griffiss AFB, N.Y., is the Air Force's research and development center for command, control, communications and intelligence. It develops equipment and techniques for surveillance of ground and aerospace objects. It is part of the Electronics Systems Center.

Wright Laboratory at Wright-Patterson AFB, a part of the Aeronautical Systems Center, is the Air Force's largest laboratory complex. It leads in the discovery, development and transition of aeronautical technologies, and is recognized as the center of high-tech excellence in such fields as cockpits, flight controls, electronics, artificial intelligence and propulsion and ordnance technology.

TEST CENTERS:
Arnold Engineering Development Center, Arnold AFB, Tenn., has the nations's most advanced and largest complex of flight simulation test facilities. The center has more than 50 aerodynamic and propulsion wind tunnels, rocket and turbine engine test cells, space environmental chambers, arc heaters, ballistics ranges, and other units.

Air Force Development Test Center, Eglin AFB, Fla., tests and evaluates nonnuclear munitions, electronic combat systems and navigation and guidance systems. Air Force Flight Test Center at Edwards AFB, Calif., on 301,000 acres on the edge of the Mojave Desert, has tested all the aircraft in the Air Force inventory. The nation's first jet- and rocket-powered aircraft completed their first flights at Edwards. It is the locale of much aerospace history, including the breaking of the sound barrier.

AIR LOGISTICS CENTERS:
Five air logistics centers provide logistics support and depot-level maintenance for the entire Air Force inventory of missiles and aircraft systems. They are Ogden Air Logistics Center, Hill AFB, Utah; Oklahoma City Air Logistics Center, Tinker AFB, Okla.; Sacramento Air Logistics Center, McClellan AFB, Calif.; San Antonio Air Logistics Center, Kelly AFB, Texas; and Warner Robins Air Logistics Center, Robins AFB, Ga.

MAJOR SPECIALIZED CENTERS:
Aerospace Guidance and Metrology Center, Newark AFB, Ohio, repairs missile and aircraft inertial guidance and navigation systems, operates the Air Force Metrology and Calibration Program.

Aerospace Maintenance and Regeneration Center, Davis-Monthan AFB, Ariz., is the site for storing surplus aircraft and for aircraft regeneration at a site that affords minimum deterioration and corrosion because of meager rainfall, low humidity and alkaline soil. It presently stores more than 3,600 aircraft from all the services.

Air Force Security Assistance Center, Wright-Patterson AFB, integrates and coordinates the security assistance activities of AFMC.

Cataloging and Standardization Center, Battle Creek, Mich., is the Air Force focal point for federal cataloging and DOD standardization programs. A customer support division provides users information on stock and part numbers, and the interchangeability of spare parts.

Materiel Systems Center, Wright-Patterson AFB, operates, maintains and enhances existing information systems and acquires and develops new computer-based information systems.

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HISTORY:
AFMC traces its heritage to 1917 when the U.S. Army Signal Corps established a headquarters for its new Airplane Engineering Department at McCook Field, Dayton, Ohio, a World War I experimental engineering facility that became the parent site for Wright-Patterson AFB.

Functionally divided during World War II, research/development and logistics were reunited for several years as the Air Material Command during the late 1940s. In 1950, the Air Research and Development Command became a separate organization devoted strictly to research and development.

In 1961, The Air Materiel Command was redesignated Air Force Logistics Command while Air Research and Development Command, gaining responsibility for weapon system acquisition, was redesignated Air Force Systems Command. The two commands were integrated to form Air Force Materiel Command July 1, 1992.

POINT OF CONTACT:
Air Force Materiel Command, Office of Public Affairs, Bldg 262, Wright-Patterson AFB, OH 45433-5001; (513) 257-6303.

AIR FORCE SPACE COMMAND

SERVICE: Air Force

NARRATIVE:
Air Force Space Command, with its headquarters at Peterson Air Force Base, Colo., is an Air Force major command and the Air Force component of U.S. Space Command. It was established Sept. 1, 1982.

MISSION:
The command provides ballistic missile warning, space control, satellite operations and spacelift, and assists in integrating space capabilities into Air Force operations.

As a component of U.S. Space Command, Air Force Space Command provides resources to accomplish combat missions of the U.S. Space Command. As an Air Force major command, Air Force Space Command organizes, trains, equips, sustains, and operates resources that include personnel, missile warning radar and infrared systems, space surveillance radar and optical systems, satellite command and control systems, and space launch resources.

ORGANIZATION:
Air Force Space Command operates eight bases and seven stations in the United States and overseas. The command is organized into four wings and more than 100 units. It also provides communications, computer and base support to North American Aerospace Defense Command at Cheyenne Mountain Air Force Base, near Colorado Springs, Colo. The command has approximately 16,000 Air Force military and civilian personnel, and more than 14,500 civilian contractors assigned to its worldwide units.

21st SPACE WING:
The 21st Space Wing, with its headquarters at Peterson Air Force Base, operates Air Force Space Command's worldwide network of missile warning sensors. The wing provides tactical warning and supports attack assessment of sea-launched and intercontinental ballistic missile attacks against the continental United States and Canada. The wing's resources include the space-based early warning system, phased-array radars, and some mechanical radars.

The wing is also the host for both Peterson and Cheyenne Mountain Air Force Bases. It provides support services for the two bases and also is responsible for such functions as personnel, finance, supply, and transportation for the 50th Space Wing at Falcon Air Force Base, Colo.

30th SPACE WING:
The 30th Space Wing at Vandenberg Air Force Base, Calif., manages testing of space and missile systems for DOD and launches expendable boosters for placing satellites into near-polar orbit from the West Coast of the United States. The wing launches Delta II, Atlas E, Titan II and IV, and a variety of other expendable boosters. It also operates the western missile range over the Pacific.

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45th SPACE WING:
The 45th Space Wing at Patrick Air Force Base, Fla., provides space launch and tracking facilities, safety procedures, and test data to a wide variety of users. It also provides launch operations and management of DOD space programs, as well as launch and tracking facilities for NASA, foreign governments, the European Space Agency and various private industry contractors. The wing launches a variety of expendable vehicles, including the Delta II, Atlas II and Titan IV, and provides support to the space shuttle program. It also operates Cape Canaveral Air Force Station, Fla., and the eastern missile range over the Atlantic.

50th SPACE WING:
The 50th Space Wing, with its headquarters at Falcon Air Force Base, Colo., commands and controls operational DOD satellites and manages the worldwide Air Force satellite control network. The wing's 750th Space Group at Onizuka Air Force Base, Calif., is responsible for the daily operation of the majority of the satellite control network.

The wing controls four types of satellites: the Defense Meteorological Satellite Program, Defense Support Program, and the Navstar Global Positioning System and communications satellites. Communication satellites include the Defense Satellite Communications System, NATO III, and Fleet Satellite Communications. Future communication satellites, such as Milstar, will be controlled by 50th Space Wing operators when the systems become operational.

73rd SPACE GROUP:
The 73rd Space Group, with headquarters at Falcon Air Force Base, operates space surveillance sites that detect, track and report on man-made objects in space. The sites instantly transfer surveillance data to the group's 1st Command and Control Squadron at Cheyenne Mountain Air Force Base. Members of the command and control squadron use the data to maintain a catalog that lists all man-made objects in orbit. North American Aerospace Defense Command and U.S. Space Command centers at Cheyenne Mountain Air Force Base also receive tracking data from the sites.

Members of the 73rd Space Group operate sensors that include electro-optical surveillance systems, mechanical and phased array radars, and passive radio frequency surveillance systems.

POINT OF CONTACT:
Air Force Space Command, Office of Public Affairs, 150 Vandenberg St, Suite 1105, Peterson AFB, CO 80914-4500; (719) 554-3731

AIR FORCE INTELLIGENCE COMMAND

SERVICE:
U.S. Air Force

MISSION:
AFIC's mission is to provide direct intelligence support to national decision-makers and field air component commanders. This support includes timely services, products and resources in the interrelated areas of intelligence, security, electronic combat, foreign technology and treaty monitoring. AFIC also gives combat commanders data which helps them decide when to exploit, jam, deceive or destroy hostile military communications to deny enemy commanders effective command and control of their forces.

The intelligence mission includes human, scientific, and technical intelligence support to the command's customers.

BACKGROUND:
The Air Force Intelligence Command, a major command with headquarters at Kelly Air Force Base, Texas, was activated Oct. 1, 1991. AFIC was formed by integrating the people and missions of the Electronic Security Command, the Foreign Technology Division (now the Foreign Aerospace Science and Technology Center), the Air Force Special Activities Center (now the 696th Intelligence Group), and elements of the Air Force Intelligence Agency.

ORGANIZATION:
AFIC is comprised of approximately 17,000 people worldwide. AFIC's special organizations and functions include:

FOREIGN AEROSPACE SCIENCE AND TECHNOLOGY CENTER:
The focal point for the scientific and technical intelligence mission is the Foreign Aerospace Science and Technology Center at Wright-Patterson AFB, Ohio. The center develops scientific and technical intelligence by analyzing all available data on foreign weapon systems to determine performance, capabilities, characteristics, and vulnerabilities. The center publishes studies on current aerospace capabilities and potential threats posed by possible adversaries.

AIR FORCE ELECTRONIC WARFARE CENTER:
AFEWC at Kelly Air Force Base provides electronic combat analysis and support to Air Force elements. Formed during the Vietnam War, the center is a primary source of electronic warfare and countermeasure analyses and advice for the Air Force.

The center maintains a massive database of electronic combat-related information used throughout the Department of Defense.

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AIR FORCE CRYPTOLOGIC SUPPORT CENTER:
AFCSC at Kelly Air Force Base is the Air Force's focal point for cryptologic matters. The center provides advice and technical assistance on cryptologic matters to AFIC, other Air Force major commands, combat commanders, the National Security Agency, and other national agencies.

696TH INTELLIGENCE GROUP:
The 696th Intelligence Group at Fort Belvoir, Va., conducts AFIC's human intelligence mission. HUMINT is a vital component of Air Force intelligence that involves interviews of people, complementing data collected by technical means.

In peacetime, the 696th collects foreign intelligence in support of Air Force, theater command, and national requirements. In times of war or military contingencies, the group provides direct HUMINT support by enemy prisoner-of-war interrogations, refugee and detainee debriefings, and exploitation of captured documents.

AFIC WINGS:
AFIC's four intelligence wings provide command and control to their subordinate units and intelligence liaison to major AF commands. The 26th Intelligence Wing at Ramstein Air Base, Germany, provides support to U.S. Air Forces in Europe; the 692nd Intelligency Wing at Hickam AFB, Hawaii, to Pacific Air Forces; the 693rd Intelligence Wing at Kelly AFB to those in the continental United States and Panama; and the 694th Intelligence Wing at Fort Meade, Md., to government elements in the Washington, D.C. area.

JOINT ELECTRONIC WARFARE CENTER:
AFIC provides support to the Joint Electronic Warfare Center, a Joint Chiefs of Staff organization collocated with Headquarters AFIC. The AFIC commander is also the Joint Electronic Warfare Center director.

POINT OF CONTACT:
HQ AFIC, Public Affairs Office, San Antonio, TX 78243-5000; (210) 977-21

DEPARTMENT OF DEFENSE
THE UNITED STATES FACT FILE

UNITED STATES AIR FORCE ACADEMY

SERVICE:
Air Force

NARRATIVE:
The United States Air Force Academy offers a four-year program of instruction and experience designed to provide its cadets the knowledge and character essential to leadership, and the motivation to serve as career officers in the U.S. Air Force. Each cadet graduates with a bachelor of science degree and a commission as a second lieutenant.

COURSE OF STUDY:
Cadets are exposed to a balanced curriculum that provides a general and professional foundation essential to a career Air Force officer. Special needs of future Air Force officers are met by professionally oriented courses, including human physiology, computer science, economics, military history, astronautics, law and political science.

The core curriculum includes courses in science, engineering, social sciences and the humanities. Cadets take additional elective courses to complete requirements for one of 25 major areas of study offered. About 60 percent of the cadets complete majors in science and engineering; the other 40 percent graduate in the social sciences and the humanities.

FACULTY COMPOSITION:
The majority of the academy's nearly 600 faculty members are Air Force officers. They are selected primarily from career officer volunteers who have established outstanding records of performance and dedication. Each has a master's degree and more than a third have doctorates.

In addition to imparting knowledge, each faculty member must assist with the development of character and leadership skills and the motivation of service to country. The academy also has several distinguished civilian professors and associate professors who serve for one or more years. Officers from other services are members of the faculty as well, as are a small number of officers from allied countries in the foreign languages, history and political science departments. Distinguished civilian and military lecturers also bring their expertise during the academic year.

ATHLETIC PROGRAM:
The academy's athletic program is designed to improve physical fitness, teach athletic skills and develop leadership qualities. To achieve its goals, the academy offers some of the most extensive physical education, intramural sports and intercollegiate athletic programs in the nation. Cadets take at least three different physical education courses each year.

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MILITARY EDUCATION, TRAINING:
An aerospace-oriented military education, training and leadership program begins with basic cadet training and continues throughout the four years. Seniors are responsible for the leadership of the cadet wing, while juniors and sophomores perform lower-level leadership and instructional tasks. Cadets are projected into as many active leadership roles as possible to prepare them to be effective Air Force officers.

Fundamental concepts of military organization—drill, ethics, honor, Air Force heritage and physical training—are emphasized the first summer during basic cadet training. Freshmen then study the military role in U.S. society as well as the mission and organization of the Air Force. Sophomores receive instruction in communicative skills and juniors study the combat and operational aspects of the Air Force. Military studies for the senior class focus on military thought.

The academy offers courses in flying, navigation, soaring and parachuting, building from basic skills to instructor duties. Cadets may fly light aircraft with the cadet aviation club. Those not qualified for flight training must enroll in a basic aviation course. Astronomy and advanced navigation courses also are available. Students bound for pilot training enroll in the pilot indoctrination course and fly the T-41 Mescalero.

Summer training for cadets is divided into three three-week training periods. There are a variety of programs available, and each cadet is required to complete two training periods each summer with leave during the third period.

All new cadets take six weeks of basic cadet training in their first summer.

Extracurricular activities are an integral part of the program. The cadet ski club, drum and bugle corps, cadet chorale and forensics are a few of the programs available.

APPOINTMENTS:
An appointment to the academy may be obtained through a congressional sponsor or by meeting eligibility criteria in other categories of competition established by law. For information on admission procedures, write to HQ USAFA/RRS, 2304 Cadet Drive, Suite 200, USAF Academy, CO 80840-5025.

HISTORY:
In 1948, a board of leading civilian and military educators was appointed to plan the curriculum for an academy to meet the needs of the newly established Air Force. The board determined that Air Force requirements could not be met by expanding the other service academies and recommended an Air Force academy be established without delay. On April 1, 1954, President Eisenhower authorized its creation.

In 1949, then Secretary of the Air Force Stuart Symington appointed a commission to select a site. From 580 sites in 45 states, the commission narrowed the choice to three locations. From these, Secretary of the Air Force Harold Talbott, in the summer of 1954, selected a site near Colorado Springs, Colo. The state of Colorado contributed $1 million toward purchase of the property.

In July 1955, the first academy class entered interim facilities on Lowry Air Force Base at Denver. Meanwhile, construction began at the site north of Colorado Springs. It was sufficiently completed for occupancy by the cadet wing in late August 1958. The Initial construction cost was $142 million.

Women entered the Air Force Academy on June 28, 1976, as members of the class of 1980.

POINT OF CONTACT:
USAFA, Office of Public Affairs, 2304 Cadet Dr., Suite 320, USAF Academy, CO 80840-5156; (719) 472-2990

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIR UNIVERSITY

SERVICE: Air Force

DESCRIPTION:
Air University is a major command with headquarters at Maxwell Air Force Base, Ala. It is the Air Force's center for professional military education.

MISSION:
Air University conducts professional military education, graduate education and continuing education for officers, enlisted personnel and civilians to prepare them for command, staff, leadership and management responsibilities.

Specialized and degree-granting programs provide education to meet Air Force requirements in scientific, technological, managerial and other professional areas. In addition, Air University is responsible for research in aerospace education, leadership and management.

ORGANIZATION:
Air University institutions at Maxwell AFB include: Air War College, Air Command and Staff College, Squadron Officer School, Center for Aerospace Doctrine Research and Education, Ira C. Eaker Center for Professional Development, Air Force Quality Center and the Fairchild Library. Air University also supports the Civil Air Patrol, an Air Force auxiliary. At the nearby Gunter Annex to Maxwell, Air University manages the Extension Course Institute and the Air Force Senior Noncommissioned Officer Academy. Another important part of Air University, the Air Force Institute of Technology, is at Wright-Patterson AFB, Ohio.

The Air War College, the Air Force's senior professional military education school, prepares selected colonels and lieutenant colonels for key command and staff assignments. The 10-month curriculum focuses on the study of military strategy, the employment of airpower and national security policy.

The Air Command and Staff College, a 10-month course, provides intermediate professional military education to prepare selected officers for command and staff responsibilities.

The curriculum includes command studies, combat support, space, nuclear and theater warfare, low intensity conflict, military history and doctrine, national security affairs, quality concepts, staff communications and the profession of arms. The School of Advanced Airpower Studies is an 11-month follow-on course.

Squadron Officer School is the first level in the professional military education of an Air Force officer. The school provides professional development for Air Force captains. The seven-week curriculum concentrates on officership, communication skills, leadership and force employment.

The Senior Noncommissioned Officer Academy is the highest level of professional military education for noncommissioned of-

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ficers. The seven-week curriculum is based on the concept that students already possess management and leadership experience. Independent analytical and creative thinking are encouraged throughout the course.

Major areas of study include military studies, leadership, management and communicative skills. In addition, an electives program allows students to select management subjects of special interest for in-depth study.

The Air Force Institute of Technology provides education and training to meet Air Force requirements in scientific, technological, managerial, medical and other fields as directed by Headquarters U.S. Air Force.

The Center for Aerospace Doctrine, Research and Education (CADRE) develops doctrine, concepts and strategy relating to airpower requirements. The center has five component organizations: Airpower Research Institute, Air Force Wargaming Center, Combat Employment Institute, Air University Press and the Senior Officer Directorate, which conducts the Joint Flag Officer Warfighting Course.

The Ira C. Eaker Center for Professional Development is home for nearly all of Air University's continuing military education programs. The center consists of eight schools: Air Force Judge Advocate General School, Professional Military Comptroller School, Technology Management School, Commanders' Professional Development School, Air Force Professional Manpower and Personnel Management School, Air Force Chaplain School, Academic Instructor School and International Officer School. In addition, the Center for Professional Development includes the Air Force Enlisted Professional Military Education Support Center and the Air Force Chaplain Resource Board. About 5,000 students a year attend one of the centers continuing education programs.

The Air Force Quality Center was established in 1991 to provide total quality management education for the Air Force.

The Fairchild Library is an integral part of the Air University educational system. The library's collections are comprehensive in their coverage of military affairs, international relations, aerospace operations, higher education, leadership and management and social sciences. Holdings include more than 380,000 books and bound periodical volumes, 512,000 military-specific documents and 850,000 maps and charts.

The Air University Board of Visitors examines the command's organization, management, policies, curriculum, methods of instruction and facilities. It also advises the secretary of the Air Force on matters of policy regarding the university's mission.

The Extension Course Institute is the Air Force correspondence school. Non-resident education and training opportunities are offered worldwide.

The institute's curriculum consists of more then 300 career development, professional military education and other specialized courses.

Institute courses receive credit recommendations from the American Council on Education. Total enrollment figures approach 250,000 students a year.

Headquarters Civil Air Patrol advises and assists the Civil Air Patrol, the congressionally chartered civilian auxiliary of the Air Force. Its three primary missions are aerospace education and training, cadet programs and emergency services. Civil Air Patrol flies anti-drug missions for the U.S. Customs Service., the Drug Enforcement Agency and the U.S. Forest Service.

HISTORY:

At the close of World War II, as plans were made to establish the Air Force as a separate service, officials recognized that continuing professional education would be as important to the new service's future as its inventory of weapons.

In 1946, educational pioneers made plans for a new professional military education system. They envisioned a centrally managed university complex with schools and colleges to meet a variety of needs. Today, Air University and its educational facilities stand as visible evidence of the soundness of their planning.

POINT OF CONTACT:

Air University, Office of Public Affairs, Building 18, Rm 24, Maxwell Air Force Base, Ala, 361125001; (205) 953-2014.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIR FORCE RESERVE OFFICER TRAINING

SERVICE: U.S. Air Force

NARRATIVE:
The Air Force Reserve Officer Training Corps is the largest and oldest source of commissioned officers for the Air Force. Air Force ROTC offers two educational programs -- Air Force Senior ROTC and Air Force Junior ROTC. As of January 1992, units were located at 147 colleges and universities throughout the U.S. and Puerto Rico. Students from schools near Air Force ROTC host institutions can attend classes through 687 separate cross-town enrollment programs or consortium agreements. Recent enrollments in Air Force ROTC college programs have ranged from a high of 22,067 in 1988 to an estimated low of 13,000 in 1992.

SENIOR ROTC PROGRAM:
The Air Force Senior ROTC Program is designed to recruit, educate and commission officer candidates at college and university campus programs. At each host institution, ROTC has the status of a separate academic department.

Two major routes to an Air Force commission are available to college students through Air Force Senior ROTC, the four-year program and the two-year program. A third route is a one-year program designed to meet Air Force needs in a few specializewd fields such as medicine and meteorology. Students enroll in Air Force ROTC classes at the same time and in the same manner as for other college courses.

The first two years of the four-year program are spent on general military studies and the last two on professional development. The two-year ROTC program covers the latter, as does the one-year program.

The duration of summer field training varies to meet the requirements of each program.

SPECIAL PROGRAMS:
Four Air Force ROTC programs provide cadets with specialized, off-campus learning experiences. These are summer field training encampments, the advanced training program, base visits and the flight screening program for cadets qualifying for flight training.

SCHOLARSHIPS:
Current emphasis in the Air Force ROTC college scholarship program (85 percent) is in engineering or other scientific and technical fields.

EXTRACURRICULAR ACTIVITIES:
Air Force ROTC cadets participate in a variety of extracurricular activities. Several units have special drill teams, color guards, honor guards, unit-sponsored intramural sports and social functions.

Angel Flight, an auxiliary organization

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of the Arnold Air Society, supports Air Force ROTC through activities and programs that publicize the local unit and university, the AFROTC program and the Air Force.

ENROLLMENT CRITERIA:
The first two years of the Air Force ROTC college program, the general military course, are open to all students who are at least 14 years old. Second-year scholarship cadets and all cadets entering the last two years of the college program, the professional officer course, must be at least 17 years old.

Cadets in the professional officer course and second-year scholarship cadets are contract cadets who agree to accept commissions as second lieutenants in the Air Force.

MEDICAL, LEGAL PROFESSIONS:
Nursing graduates agree to accept a commission in the Air Force nurse corps and serve four years on active duty after successfully completing their licensing examination.

Cadet premedical scholarship recipients who are accepted to medical school within a year of graduating become sponsored.

Second-year law students can pursue aommission through Air Force ROTC's graduate law program.

AIRMAN COMMISSIONING:
Air Force ROTC has two programs in which Air Force enlisted personnel may participate: the airman scholarship and commissioning program and the airman early release commissioning program.

The airman scholarship and commissioning program allows airmen to compete for Air Force ROTC two-, three- and four-year college scholarships.

The airman early release commissioning program is designed for airmen who will be less than 35 years old when commissioned. Applicants for this program must be able to complete requirements for a bachelor's degree within two academic years.

JUNIOR ROTC PROGRAM:
The Air Force Junior ROTC Program provides citizenship training and an aerospace science program at the high school level. Time spent in Air Force Junior ROTC may be applied toward the college-level Air Force ROTC, and Junior ROTC cadets who pursue college may receive special consideration for Air Force ROTC scholarships.

Cadets who complete three years in Air Force Junior ROTC and choose to enlist immediately after high school will be advanced two pay grades upon enlistment.

HISTORY:
ROTC was established with passage of the National Defense Act of 1916. The first Air ROTC units were established between 1920 and 1923 at land grant unicersities in California, Georgia Illinois, Massachusetts, Texas and Washington.

Immediately after World War II, General of the Army Dwight Eisenhower, then the Army Chief of Staff, signed a War Department order establishingd Air ROTC units at 78 colleges and universities throughout the nation. A new two-year senior program, scholarships and a junior program were authorized by the ROTC Vitalization Act of 1964. In 1978 the Air Training Command at Randolph Air Force Base, Texas, assumed responsibility for Air Force ROTC programs.

POINT OF CONTACT:
Air Force Reserve Officer Training Corps, Office of Public Affairs, Maxwell Air Force Base, AL 36112-6663; (205) 953-2825

For more information about Air Force ROTC programs and scholarship applications, write Air Force ROTC, Recruiting Division, Maxwell AFB, AL, 36112-6663.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIR FORCE RESERVE

SERVICE: Air Force

NARRATIVE:
The Air Force Reserve is a major component of the Air Force and a uniquely qualified and capable partner in the total force of the U. S. military.

MISSION:
The Air Force Reserve maintains more than 660 mission support units, trained and equipped to provide a wide range of services. Many of the units routinely train side by side with their active force counterparts.

ORGANIZATION:

HEADQUARTERS AIR FORCE RESERVE:
Headquarters Air Force Reserve at Robins Air Force Base, Ga., oversees the day-to-day mission activities of the Reserve and its subordinate units. It exercises command over three Reserve numbered air forces: 4th Air Force, McClellan AFB, Calif.; 10th Air Force, Bergstrom AFB, Texas; and 14th Air Force, Dobbins Air reserve Base, Ga.

AIR RESERVE PERSONNEL CENTER:
Air Reserve Personnel Center, a field operating agency at Denver, provides personnel services to all Air Force Reserve and Air National Guard members such as assignments, promotions, counseling, career development and separation actions).

RESERVE CATEGORIES:
Reservists are categorized by type of assignment, reserve status and military service obligation. Categories are ready reserve, standby reserve and retired reserve.

READY RESERVE:
The ready reserve is made up of about 170,000 trained reservists who are subject to recall to active duty in time of war or other national emergency. During Operation Desert Shield/ Desert Storm, President Bush recalled to active duty some 20,000 air reservists from 220 units. From August 1990 to April 1991, Reserve aircrews flew 235,000 hours, airlifted 418,000 tons of cargo, carried more than 300,000 passengers and delivered nearly 10 million gallons of fuel to aircraft.

The Ready Reserve has two programs -- Selected Reserve and Individual Ready Reserve. The Selected Reserve is made up of more than 83,000 reservists who train regularly in unit or individual programs and are paid for their training. The Individual Ready Reserve is made up of about 88,000 members who are subject to recall because of military service obligations. ARPC administers the Individual Ready Reserve.

STANDBY RESERVE:
The Standby Reserve includes members who have been designated as key civilian employees, or who have a temporary hardship or disability. Standby reservists are not required to train and are not assigned to

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units. There are approximately 15,000 reservists in this category.

RETIRED RESERVE:
The Retired Reserve includes officers and enlisted members who receive retired pay resulting from active duty or Reserve service. There are more than 615,000 members in the Retired Reserve. They are subject to recall in a national emergency.

TRAINING:
Selected reservists assigned to the Ready Reserve perform training through unit or individual training programs and must meet the same training and combat readiness standards as their active duty counterparts.

UNIT TRAINING PROGRAM:
About 70,000 Selected Ready Reserve members are assigned to specific Reserve units. Personnel who are part-time reservists as well as full-time civil service employees are called air reserve technicians or ARTs. These reservists are the backbone of the unit training program. During the week they work as civilian employees of their respective units, in uniform. ARTs provide for the day-to-day leadership, administration, training and logistics support of their units. During unit training periods or mobilizations, ARTs participate as reservists with the same units.

INDIVIDUAL TRAINING PROGRAM:
The Ready Reserve individual training program, with about 12,000 members, is large and versatile. Reservists in this program are called individual mobilization augmentees—or IMAs. These reservists are assigned to active duty organizations and train on an individual basis. Assigned throughout the Air Force, they work and train alongside their active duty counterparts to field specific wartime positions.

RESERVE ASSOCIATE PROGRAM:
Through the Reserve Associate Program, the Air Force Reserve provides trained aircrews and maintenance personnel for some 300 active duty aircraft. Reservists fly active duty C-5, C-141, C-9 Nightingale (aeromedical evacuation) and KC-10 Extender (refueling) aircraft.

ASSIGNED AIRCRAFT:
In more than 60 flying squadrons and 500 assigned aircraft, Reserve aircrews fly fighters, attack aircraft, helicopters, cargo lifters, gunships and tankers. On any given day, 99 percent of Air Force Reserve units are rated ready for combat. Of the Reserve's unit-owned aircraft and crews, in times of war or other special need, 70 percent would be gained by Air Mobility Command, and 25 percent (primarily fighter aircraft) would go to Air Combat Command. The remaining aircraft (approximately 20 helicopters and AC-130 gunships) would go to Air Force Special Operations Command.

EXERCISES:
An essential element of maintaining maximum combat readiness is the Air Force Reserve's participation in more than 60 exercises each year, during which they hone their skills in airlift, aerial refueling, advance support, airdrops, medical evacuations and fighter exercises.

Reservists participate in a variety of humanitarian missions within the United States and abroad. In recent years, Reserve aircrews have flown hundreds of humanitarian relief missions around the world. They frequently perform search and rescue missions over land and at sea, and have been credited with more than 500 "saves" in the last decade.

Reservists provide rescue support for Space Shuttle missions at Cape Canaveral, Fla., and fly into hurricanes to provide critical information on storms' locations and intensity.

At the request of local, state or federal agencies, Reserve aircrews help control insects, fight forest fires and participate in aerial support of counternarcotics efforts.

POINT OF CONTACT:
Air Force Reserve, Office of Public Affairs, 155 2nd Street, Robins AFB, GA 31098-1635; (912) 926-6721

AIR NATIONAL GUARD

SERVICE:
Air Force

NARRATIVE:
The Air National Guard (ANG) is administered by the National Guard Bureau, a joint bureau of the departments of the Army and Air Force in the Pentagon.

MISSION:
The ANG's mission, both state and federal, is to provide trained, well-equipped men and women who can augment the active force during national emergencies or war, and provide assistance during natural disasters and civil disturbances.

When Guard units are in a non-mobilized status they are commanded by the governors of their respective states, Puerto Rico, Guam and the Virgin Islands, or the commanding general of the D.C. National Guard. The governors (except in the District of Columbia) are represented in the chain of command by the adjutant generals of the states and territories.

STATE MISSION:
The ANG, under order of state authorities, provides protection of life and property, and preserves peace, order, and public safety. State missions, funded by the state, include disaster relief, search and rescue, protection of vital public services and support to civil authorities during disorder.

FEDERAL MISSION:
In the event of a national emergency or war, the ANG, as part of the total Air Force, provides operationally ready units and qualified personnel for active duty in the Air Force. To prepare for this mission, ANG units are assigned to Air Force major commands in peacetime. The commands monitor training standards and provide advisory assistance and evaluation.

PERSONNEL:
The primary full-time support for ANG units is provided by dual-status military technicians, plus a number of guardsmen on active duty. These people perform day-to-day administration and maintenance. Dual-status military technicians are federal civil service employees who also must be military members of the unit in which they are employed.

The active duty guardsmen serve under the command authority of the respective state and territorial governors and are not a part of regular Air Force manpower unless mobilized with their units.

The ANG has more than 118,000 officers and enlisted personnel who serve in 92 flying units and 281 independent mission support units.

FLYING UNITS:
Air National Guard aircrew fly most of the aircraft in the USAF inventory. Their missions and aircraft, include:

- Reconnaissance units, flying RF-4C Phantom II aircraft.

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- Airlift squadrons, C-130 Hercules, plus one C-5 Galaxy and two C-141 Starlifter; Ten aeromedical evacuation units also train on the C-130.
- Air support units: OA-10 Thunderbolt II.
- Fighter units: A-10 Thunderbolt, F-15 Eagle, F-16 Fighting Falcon, F-4G Wild Weasel (Phantom).
- Air refueling units, KC-135 Stratotankers.
- Rescue units, HC-130, HH-60 Black Hawk helicopter.
- Special operations unit, EC-130 aircraft.

The ANG provides 100 percent of the Air Force's air defense interceptor force and reconnaissance force. Other strength comparisons are:

ANG Flying Units	% of AF Strength
Tactical airlift	39
Rescue and recovery	32
Fighter aircraft	31
Tactical air support	31
Air refueling	28
Strategic airlift	7
Special operations	6
ANG Support Units	
Engineering installation	77
Air controllers	72
Combat communications	69
Aircraft control & warning	58
Civil engineering	27

SUPPORT UNITS:
Support units are essential to the Air Force mission. In the ANG they include air control units, combat communications squadrons, civil engineering (including engineering installation and heavy repair) squadrons, communication units, weather flights, aircraft control and warning squadrons, a range control squadron and an electronic security unit.

Medical units, located with parent flying organizations, provide health care for personnel during training periods.

TRAINING:
Training in the ANG is categorized into two general areas for officers and enlisted personnel—technical skills training and professional military education. Technical skills training enables individuals to perform in a particular specialty. Professional military education helps individuals develop supervisory and managerial skills.

Basic military training for ANG personnel is the same as for active Air Force members, conducted at Lackland AFB, Texas.

Guardsmen receive initial skill training equivalent to that prescribed for the active Air Force, at Air Force technical training centers. Prior-service enlistees also attend t technical training schools as needed.

EDUCATION:
ANG officers and airmen have opportunities to participate in the same professional military education as their active duty Air Force counterparts. Professional military education is also available at the I.G. Brown Air National Guard Professional Military Education Center at McGhee-Tyson Air National Guard Base near Knoxville, Tenn., and through correspondence courses and occasional on-base seminars.

POINT OF CONTACT:
National Guard Bureau, Office of Public Affairs, Pentagon Room 1D645, Washington DC 20310-2500; (202) 695-0421

TANKER AIRLIFT CONTROL ELEMENTS

SERVICE: Air Force

DESCRIPTION:
A Tanker Airlift Control Element is a command and control unit responsible for setting up and supervising air traffic and aerial port operations in forward areas and other sites where such functions do not exist. Tanker Airlift refers to the two missions of the TALCE parent unit, the Air Mobility Command.

AUTHORITY:
TALCEs are managed by and report to the Tanker Airlift Control Center, Air Mobility Command (AMC), Scott AFB, Ill.

ORGANIZATION:
Each TALCE is an original creation, made up by a careful selection of specialists in air mobility and tailored to fit the specific needs of a particular deployment. In addition to its command and communications people, a typical TALCE may include aerial port specialists for loading and unloading aircraft, ground controllers, maintenance teams, and weather, safety and other specialists.

On the average, AMC has about five TALCEs deployed to bare-base sites around the world at any given time. The size of each TALCE depends on its site and mission, and range from a low of 10 to 12 people to as many as 250 to 300.

When several TALCEs exist in one operational area, AMC may put together a headquarters unit, called an Air Mobility Element, to provide in-theater supervision of these dispersed units. In such an instance, the TALCEs report directly to the Air Mobility Element, which in turn reports to the control center at Scott AFB.

POINT OF CONTACT:
Air Mobility Command, Public Affairs Office, Bldg. 1905, Rm. 15, Scott Drive, Scott AFB, Ill. 62225-5317. Tel. (618) 256-4502.

UNITED STATES COAST GUARD

OVERVIEW:

The United States Coast Guard is a branch of the Department of Transportation, and in time of war, becomes a part of the Department of Defense and comes under the command of the U.S. Navy.

The Coast Guard consists of ships, aircraft, boats and shore stations that conduct a variety of missions, from search and rescue to environmental protection.

The Coast Guard operates in two district areas, the Atlantic and the Pacific. The Atlantic Area, located on Governor Island, New York, includes the First, Second, Fifth, Seventh, Eighth and Ninth Districts. The Pacific Area, located in Coast Guard Island, California, includes the Eleventh, Thirteenth, Fourteenth and Seventeenth Coast Guard Districts. Both the Atlantic and Pacific District Areas supervise missions which involve more than one of their districts.

MISSION:

The Coast Guard's organization is decentralized both administratively and operationally. This organization allows the Coast Guard to respond directly to its 12 defined mission and program areas. They are: aids to navigation, including maintaining lighthouses and buoys; boating safety; defense operations; security of U.S. ports during war; environmental response; ice operations; maritime law enforcement; marine inspection; marine licensing; marine science; port security and safety; search and rescue; and waterways management.

To accomplish these missions, the Coast Guard has approximately 38,000 active duty people, 11,000 selected reservists and 6,000 civilian employees. To assist the Coast Guard with its missions, Congress in 1939 established the Coast Guard Auxiliary, a volunteer civilian, non-military organization, to promote safety in recreational boating. The Coast Guard Auxiliary has approximately 35,000 members, experienced boaters, amateur radio operators and licensed aircraft pilots. Members, using their own facilities, are organized into small fleets throughout the United States.

POINT OF CONTACT:

U.S. Coast Guard, Commandant G-CP, Public Affairs, 2100 2nd St. SW, Washington DC; 20593; (202) 267-1933.

CHAPTER 2

Ships and Boats

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

DESTROYER TENDERS

SERVICE: Navy

DESCRIPTION:
Repair ships for battle damage

FEATURES:
Despite their title, destroyer tenders service a variety of ships besides destroyers. The Yellowstone, Gompers and Dixie class destroyer tenders can provide battle damage repair, maintenance and logistics support to ships at anchor or moored to a pier, in a wartime environment. The Gompers class can accommodate ships up to and including the highly complex nuclear-powered missile cruisers.

The crews are formed mainly of technicians and repair crews.

These Destroyer Tenders have a helicopter platform and hangar, and are equipped with two 30-ton and two 6½-ton cranes. They can provide simultaneous services to as many as five ships moored alongside.

BACKGROUND:
These ships, so vital to fleet operations, range in age from the Dixie-class ship Prairie (AD 15), commissioned in 1940, to the new Shenandoah (AD 44), commissioned in late 1983. Because of the advent of nuclear power and the phenomenal advances in electronics and weaponry, AD capabilities have had to be vastly increased. The Gompers and Yellowstone classes are the first of post-World War II design; however, more than 15 years elapsed between the launching of the second of the Gompers class, Puget Sound (AD 38), and Yellowstone (AD 41).

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

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GENERAL CHARACTERISTICS

Builders:	AD 37, 38, Puget Sound Naval Shipyard; AD 41-43, National Steel and Shipbuilding
Power plant:	Two boilers, steam turbines, one shaft, 20,000 shaft horsepower
Length:	645 feet (194 meters)
Beam:	85 feet (25.5 meters)
Displacement:	22,500 tons (202.5 metric tons) full load
Speed:	20 knots (23 miles, 36.8 km per hour)
Helicopter capability:	Landing platform only
Crew:	1,806
Armament:	Four 20 mm guns (AD 37 and AD 38) Two 20 mm guns (AD 41 through AD 44) Two 40 mm guns
Date deployed:	USS Yellowstone, May 31, 1980 USS Samuel Gompers, July 1, 1967
Units:	YELLOWSTONE CLASS: USS Yellowstone (AD 41); Norfolk, Va. USS Acadia (AD 42); San Diego, Calif. USS Cape Cod (AD 43); San Diego, Calif. USS Shenandoah (AD 44); Norfolk, Va. SAMUEL GOMPERS CLASS: USS Samuel Gompers (AD 37); Alameda, Calif. USS Puget Sound (AD 38); Norfolk, Va.

GENERAL CHARACTERISTICS, DIXIE CLASS

Builders:	AD 15, New York Shipbuilding; 18, 19, Tampa Shipbuilding
Power plant:	Four boilers, geared turbines, two shafts, 12,000 shaft horsepower
Length:	530 feet (159 meters)
Beam:	73 feet (21.9 meters)
Displacement:	18,000 tons (16,200 metric tons) full load
Speed:	18.2 knots (5.5 miles, 8.8 km, per hour)
Crew:	872 Officer:32 Enlisted:840
Armament:	Four 20 mm guns
Date deployed:	USS Prairie, Aug. 5, 1940
Units:	USS Prairie (AD 15); Long Beach, Calif. USS Sierra (AD 18); Charleston, S.C. USS Yosemite (AD 19); Mayport, Fla. (USS Dixie, AD 14, was decommissioned in 1992)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AMMUNITION SHIPS

SERVICE: Navy

DESCRIPTION:
Ammunition ships deliver munitions to warships.

FEATURES:
Ammunition ships keep the fleet supplied with ammunition and ordnance, independently or with other combat logistic ships.

Ammunition is delivered by slings on ship-to-ship cables, and by helicopter.

BACKGROUND:
The Navy now has two classes of ammunition ships: the Kilauea class and the Suribachi/Nitro class. Kilauea (T-AE 26) is the lead ship of the class and is operated by the Military Sealift Command.

POINT OF CONTACT:
Department of the Navy (OP-03PA); Washington, DC 20350-2000; (202) 694-6049

GENERAL CHARACTERISTICS, KILAUEA CLASS

Builders:	AE-26, 27, General Dynamics, Quincy Shipbuilding Division; AE-28, 29, Bethlehem Steel, Sparrows Point, Md.; AE-32 through AE-35, Ingalls Shipbuilding, Pascagoula, Miss.
Power plant:	Three boilers, geared turbines, one shaft, 22,000 shaft horsepower
Length:	564 feet (169.2 meters)

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Beam:	81 feet (24.3 meters)
Displacement:	Approximately 18,088 tons full load
Speed:	20 knots (23 meters)
Aircraft:	Two CH-46 Sea Knight helicopters
Units:	USS Butte (AE-27); Earle, NJ USS Santa Barbara (AE-28); Charleston, S.C. USS Mount Hood (AE-29); Concord, Calif. USS Flint (AE-32); Concord, Calif. USS Shasta (AE-33); Concord, Calif. USS Mount Baker (AE-34); Charleston, S.C. USS Kiska (AE-35); Concord, Calif.
Crew:	17 officers, 366 enlisted
Armament:	Two Phalanx close-in weapons systems
Date deployed:	14 December 1968 (USS Butte)

GENERAL CHARACTERISTICS, SURIBACHI CLASS, NITRO CLASS

Builders:	Bethlehem Steel, Sparrows Point, Md.
Power Plant:	Two boilers, geared turbines, one shaft, 16,000 shaft horsepower
Length:	512 feet (153.6 meters)
Beam:	72 feet (21.6 meters)
Displacement:	15,500 tons full load
Speed:	Approx. 20 knots (23 miles per hour)
Units:	SURIBACHI CLASS: USS Suribachi (AE-21); Earle, N.J. USS Mauna Kea (AE-22); Concord, Calif. NITRO CLASS: USS Nitro (AE-23); Earle, N.J. USS Pyro (AE-24); Concord, Calif. USS Haleakala (AE-25); Guam
Crew:	18 officers, 294 enlisted
Date deployed:	May 1, 1959 (USS Nitro) Nov. 17, 1956 (USS Suribachi)

COMBAT STORES SHIPS

SERVICE: Navy

DESCRIPTION:
Combat stores ships are the supply ships of the fleet.

FEATURES:
These ships support the fleet by providing refrigerated stores, dry provisions, technical spares, general stores, fleet freight, mail and personnel. They transfer cargo from ship to ship by tying up alongside or by helicopter.

BACKGROUND:
The seven Mars class combat stores ships are augmented by three stores ships

purchased from England. The Mars class stores ships were first deployed in 1963.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, MARS CLASS

Builder:	National Steel and Shipbuilding
Power plant:	Three boilers, steam turbines, one shaft, 22,000 shaft horsepower
Length:	581 feet (174.3 meters)
Beam:	79 feet (23.7 meters)
Displacement:	Approx. 16,000 tons (14,400 metric tons) full load
Speed:	20 knots (23 miles, 36.8 km per hour)
Aircraft:	Two UH-46 Sea Knight helicopters
Units:	USS Mars (AFS-1); Oakland, Calif. USS Sylvania (AFS-2); Norfolk, Va. USS Niagara Falls (AFS-3); Guam USS White Plains (AFS-4); Guam USS Concord (AFS-5); Norfolk, Va. USS San Diego (AFS-6); Norfolk, Va. USS San Jose (AFS-7); Guam
Crew:	25 officers, 403 enlisted
Armament:	Four three-inch/50-caliber guns, two Phalanx close-in weapons systems

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

FLEET OILERS

SERVICE: Navy

DESCRIPTION:
Oilers furnish fuel and petroleum products to the fleet at sea.

FEATURES:
The fleet oilers such as USS Platte, right, operate as a unit of an underway replenishment group, replenishing petroleum products to the fleet at sea. Oilers transport bulk petroleum and lubricants from depots to battle group station ships. They deliver petroleum and cargo to combatants and support forces by tying up alongside or by helicopter.

BACKGROUND:
The number of Navy-manned fleet oilers has diminished as more and more Military Sealift Command ships, all civilian manned, have assumed responsibilities for supplying ships of the fleet. The Navy has "jumboized" all five ships of the Cimarron class. The

AO Jumbo program is designed to increase the 120,000-barrel fuel capacity of these ships to 150,000 barrels and add the capability of carrying 600 tons of cargo ammunition.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, CIMARRON CLASS

Builder:	Avondale Shipyards
Power plant:	Two boilers, one steam turbine, one shaft, 24,000 shaft horsepower
Length:	708 feet (212.4 meters)
Beam:	88 feet (26.4 meters)
Displacement:	37,870 tons (34,083 metric tons) full load
Speed:	20 knots (23 miles, 36.8 km, per hour)
Cargo capacity:	180,000 barrels fuel
Aircraft:	None
Helicopter landing capability:	landing platform

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Units:	USS Cimarron (AO(J) 177); Pearl Harbor USS Monongahela (AO(J) 178); Norfolk, Va. USS Merrimack (AO(J) 179); Norfolk, Va. USS Willamette (AO(J) 180); Pearl Harbor USS Platte (AO(J) 186); Norfolk, Va.
Crew:	15 officers, 318 enlisted
Accomodations:	90 spare berths
Armament:	Two 20mm Phalanx close-in weapons systems (AO(J)179, 180, 186 only)
Date deployed:	January 10, 1981 (USS Cimarron)

GENERAL CHARACTERISTICS, ASHTABULA CLASS

Builder:	Bethlehem Steel, Sparrows Point, Md.
Power plant:	Steam turbine, four boilers, two shafts, 13,500 shaft horsepower
Length:	644 feet (193.2 meters)
Beam:	75 feet (22.5 meters)
Displacement:	34,750 tons full load
Speed:	18 knots (20.7 miles, 33.1 km, per hour)
Aircraft:	None
Helicopter landing capability:	Small landing platform
Units:	USS Caloosahatchee (AO-98); Norfolk, Va. USS Canisteo (AO-99); Norfolk, Va.
Armament:	Two 3-inch or .50-caliber anti-aircraft weapons

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

FAST COMBAT SUPPORT SHIPS

SERVICE: Navy

DESCRIPTION: High-speed vessel, designed as oiler, ammunition and supply ship.

FEATURES:
The fast combat support ship (AOE) is the Navy's largest combat logistics ship. The AOE has the speed and armament to keep up with the carrier battle groups. It rapidly replenishes Navy task forces and can carry more than 177,000 barrels of oil, 2,150 tons of ammunition, 500 tons of dry stores and 250 tons of refrigerated stores. It receives petroleum products, ammunition and stores from shuttle ships and redistributes these items simultaneously to carrier battle group ships. This reduces the vulnerability of serviced ships by reducing alongside time.

BACKGROUND:
In 1987, Congress appropriated the funds for the lead ship of the AOE 6 (Supply class). The Navy plans to provide a multiproduct station ship for every carrier battle group.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, SACRAMENTO CLASS

Builders:	AOE 1, 3, 4, Puget Sound Naval Shipyard; AOE 2, New York Shipbuilding
Unit cost:	$458-568 million
Power Plant:	Four boilers, geared turbines, two shafts, 100,000 shaft horsepower
Length:	793 feet (237.9 meters)
Beam:	107 feet (32.1 meters)
Displacement:	53,000 tons full load
Speed:	26 knots (30 miles, 48 km, per hour)
Aircraft:	Two CH-46 Sea Knight helicopters
Units:	USS Sacramento (AOE-1) and USS Camden (AOE 2), Bremerton, Wash.; USS Seattle (AOE 3) and USS Detroit (AOE 4); Earle, N.J.
Crew:	24 officers, 576 enlisted
Armament:	NATO Sea Sparrow missiles; two Phalanx close-in weapons systems to be upgraded
Date deployed:	March 14, 1964 (USS Sacramento) (AOE-1)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

REPLENISHMENT OILERS

SERVICE: Navy

DESCRIPTION:
Replenishment oilers deliver petroleum and munitions simultaneously to carrier battle groups using fuel hoses and helicopters.

FEATURES:
These petroleum-munitions underway-replenishment ships are smaller than the AOE class, but are still capable of multi-product delivery. They can carry 160,000 barrels of petroleum, 600 tons of munitions, 200 tons of dry stores and 100 tons of refrigerated stores. They also have highly automated cargo-handling equipment.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, WICHITA CLASS

Builders:	AOR-1 through 6, General Dynamics; AOR-7, National Steel and Shipbuilding
Unit cost:	$186-267 million
Power plant:	Three boilers, steam turbines, two shafts, 32,000 shaft horsepower
Length:	659 feet (197.7 meters)
Beam:	96 feet (28.8 meters)
Displacement:	38,100 tons full load
Speed:	20 knots (23 miles, 36.8 km, per hour)
Aircraft:	Two CH-46 Sea Knight helicopters
Units:	USS Wichita (AOR-1); Oakland, Calif. USS Milwaukee (AOR-2); Norfolk, Va. USS Kansas City (AOR-3); Oakland, Calif. USS Savannah (AOR-4); Norfolk, Va.

(more)

	USS Wabash (AOR-5); Long Beach, Calif. USS Kalamazoo (AOR-6); Norfolk, Va. USS Roanoke (AOR-7); Long Beach, Calif.
Crew:	24 officers, 448 enlisted
Armament:	Two Phalanx close-in weapons systems; Sea Sparrow missiles
Date deployed:	June 7, 1969 (USS Wichita)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

REPAIR SHIPS

SERVICE: Navy

DESCRIPTION:
Vulcan class repair ships, which provide battle damage repair, maintenance and logistics support to other ships, at anchor or moored.

BACKGROUND:
These ships are all of World War II vintage, funded and built under 1939 and 1940 congressional shipbuilding appropriations.

These ships repair battle damage in many ship systems and subsystems simultaneously and can be forward deployed in time of war.

POINT OF CONTACT:
Department of the Navy (OP-03PA); Washington, D.C. 20350-2000; (202) 694-6049

GENERAL CHARACTERISTICS

Builders:	AR-5, New York Shipbuilding; AR-6, 7 and 8, Los Angeles Shipbuilding and Drydock
Unit cost:	$256-396 million
Power plant:	Four boilers, steam turbines, two shafts, 11,000 shaft horsepower
Length:	529 feet (158.7 meters)
Beam:	73 feet (21.9 meters)
Displacement:	Approximately 16,270 tons full load
Speed:	19.2 knots (22.1 miles per hour)
Aircraft:	None
Units:	USS Jason (AR-8); San Diego, Calif.
Crew:	29 officers, 812 enlisted
Armament:	four 20mm guns

DEPARTMENT OF DEFENSE

THE UNITED STATES **FACT FILE**

RESCUE, SALVAGE AND TOWING SHIPS

Service: U.S. Navy

DESCRIPTION:
Rescue and salvage ships save battle-damaged combat ships from further damage and tow them to safety.

FEATURES:
Rescue, salvage and towing ships provide rapid firefighting, pumping, battle damage repair and rescue towing to warships in combat and tow them to repair ships or bases in safe areas.

BACKGROUND:
The Navy has responsibility for salvaging U.S. government-owned ships and, when it is in the best interests of the United States, privately owned vessels as well.

Currently 13 rescue and salvage ships are in service. The newest of these, the Safeguard ARS-50 class, were commissioned in 1984 and 1985.

POINT OF CONTACT:
Public Affairs Office, Naval Sea Systems Command (OOD); Washington, D.C. 20362; (703) 692-6920

GENERAL CHARACTERISTICS, SAFEGUARD CLASS

Primary Function:	Firefighting, combat salvage, rescue towing, diving
Builder:	Peterson Builders
Power Plant:	Diesels, two shafts, 4,200 horsepower
Length:	255 feet (77.7 meters)
Beam:	51 feet (15.5 meters)
Displacement:	3,200 tons (2,880 metric tons) full load
Speed:	14 knots (16.1 miles, 25.8 km, per hour)
Diving depth:	190 feet (57.9 meters), using air
Aircraft:	None
Units:	USS Safeguard (ARS-50), USS Salvor (ARS 52), Pearl Harbor, Hawaii USS Grasp (ARS 51), USS Grapple (ARS 53), Little Creek, Norfolk, Va.
Crew:	6 officers, 94 enlisted
Armament:	Two .50 cal. machine guns Two Mk-38 25mm guns
Date deployed:	Aug. 16, 1985

(more)

Current: April 1993

GENERAL CHARACTERISTICS, EDENTON CLASS

Primary function:	Manned diving operations
Builder:	Brooks Marine, Lowestoft, England
Power plant:	Four diesels, two shafts, 6,000 brake horsepower
Length:	282 feet (86 meters)
Beam:	50 feet (17.4 meters)
Displacement:	3,000 tons (2,700 metric tons) full load
Speed:	16 knots (18.4 miles, 29.4 km, per hour)
Diving depth:	300 feet (91.4 meters), using mixed gas
Aircraft:	None
Units:	USS Edenton (ATS 1), Little Creek, Norfolk, Va. USS Beaufort (ATS 2), USS Brunswick (ATS 3), Sasebo, Japan
Crew:	7 officers, 122 enlisted
Armament:	Two Mk-38 25mm guns
Date deployed:	Jan. 23, 1971

GENERAL CHARACTERISTICS, BOLSTER CLASS

Primary Function:	Firefighting, combat salvage, rescue towing, diving
Builder:	Basalt Rock Co.
Power Plant:	Diesel-electric, two shafts, 3,060 horsepower
Length:	213 feet (64.9 meters)
Beam:	44 feet (13.4 meters)
Displacement:	2,045 tons (1,840.5 metric tons) full load
Speed:	14.8 knots (17 miles, 27.2 km, per hour)
Diving depth:	190 feet (57.9 meters), using air
Aircraft:	None
Units:	USS Bolster (ARS 38), Long Beach, Calif. USS Conserver (ARS 39), USS Reclaimer, Pearl Harbor, Hawaii USS Hoist (ARS 40), USS Opportune (ARS 41), USS Recovery (ARS 43), Little Creek, Norfolk, Va. (Bolster and Recovery are Naval Reserve Force ships)
Crew:	6 officers, 97 enlisted
Armament:	Two 20mm guns
Date deployed:	May 1, 1945

SUBMARINE TENDER

SERVICE: Navy

DESCRIPTION:
Submarine Tenders furnish maintenance and logistic support for nuclear attack submarines.

BACKGROUND:
Along with destroyer tenders, submarine tenders are the largest of the active auxiliaries. Their crews are mainly technicians and repairmen.

The Emory S.Land and L.Y.Spear classes were designed and fitted to accommodate attack submarines, and can service four sub marines moored alongside simultaneously. USS Proteus was commissioned as a diesel sub tender in 1944 and overhauled and reconfigured in 1959-60 to service ballistic missile subs. In 1981, she became an attack submarine tender.

The Hunley and Simon Lake classes are configured especially to service ballistic missile submarines. USS Hunley has been converted to service attack submarines.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, L.Y. SPEAR and EMORY S. LAND CLASSES

Builders:	AS 36, 37, General Dynamics Quincy Shipbuilding Division; AS 39 through AS 41, Lockheed Shipbuilding
Power plant:	Two boilers, steam turbines, one shaft
Length:	644 feet (193.2 meters)
Beam:	85 feet (25.5 meters)
Displacement:	Approximately 23,000 tons (20,700 metric tons)
Speed:	20 knots (23 miles per hour)
Helicopter landing capability:	Landing platform only

(more)

Units:	L.Y. SPEAR CLASS (AS 36) UNITS USS L.Y. Spear (AS 36); Norfolk, Va. USS Dixon (AS 37); San Diego, Calif. EMORY S. LAND CLASS (AS 39) UNITS USS Emory S. Land (AS 39); Norfolk, Va. USS Frank Cable (AS 40); Charleston, S.C. USS McKee (AS 41); San Diego, Calif.
Crew:	AS 36: 81 officers, 1,252 enlisted AS 39: 97 officers, 1,266 enlisted
Armament:	Two 40mm guns, four 20mm guns
Date deployed:	Feb. 28, 1970 (USS L.Y. Spear) July 7, 1979 (USS Emory S. Land)

GENERAL CHARACTERISTICS, SIMON LAKE CLASS

Builders:	AS 33, Puget Sound Naval Shipyard; AS 34, Ingalls Shipbuilding
Power plant:	Two boilers, steam turbines, one shaft
Length:	644 feet (193.2 meters)
Beam:	85 feet (25.5 meters)
Displacement:	AS 33, 19,934 tons; AS 34, 21,089 tons
Speed:	20 knots (23 miles per hour)
Aircraft:	None
Helicopter landing capability:	Landing platform only
Units:	USS Simon Lake (AS 33); Norfolk, Va. USS Canopus (AS 34); Kings Bay, Ga.
Crew:	AS 33: 89 officers, 1,407 enlisted AS 34: 95 officers, 1,416 enlisted
Armament:	Four 20mm guns
Date deployed:	Nov. 7, 1964 (USS Simon Lake)

GENERAL CHARACTERISTICS, HUNLEY CLASS

Builders:	AS 31, Newport News Shipbuilding; AS 32, Ingalls Shipbuilding
Power plant:	Diesel electric, one shaft
Length:	599 feet (179.7 meters)
Beam:	83 feet (24.9 meters)
Displacement:	19,000 tons full load
Speed:	19 knots (22 miles per hour)
Aircraft:	None
Helicopter landing capability:	Landing platform only
Units:	USS Hunley (AS 31); Norfolk, VA USS Holland (AS 32); Guam
Crew:	AS 31: 87 officers, 1,227 enlisted AS 32: 93 officers, 1,330 enlisted
Armament:	Four 20mm guns
Date deployed:	16 June, 1962 (USS Hunley)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

SUBMARINE RESCUE SHIPS

SERVICE: Navy

DESCRIPTION:
Surface support ships for underwater rescue operations.

FEATURES:
ASR 21 class vehicles serve as surface support ships for deep submergence rescue vehicles (DSRV's) during submarine rescue operations. They conduct these operations using the McCann rescue chamber, and also support deep sea diving operations.

These ships can transport, service, lower and raise two Deep Submergence Rescue Vehicles and support diving operations to depths of 850 feet. They can support divers indefinitely, lowering them to the ocean floor in pressurized transfer chambers for open-sea work periods.

These vessels also serve as operational control ships to conduct deep-sea salvage operations.

No new ASRs are included in the Navy's long-range shipbuilding plans.

BACKGROUND:
The two Pigeon class ships are the first in the world to be built specifically for the submarine rescue mission and, except for one Military Sealift Command ship, are the first catamaran-hull ships built for the Navy since Robert Fulton's Demologos in 1812.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS

Builder:	Alabama Drydock and Shipbuilding
Power plant:	Four diesels, two shafts
Length:	251 feet (75.3 meters)
Beam:	86 feet (25.8 meters)
Displacement:	4,200 tons full load
Speed:	15 knots (15.3 miles per hour)
Aircraft:	None
Helicopter landing capability:	Landing platform only
Units:	USS Ortolan (ASR-22); Charleston, S.C.
Crew:	Ship's Company, 240; submersible operations: 24
Armament:	Two 20mm guns
Date deployed:	July 14, 1973 (USS Ortolan)

(more)

GENERAL CHARACTERISTICS

Class:	CHANTICLEER (ASR-9) CLASS
Builders:	ASR-9, Moore Shipbuilding and Drydock; ASR-13-15, Savannah Machine and Foundry
Power plant:	Diesel electric, one shaft
Length:	251 feet (75.3 meters)
Beam:	42 feet (12.6 meters)
Displacement:	2,320 tons (2088 metric tons) full load
Speed:	15 knots (17.3 miles, 27.7 km, per hour)
Aircraft:	None
Units:	USS Kittiwake (ASR 13); Norfolk, Va. USS Sunbird (ASR 15); Groton, Conn.
Crew:	7 officers, 96 enlisted
Armament:	Two 20mm guns
Date deployed:	July 18, 1946 (USS Kittiwake)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

AMPHIBIOUS ASSAULT SHIPS

SERVICE: Navy

DESCRIPTION:
Primary landing ships, resembling small aircraft carriers, designed to put troops on hostile shores.

FEATURES:
Modern U.S. Navy Amphibious Assault Ships are called upon to perform as primary landing ships for assault operations of Marine expeditionary units. These ships use Landing Craft Air Cushion (LCAC), conventional landing craft and helicopters to move Marine assault forces ashore.

In a secondary role using AV-8B Harrier aircraft and anti-submarine warfare helicopters, these ships perform sea control and limited power projection missions.

BACKGROUND:
Amphibious warships are uniquely designed to support assault from the sea against defended positions ashore. They must be able to sail in harm's way and provide a rapid build-up of combat power ashore in the face of opposition. The United States maintains the largest and most capable amphibious force in the world. Under the current building program, new ships will further enhance that capability.

USS Wasp (LHD-l) is the largest amphibious ship in the world. The lead ship was commissioned in July 1989 in Norfolk, Va. Construction of other ships of the class continues at Ingalls Shipbuilding, Pascagoula, Miss.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

(more)

GENERAL CHARACTERISTICS, WASP CLASS

Builder:	Ingalls Shipbuilding, Pascagoula, Miss.
Power plant:	Two boilers, two geared turbines, two shafts, 70,000 total shaft horsepower
Length:	844 feet (253.2 meters)
Beam:	106 feet (31.8 meters)
Displacement:	40,500 tons (36,450 metric tons) (full load)
Speed:	20+ knots (23+ miles, 36.8+ km, per hour)
Aircraft:	Assault: 42 CH-46 Sea Knight helicopters Sea Control: 20 AV-8B Harrier attack planes Six ASW helicopters
Units:	Norfolk: USS Wasp (LHD-1) San Diego: USS Essex (LHD-2) Under construction: USS Kearsarge (LHD-3) USS Boxer (LHD-4) USS Bataan (LHD-5) USS Bon Homme Richard (LHD-6)
Crew:	Ship's Company: 104 officers, 1,004 enlisted Marine detachment: 1,894
Armament:	Two 8 cell NATO Sea Sparrow launchers Three 20mm Phalanx CIWS Eight .50 cal machine guns
Date deployed:	July 29, 1989 (USS Wasp)

GENERAL CHARACTERISTICS, TARAWA CLASS

Builder:	Ingalls Shipbuilding, Pascagoula, Miss.
Power plant:	two boilers, two geared turbines, two shafts, 70,000 total shaft horsepower
Length:	833 feet (249.9 meters)
Beam:	106 feet (31.8 meters)
Displacement:	39,400 tons (35,460 metric tons) (full load)
Speed:	24 knots (27.6 meters)
Aircraft:	Nine CH-53 Sea Stallion helicopters; Twelve CH-46 Sea Knight helicopters; Six AV-8B Harrier V/STOL attack aircraft
Units:	Norfolk: USS Saipan (LHA 2) USS Nassau (LHA 4) San Diego: USS Tarawa (LHA 1) Sasebo, Japan: USS Belleau Wood (LHA 3) Long Beach, Calif.: USS Peleliu (LHA 5)
Crew:	Ship's company: 58 officers, 882 enlisted Marine detachment: 1,900-plus
Armament:	Two RAM Launchers (LHA 3,4,5) Three 5 inch / 54 cal. MK-45 lightweight guns; One 20mm Phalanx CIWS; Six 25mm Mk 38 guns
Date deployed:	May 29, 1976 (USS Tarawa)

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GENERAL CHARACTERISTICS, IWO JIMA CLASS

Builders:	LPH-2; Puget Sound Naval Shipyard, Bremerton, Wash. LPH-3, LPH-7, LPH-9, LPH-ll; Philadelphia Naval Shipyard, Philadelphia, Pa. LPH-lO, LPH-12; Ingalls Shipbuilding, Pascagoula, Miss.
Power plant:	2 - Boilers, 1 geared turbine; 1 shaft, 22,000 total shaft horsepower
Length:	602 feet (180.6 meters)
Flight deck width:	104 feet (31.2 meters)
Beam:	84 feet (25.2 meters)
Displacement:	18,000 tons (full load)
Speed:	23 knots (26.5 miles per hour)
Aircraft:	11 - CH 53 Sea Stallions; 20 - CH 46 Sea Knights
Units:	Norfolk: USS Iwo Jima (LPH 2); USS Guadalcanal (LPH 7); USS Guam (LPH 9); USS Inchon (LPH 12) San Diego: USS Tripoli (LPH 10); USS New Orleans (LPH 11); USS Inchon (LPH 12)
Crew:	Ship's company: 47 officers, 638 enlisted Marine detachment: 2,000
Armament:	Two 8-cell NATO Sea Sparrow launchers Four 3-inch / 50 cal. twin barrel guns Two 20mm Phalanx CIWS Date deployed: Aug. 26, 1961 (USS Iwo Jima)

BOATS

SERVICE: U.S. Coast Guard

DESCRIPTION:
Coast Guard boats are water craft less than 65 feet long.

FEATURES:
Boats enable the Coast Guard to perform missions such as rendering aid to people and property in distress at sea, protecting ports, waterways and shoreside facilities. Boats are also used to enforce federal laws on the high seas and waters under U.S. jurisdiction. The Coast Guard has approximately 2,000 boats in its inventory, divided into six classes: Aid to Navigation, Motor Life, Motor Surf, Ports and Waterways, Surf Rescue, and Utility.

Coast Guard boats operate mainly inshore and on inland U.S. waterways.

POINT OF CONTACT:
U. S. Coast Guard, Commandant G-CP, Public Affairs, 2100 2nd St SW; Washington D.C.; 20593; (202) 267-1933

GENERAL CHARACTERISTICS

Class:	Aids to Navigation Boats
Primary function:	Search and rescue, port security/safety training, aids to navigation
Cost:	45 feet: $132,000 (1959) 55 feet: $330,000 (1980)
Length:	45-55 feet (13.7 - 19.7 meters)
Maximum speed:	9-15 knots (10.4 - 17.3 mph)
Maximum range:	190-300 miles
Crew:	4-6

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GENERAL CHARACTERISTICS, MOTOR LIFE BOAT

Class:	Motor Life Boat
Primary function:	Search and rescue, port security/safety training, enforcement of laws and treaties
Cost:	$225,000 to $235,000
Length:	44 to 52 feet (13.3 to 15.8 meters)
Maximum speed:	11-14 knots (12.7 to 16.1 mph, 20.3 to 25.8 kmph)
Maximum range:	500 miles (800 km)
Crew:	Four (coxswain, engineer, two crewmen)

GENERAL CHARACTERISTICS, MOTOR SURF BOAT

Primary function:	Search and rescue, port security, safety training, law enforcement
Cost:	$16,300 (1967)
Length:	25 to 26 feet (7.6 to 7.9 meters)
Maximum speed:	24 knots (27.6 mph, 44.2 kmph)
Maximum range:	150 miles (240 km)
Crew:	Two

GENERAL CHARACTERISTICS, PORT AND WATERWAYS BOAT

Primary function:	Search and rescue, port security, safety training, law enforcement
Cost:	$102,000 (1978)
Length:	32 feet (9.7 meters)
Maximum speed:	20 knots (23 mph, 36.8 kmph)
Maximum range:	190 miles
Crew:	Three

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GENERAL CHARACTERISTICS, SURF RESCUE BOAT

Primary function:	Search and rescue, port security, safety training, law enforcement
Cost:	Not available
Length:	30 feet (9.1 meters)
Maximum speed:	31 knots (35.7 mph, 57.1 kmph)
Maximum range:	150 miles (240 km)
Crew:	Two (coxswain and crewmen)
Usage:	Surf rescue boats operate mostly inshore and on inland waters of the United States.

GENERAL CHARACTERISTICS, UTILITY BOAT

Primary function:	Search and rescue, port security and safety training, aids to navigation
Cost:	$235,000 (1979)
Length:	41 feet (12.4 meters)
Maximum speed:	22 knots (25.3 mph, 40.5 kmph)
Maximum range:	280 miles (448 km)
Armament:	Small arms
Crew:	Three (coxswain, engineer, crewman)
Usage:	Utility boats operate mostly inshore and on inland waters of the United States.

BUOY TENDERS

SERVICE: U.S. Coast Guard

DESCRIPTION:
Buoy tenders are inland and seagoing Coast Guard vessels responsible for maintaining short and long range aids to navigation such as lighthouses and buoys.

FEATURES:
Buoy tenders provide light icebreaking capability to federal and scientific organizations in ice laden polar and domestic waters. The coastal buoy tenders also provide assistance to people and property in distress on the high seas and in U.S. waterways. The Coast Guard uses three classes of inland buoy tenders, 65300 foot, 65400 foot, 100 foot and three classes of seagoing buoy tenders, 133 foot, 157 foot and 180 foot.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-P, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS, INLAND BUOY TENDER, 65300

Primary function:	Aid-to-navigation, search and rescue
Builder:	DuBuque Boat and Boiler Co.
Cost:	Not available
Length:	65 feet (19.7 meters)
Beam (width):	17 feet (5.2 meters)
Displacement:	68 tons
Power plant:	General Motors diesel
Maximum speed:	9 knots (10.4 mph)
Maximum range:	1500 miles
Armament:	Small arms
Crew:	13 enlisted
Inventory:	Two, Blackberry and Chokeberry, at Southport, N.C. and Chrisfield, Md.

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GENERAL CHARACTERISTICS, INLAND BUOY TENDER, 65400

Class:	Inland Buoy Tender, 65400
Primary function:	Aid to navigation, search and rescue
Builder:	Reliable Welding Works, Olympia, Wash.
Cost:	$150,000 (1954)
Length:	65 feet (19.7 meters)
Beam (width):	17 feet (5.2 meters)
Displacement:	82 tons (73.8 metric tons)
Power plant:	Two General Motors diesel engines, 600 shaft HP
Maximum speed:	10 knots (11.5 mph. 18.4 kmph)
Maximum range:	1,500 miles (2,400 km)
Armament:	Small arms
Crew:	13
Inventory:	Two: Bayberry and Elderberry, at Seattle, Wash., and Petersburg, Alaska.

GENERAL CHARACTERISTICS, INLAND BUOY TENDER, 100-FOOT

Primary function:	Aid-to-Navigation, ice operations, search and rescue
Builder:	Mobile Construction Co.
Length:	100 foot (30.3 meters)
Beam (width):	24 foot (7.3 meters)
Displacement:	200 tons (180 metric tons)
Power plant:	Two 353D Caterpillars 330 shaft HP
Maximum speed:	10 knots (11.5 mph, 18.4 kmph)
Maximum range:	2,200 to 2,500 miles (3,200 to 4,000 km)
Armament:	Small arms
Crew:	1 officer, 14 enlisted
Inventory:	Two: Bluebell and Buckthorn, at Sault Ste Marie, Mich., and Portland, Ore.

GENERAL CHARACTERISTICS, COASTAL BUOY TENDER, 133-FOOT

Primary function:	Aid-to-navigation, ice operations, search and rescue
Builder:	Erie Concrete & Steel Supply Co.
Length:	132 ft. 10 in. (40.1 meters)
Beam (width):	30 ft. (9.1 meters)
Displacement:	600 tons (540 metric tons)
Power plant:	Two 353 Caterpillar diesels, 1137 HP engine
Maximum speed:	10.5 knots (12.1 mph, 19.4 kmph)
Maximum range:	3,500 to 4,500 miles
Armament:	Small arms
Crew:	1 officer, 22 enlisted
Inventory:	Six: White Heath, Holly, Lupine, Pine, White Sage, Sumac

(more)

GENERAL CHARACTERISTICS, COASTAL BUOY TENDER, 157 FEET

Primary function:	Aid to navigation, ice operations, search and rescue
Builder:	Coast Guard Yard
Length:	157 ft. (47.6 meters)
Beam (width):	31 ft. (9.4 meters)
Displacement:	512 tons (461 metric tons)
Power plant:	Two Caterpillar diesels, 1800 HP engine
Maximum speed:	12.8 knots (14.7 mph, 23.5 kmph)
Maximum range:	3,500-4,500 miles
Armament:	50 caliber machine gun, small arms
Crew:	5 officers, 29 enlisted
Inventory:	Five, located at New London, Conn., and Governors Island, N.Y. They are: Red Beech, Birch, Red Cedar, Red Oak and Red Wood

GENERAL CHARACTERISTICS, 180-FOOT SEAGOING BUOY TENDER

Primary function:	Law enforcement, aid to navigation, ice operations, search and rescue
Builder:	Marine Iron and Shipbuilding Corp.
Cost:	$927,156 (1944)
Length:	180 feet (54.6 meters)
Beam:	37 feet (11.2 meters)
Displacement:	1,030 tons
Power plant:	Two D.C. diesel electric units driving a single 1,200 HP electric motor
Maximum speed:	13.7 knots (15.8 mph)
Maximum range:	13,500-31,000 miles
Armament:	50 caliber machine guns, small arms
Crew:	7 officers, 41 enlisted
Inventory:	26: Acacia, Basswood, Bittersweet, Blackhaw, Bramble, Conifer, Cowslip, Firebush, Gentian, Hornbeam, Iris, Ironwood, Laurel, Madrona, Mallow, Mariposa, Papaw, Planetree, Sassafras, Sedge, Sorrel, Spar, Sundew, Sweetbrier, Sweetgum and Woodrush

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

AIRCRAFT CARRIERS

SERVICE: Navy

DESCRIPTION:
Aircraft carriers are the Navy's airports at sea.

FEATURES:
The aircraft carrier continues to be the centerpiece of the forces necessary to execute the Maritime Strategy. Carriers support and operate aircraft that engage in attacks on airborne, afloat and ashore targets that threaten our use of the sea; and engage in sustained operations in support of other forces.

Aircraft carriers are deployed worldwide in support of U.S. iterests and commitments. They can respond to global crises in ways ranging from peacetime presence to full-scale war. Together with their on-board air wings, the carriers have vital roles across the full spectrum of conflict.

USS Forrestal has now replaced USS Lexington as the Navy's Training Aircraft Carrier (AVT). She is currently undergoing an extensive overhaul at Philadelphia Naval Shipyard. When repairs are complete, her home port will be at Pensacola, Fla., where student Naval aviators will be trained aboard her.

USS Constellation is undergoing an extended overhaul known as a SLEP (Service Life Extention Program) in Philadelphia. The SLEP adds 15 years of service to a conventional carrier. SLEP provides extended life and improvements in all areas from combat systems to engineering to berthing and living facilities and represents a significant cost savings to the navy for maintaining its carriers.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

(more)

GENERAL CHARACTERISTICS, NIMITZ CLASS

Builder:	Newport News Shipbuilding Co.
Power plant:	Two nuclear reactors, four geared steam turbines, four shafts
Length:	1,040 feet (317 meters)
Flight deck width:	252 feet (76.8 meters)
Beam:	134 feet (40.8 meters)
Displacement:	About 97,000 (87,300 metric tons) tons full load
Speed:	30+ knots (34.5 miles per hour)
Aircraft:	85 (See Carrier Air Wing listing)
Units:	Bremerton, Wash.: USS Nimitz (CVN-68) USS Carl Vinson (CVN-70) Norfolk: USS Dwight D. Eisenhower(CVN-69) USS Theodore Roosevelt (CVN-71) USS George Washington (CVN-73) Alameda, Calif.: USS Abraham Lincoln (CVN-72) USS John C. Stennis (CVN-74); Delivery 6/96 USS United States (CVN-75); Delivery 6/98
Crew:	Ship's company: 3,200 Air wing: 2,480
Armament:	Sea Sparrow missiles (four launchers) Phalanx close-in weapons systems (three on Nimitz and Eisenhower, four on Vinson and later ships of the class)
Machinery:	Four steam catapults
Date deployed:	May 3, 1975 (USS Nimitz)

GENERAL CHARACTERISTICS, ENTERPRISE CLASS

Builder:	Newport News Shipbuilding Co
Power plant:	Eight nuclear reactors, four geared steam turbines, four shafts
Length:	1,040 feet (317 meters)
Flight deck width:	252 feet (75.6 meters)
Beam:	133 feet (39.9 meters)
Displacement:	89,600 tons (80,640 metric tons) full load
Speed:	30+ knots (34.5 miles per hour)
Aircraft:	Approximately 85 (See Carrier Air Wing listing)
Units:	Norfolk, Va.: USS Enterprise (CVN-65)
Crew:	Ship's company: 3,350 Air wing: 2,480
Armament:	Sea Sparrow missiles, three Phalanx close-in weapons systems
Date deployed:	Nov. 25, 1961 (USS Enterprise)

(more)

GENERAL CHARACTERISTICS, JOHN F. KENNEDY CLASS

Builder:	Newport News Shipbuilding
Power plant:	Eight boilers, four geared steam turbines, four shafts, 280,000 SHP
Length:	1,052 feet (315.6 meters)
Flight deck width:	252 feet (76.8 meters)
Beam:	130 feet (39.6 meters)
Displacement:	82,000 tons full load
Speed:	30+ knots (34.5 miles per hour)
Aircraft:	Approximately 85 (See Carrier Air Wing listing)
Units:	Norfolk, Va: USS John F. Kennedy (CV-67)
Crew:	Ship's company: 3,117 Air wing: 2,480
Armament:	Sea Sparrow missiles, Three Phalanx close-in weapons systems
Date deployed:	Sept. 7, 1968

GENERAL CHARACTERISTICS, KITTY HAWK CLASS

Builder:	New York Shipbuilding; (CV 63) New York Naval Shipyard (CV 64) Newport News Shipbuilding; (CV 66)
Power plant:	Eight boilers, four geared steam turbines, four shafts,280,000 SHP
Length:	1,062.5 feet (323.8 meters)
Flight deck width:	252 feet (76.8 meters)
Beam:	130 feet (39 meters)
Displacement:	80,800 tons (72,720 metric tons) full load
Speed:	30+ knots (34.5 miles per hour)
Aircraft:	Approximately 85 (See Carrier Air Wing listing)
Units:	San Diego: USS Kitty Hawk (CV-63) USS Constellation (CV-64) Norfolk: USS America (CV-66)
Crew:	Ship's company 3,150 Air wing 2,480
Armament:	Sea Sparrow missiles, Three Phalanx close-in weapons systems
Date deployed:	April 29, 1961 (USS Kitty Hawk)

(more)

GENERAL CHARACTERISTICS, FORRESTAL CLASS

Builder:	Newport News Shipbuilding; AVT 59 & CV 61 New York Naval Shipyard; CV 60 & 62
Power plant:	Eight boilers (Forrestal's steam p.s.i. is approximately 50 percent lower than those of other ships in her class); four geared steam turbines, four shafts 280,000 shaft horsepower (260,000 for Forrestal)
Length:	1,063 to 1,086 feet (319 to 326 meters)
Flight deck width:	252 feet (76.8 meters)
Beam:	129 feet (39.3 meters)
Displacement:	75,900 to 79,300 tons full load
Speed:	30+ knots (34.5 miles per hour)
Aircraft:	Approximately 75 (See Carrier Air Wing Listing)
Units:	Pensacola, Fla: USS Forrestal (AVT-59) Mayport, Fla.: USS Saratoga (CV-60) San Diego: USS Ranger (CV-61) Yokosuka, Japan: USS Independence (CV-62) Japan
Crew:	Ship's company: 3,019 Air wing: 2,480
Armament:	Sea Sparrow missiles, Three Phalanx close-in weapons systems
Date deployed:	Oct. 1, 1955 (USS Forrestal)

INLAND CONSTRUCTION BUOY TENDER

SERVICE: U.S. Coast Guard

DESCRIPTION:
A platform from which shore structures such as piers and buoy trestles can be built and serviced.

FEATURES:
The Inland Construction Buoy Tender is a tender that pushes a construction barge, providing a platform for driving pilings, an equipment storage area and machine shops. This vessel is used also for maintaining lighthouses and buoys and conducting search and rescue missions. The Coast Guard uses three classes of Inland Construction Buoy Tenders, 75 foot, 100 foot and 160 foot.

POINT OF CONTACT:
U. S. Coast Guard, Commandant G-CP, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS, 75-FOOT TENDER

Primary function:	Aid to navigation
Builder:	Gibbs Shipyard
Cost:	Not available
Length:	75 feet (22.8 meters)
Beam (width):	22 feet (5.7 meters)
Displacement:	145 tons (232 metric tons)
Power plant:	Two Caterpillars diesel engines, 375 horsepower to each shaft
Maximum speed:	9.4 knots (10.8 mph)
Maximum range:	2,200-2,500 miles
Armament:	Small arms
Crew:	1 warrant officer, 13 enlisted
Inventory:	Nine: Anvil, Axe, Clamp, Hammer, Hatchet, Mallet, Sledge, Vise, Wedge

(more)

GENERAL CHARACTERISTICS, 100-FOOT TENDER

Primary function:	Aid to navigation
Builder:	Dubuque Boat and Boiler Works
Cost:	$194,238 (1944)
Length:	100 foot (30.3 meters)
Beam (width):	24 foot (7.3 meters)
Displacement:	178 tons (160.2 metric tons)
Power plant:	Two Caterpillars diesels, 375 horsepower to each shaft
Maximum speed:	10.5 knots (12.1 mph, 19.4 kmph)
Maximum range:	2,200-2,500 miles (3,520-4,000 km)
Armament:	Small arms
Crew:	1 warrant officer, 14 enlisted
Inventory:	Three: Primrose, Rambler, Smilax

GENERAL CHARACTERISTICS, 160-FOOT TENDER

Primary function:	Aid to navigation
Builder:	Coast Guard Yard
Cost:	$3,635,000 (1977)
Length:	160 feet (48.5 meters)
Beam (width):	30 feet (9.1 meters)
Displacement:	459 tons (413.1 metric tons)
Power plant:	Two D379 Caterpillars diesel engines, 500 shaft HP
Maximum speed:	11 knots (12.7 mph, 20.3 kmph)
Maximum range:	2,200-2,500 miles (3,520 km-4,000 km)
Armament:	Small arms
Crew:	1 officer, 13 enlisted
Inventory:	Four: Hudson, Kennebec, Pamlico, Saginaw

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

CUTTERS

SERVICE: U.S. Coast Guard

DESCRIPTION:
A cutter is any Coast Guard vessel 65 feet in length or more, which has living accommodations for its crew. The high and medium endurance cutters are used for conducting law enforcement and defense operations, marine science and search and rescue missions and coastal surveillance.

These vessels are equipped with advanced Navy equipment such as the Command Display and Control system, which collects,and displays data on ten display screens to monitor subjects being tracked, maneuver, avoid collisions, create search and rescue patterns and locate individuals in the water. This system is also used for navigation, piloting and internal communications.

Some cutters have helicopter flight decks. The Coast Guard uses eight classes of cutters: High Endurance Cutters, 378-foot class, Medium Endurance Cutters, 270 foot class, 230 foot class, 213 foot class, 210 foot class, 205 foot, 180 foot and the training cutter.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-CP, Public Affairs, 2100 2nd St. SW, Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS, 378-FOOT

Class:	High Endurance Cutter, 378-Foot
Primary function:	Law enforcement, defensive operations, search and rescue
Builder:	Avondale Shipyards, La.
Cost:	$14,069,680 (1970)
Length:	378 feet (114.7 meters)
Beam (width):	42 feet (12.74 meters)
Displacement:	3,050 tons (2,745 metric tons)
Power plant:	Two Fairbanks-Morse 38TD 81/8 diesels or 2 Pratt and Whitney FT4-A gas turbines Diesel 3,500 HP turbine 18,000
Maximum speed:	29 knots (33.4 mph, 53.4 kmph)
Maximum range:	14,000 miles (22,400 km)

(more)

Current: April 1993

Armament:	One Mk 92 fire control cystem One Mk 75 76mm/62 caliber gun mount system One Mk 15 close-in weapons system Two Mk 38 25mm machine guns Two M-2HB .50 caliber machine guns 17 cradles
Crew:	16 officers, 162 enlisted
Inventory:	12: Boutwell, Chase, Dallas, Gallatin, Hamilton, Jarvis, Mellon, Midgett, Morgenthau, Munro, Rush, Sherman

GENERAL CHARACTERISTICS, 270-FOOT

Class:	Medium Endurance Cutter, 270-Foot
Primary function:	Law enforcement, defensive operations, search and Rescue
Builder:	Tacoma Boatbuilding Co.
Cost:	$42 million (1981)
Length:	270 feet (81.9 meters)
Beam:	38 feet (11.5 meters)
Displacement:	1,850 tons (1,665 metric tons)
Power plant:	Two Alco diesels
Maximum speed:	19.5 knots (22.4 mph, 35.8 kmph)
Maximum range:	9,900 miles (15,840 km)
Armament:	One Mk 92 Fire Control System One Mk 75 76mm/62 caliber Gun Mount System 2 M-2HB .50 caliber machine guns
Crew:	13 officers, 96 enlisted
Inventory:	13: Bear, Tampa, Harriet Lane, Northland, Spencer, Seneca, Escanaba, Tahoma, Campbell, Thetis, Forward, Legare, Mohawk

GENERAL CHARACTERISTICS, 230-FOOT

Class:	Medium Endurance Cutter, 230-Foot
Primary function:	Law enforcement, defensive operations, search and Rescue
Builder:	Toledo Shipbuilding Co.
Cost:	$2,072,889 (1942)
Length:	230 feet (69.8 meters)
Beam (width):	43.2 feet (13.1 meters)
Displacement:	1,715 tons (1,543 metric tons)
Power plant:	One electric motor driven by three EMD 8-cylinder diesels
Maximum speed:	12.5 knots (14.4 mph)
Maximum range:	20,000 miles
Armament:	Mk 38 25mm Machinegun System M-2HB .50 caliber machine gun

(more)

Crew: 17 officers, 131 enlisted
Inventory: One: the Storis

GENERAL CHARACTERISTICS, 213-FOOT

Class: Medium Endurance Cutter, 213-Foot
Primary function: Law enforcement, defensive operations, search and rescue
Builder: Basalt Rock Co.
Length: 213 feet 6 inches (64.8 meters)
Beam (width): 40 feet 8 inches (12.4 meters)
Displacement: 1,756 tons (1,580.4 metric tons)
Power plant: Twin screw propelled by a four diesel electric system
Maximum speed: 14.4 knots (16.6 mph)
Maximum range: 20,000 miles (32,000 km)
Armament: M-2HB .50 caliber machine gun
Crew: 8 officers, 68 enlisted
Cost: Not available
Inventory: Three: Acushnet, Escape, Yocona, at Eureka, Calif., Charleston, S.C., and Kodiak, Alaska.

GENERAL CHARACTERISTICS, 210 FOOT

Class: Medium Endurance Cutter, 210-Foot
Primary function: Law enforcement, defensive operations, search and Rescue
Builder: Todd Shipyard
Cost: $4,920,804 (1962)
Length: 210 feet 6 inches (64 meters)
Beam (width): 34 feet (10.3 meters)
Displacement: 930 tons (837 metric tons)
Power plant: 2 Alco diesels, 5,000 HP
Maximum speed: 18 knots (20.7 mph)
Maximum range: 6,100 miles
Armament: Mk 38 25mm machine gun
M-2HB .50 caliber machine gun
Crew: 8 officers, 54 enlisted
Inventory: 16: Active, Alert, Confidence, Courageous, Dauntless, Decision, Dependable, Diligence, Durable, Reliance, Resolute,Steadfast, Valiant, Venturous, Vigilant, Vigorous

(more)

GENERAL CHARACTERISTICS, 205 FOOT

Class:	Medium Endurance Cutter, 205-Foot
Primary function:	Law enforcement, defensive operations, search and Rescue
Builder:	Commercial Iron Works
Cost:	Not available
Length:	205 feet 3 inches (62.3 meters)
Beam:	38 feet 7 inches (11.7 meters)
Displacement:	1,641 tons (1,477 metric tons)
Power plant:	Two Alco diesels
Maximum speed:	16 knots (18.4 mph, 29.4 kmph)
Maximum range:	15,000 miles (24,000 km)
Armament:	1 Mk 38 25mm machine gun system 2 M-HB .50 caliber machine guns
Crew:	8 officers, 68 enlisted
Inventory:	One: Tamaroa at New Castle, N.H.

GENERAL CHARACTERISTICS, 180-FOOT

Class:	Medium Endurance Cutter, 180-foot
Primary function:	Law enforcement, ice operations, search and rescue
Builder:	Marine Iron & Shipbuilding Corp
Cost:	$952,103 (1942)
Length:	180 feet (54.6 meters)
Beam (width):	37 feet 1 inch (11.3 meters)
Displacement:	1,026 tons (923.4 metric tons)
Power plant:	Electric motor connected to two Westinghouse generators driven by two Cooper-Bessemer-type GND-8,4-cycle diesels, 1,000 HP
Maximum speed:	11.9 knots (13.7 mph)
Maximum range:	7,980 miles (12,768 km)
Armament:	2 M-2HB .50 caliber machine gun
Crew:	Six officers, 47 enlisted
Inventory:	One: Citrus, Coos Bay, Ore.

GENERAL CHARACTERISTICS, TRAINING CUTTER

Primary function:	Training vessel for Coast Guard Academy cadets
Builder:	N/A
Length:	295 feet (39.5 meters)
Cost:	Not available
Beam:	39 feet 1 inch (11.9 meters)
Displacement:	1,816 tons
Power plant:	Caterpillar D399 Diesel Single Screw Three-masted sails
Maximum speed:	11-16 knots (12.65 - 18.4 mph)
Maximum range:	5,450 miles (8,720 km)
Armament:	None
Crew:	12 officers, 38 enlisted, 150 cadets
Inventory:	The Coast Guard's one 295-foot training cutter, the Eagle, berthed at the Coast Guard Academy, New London, Conn.

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

DRY CARGO SHIPS

SERVICE: Navy (Military Sealift Command)

DESCRIPTION:
Commercial dry cargo ships provide point-to-point transport of DOD equipment and supplies to U.S. military forces around the world.

BACKGROUND:
During peacetime, the Military Sealift Command transports more than 90 percent of DOD's dry cargo on regularly scheduled commercial ocean liners. However, for the more remote parts of the world not serviced by these liners, MSC charters some privately owned dry cargo ships from the U.S. merchant fleet. These ships are crewed by U.S. merchant mariners employed by commercial ship operating companies.

POINT OF CONTACT:
Department of the Navy, Military Sealift Command, Washington, D.C. 20398-5540; (202) 433-0330

ROLL ON/ROLL OFF (rolling stock cargo)
- MV American Eagle
- USNS Mercury (T-AKR 10)
- MV American Falcon
- MS Strong Texan
- MV American Condor

BREAKBULK (outsize, noncontainerized cargo)
- MV Green Ridge
- MS Green Wave
- MV Maersk Constellation
- SS Cleveland
- SS Tampa Bay
- SS Louise Lykes
- SS Sam Lykes
- SS Fred G.

COMBINATION
- SS Rover

MISCELLANEOUS CARGO HULLS
- MV Nicor Clipper
- MV Spring Buck
- Tug Ocean Prince

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

FAST SEALIFT SHIPS

SERVICE: Navy (Military Sealift Command)

DESCRIPTION:
Large, fast cargo vessels

FEATURES:
Fast sealift ships provide rapid surge shipping capability for bulky, oversized military equipment such as tanks, armored vehicles and helicopters needed overseas in time of war. All eight ships combined can carry the equivalent of a full Army mechanized division.

BACKGROUND:
Fast sealift ships are almost as large as aircraft carriers; yet can exceed 30 knots, making them among the fastest cargo ships in the world. These former commercial container ships were purchased in the 1980s and converted to include roll-on/roll-off ramps, additional lift capability and emergency helicopter landing pads.

These ships are berthed at East Coast and Gulf ports. All are normally kept in reduced operating status and can be activated and ready for loading in 96 hours.

The ships are crewed by U.S. merchant mariners employed by ship operating companies under contract to MSC.

POINT OF CONTACT:
Department of the Navy; Military Sealift Command; Washington, DC 20398-5540; (202) 433-0330

GENERAL CHARACTERISTICS

Builders:	T-AKR 287, 289, 293: Rotterdamsche D.D.Maatshapp NV Rotterdam, the Netherlands; T-AKR 288, 291: Rheinstahl Nordsweewerke, Emden, Germany T-AKR 290, 292, 294: A.G. Weser, Bremen, Germany
Conversion:	T-AKR 278-288, 292: National Steel and Shipbuilding, San Diego, Calif.; T-AKR 289, 293:Pennsylvania Shipbuilding Chester, Pa.; T-AKR 290-291, 294:Avondale Shipyards, New Orleans, La.
Power plant:	Two steam turbines, two boilers,two shafts, 120,000 shaft horsepower
Length:	946 feet (283.8 meters)
Beam:	106 feet (31.8 meters)

(more)

FAST SEALIFT SHIPS

Displacement:	61,500 tons (55,350 metric) tons full load
Speed:	30 knots (34.5 miles, 55.2 kg, per hour)
Aircraft:	Can accommodate helicopters in emergencies
Crew:	42 civilian mariners
Armament:	None
Units:	USNS Algol (T-AKR 287); USNS Bellatrix (T-AKR 288); USNS Denebola (T-AKR 289); USNS Pollux (T-AKR 290); USNS Altair (T-AKR 291); USNS Regulus (T-AKR 292); USNS Capella (T-AKR 293); USNS Antares (T-AKR 294)

SURFACE EFFECT SHIPS

SERVICE: Coast Guard

DESCRIPTION:
High-speed patrol craft

FEATURES:
The Coast Guard's Surface Effect Ships are a new concept in patrol craft. They are used primarily for law enforcement, especially drug and illegal migrant interdiction, marine environmental protection and search and rescue work.

The 39-foot beam of the SES provides an exceptionally stable platform in most seas conditions, while its maximum speed of more than 30 knots assures rapid response for rescue cases. pollution containmemt amd law enforcement. Its hull is welded marine aluminum. At lift speed a pressurized air cushion forms under the vessel, while the side walls pierce the water surface, forming a shallow-draft catamaran hull.

They are highly maneuverable even at low speeds, with an 1,800-hp deisel engine, propeller and rudder in each side hull.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-CP, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS

Primary function:	High-speed interdiction, search and rescue, environmental protection
Builders:	Bell Halter Inc., New Orleans
Cost:	Not available
Length:	109 feet ¾ inch
Beam:	39 feet (11.9 meters)
Displacement:	150 tons (135 metric tons)
Power plant:	Main: Two GM deisels, 1,800 hp Lift: Two 350 hp deisels, two 2-stage 40" diameter lift fans
Maximum speed:	30+ knots (33.3 mph, 53.3 kmph)
Cruising range:	1,100 nautical miles (1,222 miles, 1,955.5 km) at 25 knots
Armament:	Two M-2HB .50 caliber machine guns
Crew:	Two officers, 15 enlisted
Inventory:	Three: Sea Hawk, Shearwater, Petrel, all home port at Key West, Fla.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

PATROL HYDROFOIL MISSILE SHIPS

SERVICE: Navy

DESCRIPTION:
Hydrofoils are the Navy's fastest ships, with speeds in excess of 40 knots on the foils.

FEATURES:
The Pegasus class hydrofoils operate offensively against hostile surface combatants and other surface craft and conducts surveillance, screening and special operations.

They have good range on their diesels, excellent seakeeping qualities, and fast response to requirements for speed. They are available for a variety of missions, including involvement in the national drug interdiction program.

BACKGROUND:
The six Pegasus class PHMs form a single squadron, operating in the Atlantic and the Gulf of Mexico from Key West. Since 1983, they have accounted for 30 percent of all surface Navy-assisted drug seizures.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (00D); Washington, DC 20362; (703) 692-6920

(more)

GENERAL CHARACTERISTICS

Class:	PEGASUS (PHM 1) CLASS
Builder:	Boeing Marine Systems
Power Plant:	**Foilborne:**one gas turbine, 18,000 shaft horsepower, waterjet propulsion units **Hullborne:**two diesels, 1,600 brake horsepower, waterjet propulsion units
Length:	Foils extended, 133 feet (40.54 meters); Foils retracted, 145 feet (44.19 meters)
Beam:	28 feet (8.53 meters)
Displacement:	255 tons (229.5 metric tons) full load
Speed:	**Foilborne:**In excess of 40 knots (46 mph, 73.6 kmph) **Hullborne:**12 knots (13.8 mph, 22.08 kmph)
Units:	USS Pegasus (PHM 1); USS Hercules (PHM 2); USS Taurus (PHM 3); USS Aquila (PHM 4); USS Aries (PHM 5); USS Gemini (PHM 6); all berthed at Key West, Fla.
Ship's Company:	25 (5 officers, 20 enlisted)
Coast Guard Detachment (Law Enforcement Operations):	One officer, four enlisted
Armament:	Eight Harpoon missiles in two quad canister launchers; one 76mm gun
Date Deployed:	July 9, 1977 (USS Pegasus)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

ICEBREAKERS

SERVICE: U.S. Coast Guard

DESCRIPTION:
Heavy-prowed ships that plow and ram ice to keep shipping lanes open.

FEATURES:
Icebreakers keep the Great Lakes major shipping lanes open. These vessels are capable of breaking 20 inches of ice continuously and up to six feet by ramming. These vessels also conduct other Coast Guard-missions such as search and rescue missions, environmental protection and law enforcement.

The Coast Guard uses three classes of icebreakers, 65-foot, 140-foot and 299-foot.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-CP, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS, 65-FOOT HARBOR TUG

Primary function:	Ice operations, search and rescue, pollution response
Builders:	Gibbs Corp., Barbour Boat Works, Western Boatbuilding
Cost:	$158,366 (first six units 1962)
Length:	65 feet (19.7 meters)
Beam (width):	19 feet 7.5 inches (6 meters)
Displacement:	64 tons (57.6 metric tons)
Power plant:	One 400 HP diesel

(more)

Current: April 1993

Maximum speed:	10 knots (11.5 mph, 18.4 kmph)
Maximum range:	850-900 miles (1,360-1,440 km)
Armament:	Small arms
Crew:	Six
Inventory:	14: Bollard, Bridle, Capstan, Catenary, Chock, Cleat, Hawser, Line, Pendant, Shackle, Swivel, Tackle, Towline, Wire

GENERAL CHARACTERISTICS. 140-FOOT BAY CLASS

Primary function:	Ice operations, search and rescue, law enforcement aids to navigation
Builders:	Tacoma Boat Building Company, Tacoma, Wash.; Bay City Marine, Tacoma, Wash.; Bay City Marine, San Diego, Calif. Engines: Fairbanks Morse, Westinghouse
Cost:	$6,800,103 (1979)
Length:	Overall 140 feet (42.5 meters) Waterline 130 feet (39.4 meters)
Beam:	37 feet (7.4 meters)
Displacement:	662 tons (595.8 metric tons)
Power plant:	Diesel electric propulsion, 2,500 shaft HP, single shaft and rudder
Maximum speed:	14.7 knots (16.9 mph, 27 kmph)
Cruise speed:	12 knots (13.8 mph, 22.1 kmph)
Maximum range:	4,000 miles (6,400 km)
Icebreaking capability:	18-20 inches
Armament:	Small arms
Crew:	Three officers, 14 enlisted
Inventory:	Nine: Biscayne Bay, Bristol Bay, Katmai Bay, Mobile Bay, Morro Bay, Neah Bay, Penobscot, Thunder, Sturgeon

GENERAL CHARACTERISTICS, 290-FOOT CLASS

Primary function:	Ice operations, marine science expeditions, search and rescue
Cost:	$8,830,198 (hull & machinery 1944)
Length:	290 feet (38 meters)
Maximum speed:	18.7 knots (21.5 mph, 34.4 kmph)
Maximum range:	10,000 miles at maximum speed 41,000 miles at half speed
Armament:	Two M-2HB .50 caliber machine guns
Crew:	8 officers, 67 enlisted
Inventory:	One: the Mackinaw operates on the Great Lakes.

(more)

GENERAL CHARACTERISTICS, 399-FOOT CLASS

Primary function:	Ice operations, marine science expeditions, search and rescue. These are the largest ships operated by the Coast Guard
Cost:	$52,999,382 (1973)
Length:	399 feet (121.03 meters)
Maximum speed:	18 knots (20.7 mph)
Maximum range:	28,000 miles
Armament:	2 M-2HB .50 caliber machine guns
Crew:	14 officers, 125 enlisted
Inventory:	Two 399-foot Polar icebreakers operating in the Artic and Antarctic, Polar Sea and Polar Star

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

LANDING CRAFT AIR CUSHION (LCAC)

SERVICE: Navy

DESCRIPTION:
Hydrofoil craft for amphibious landing operations

FEATURES:
The landing craft air cushion (LCAC) is a fully amphibious air cushion vehicle capable of operating from existing and planned well deck ships. It can travel on water or land, and is used to transport weapons systems, equipment, cargo and personnel from ship to shore and across the beach.

The advantages of air-cushion landing craft are numerous. They can carry heavy payloads, including two M-1 tanks, at high speeds. Their payload and speed mean more forces reach the shore in a shorter time, with shorter intervals between trips. The air cushion allows this vehicle to reach more than 70 percent of the world's coastline, while conventional landing craft can land at only 15% of the coasts.

BACKGROUND:
Thirty-three air-cushion landing craft were authorized and appropriated through FY 86. An additional 15 were funded in FY89, 12 more in FY90 and FY91. The remaining 24 were funded in FY92.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

(more)

GENERAL CHARACTERISTICS

Class:	LCAC-1
Builder:	Textron Marine Systems/Avondale Gulfport Marine
Power plant:	Four Avco-Lycoming gas turbines rated at 3955 SHP max continuous; two shrouded reversible-pitch propellers; four 63 inch diameter double-entry fans
Length:	88 feet (26.4 meters)
Beam:	47 feet (14.1 meters)
Displacement:	151 tons 135.9 metric tons) full load
Range:	200 miles at 40 knots with payload
Speed:	40+ knots (46+ miles, 73.6 kg per hour) with payload
Load capacity:	60 tons/75 ton overload
Units:	53 units on line 31 under construction
Crew:	Five
Armament:	Gun mounts will support: M-2HB .50 cal machine gun MK-19 Mod3 40mm grenade launcher M-60 caliber machine gun
Date deployed:	1982

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

AMPHIBIOUS COMMAND SHIPS

SERVICE: Navy

DESCRIPTION:
Amphibious Command ships provide command and control in major amphibious operations.

FEATURES:
Fast (23-knot) vessels, larger than a cruiser, they are among the newest ships in the fleet.

BACKGROUND:
These are the only ships to be designed initially for an amphibious command ship role. Earlier amphibious command ships lacked sufficient speed to keep up with a 20-knot amphibious force. Subsequently, both ships became fleet flagships. USS Blue Ridge became the Seventh Fleet flagship in 1979, and USS Mount Whitney became the Second Fleet flagship in 1981.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS

Class:	BLUE RIDGE CLASS
Builders:	LCC 19 Philadelphia Shipyard; LCC 20 Newport News Shipbuilding and Drydock Co.
Power plant:	Two boilers, one geared turbine, one shaft; 22,000 horsepower
Length overall:	634 feet (190 meters)
Beam extreme:	108 feet (32 meters)
Displacement:	18,874 tons (16,987 metric tons)full load
Speed:	23 knots (26.5 miles, 42.4 km per hour)
Aircraft:	All helicopters except the CH-53 can be carried 53E
Units:	USS Blue Ridge (LCC-19); Yokosuka, Japan USS Mount Whitney (LCC-20); Norfolk, Va.
Crew:	52 officers, 790 enlisted
Date deployed:	14 November 1970 (USS Blue Ridge)

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

AMPHIBIOUS CARGO SHIPS

SERVICE: Navy

DESCRIPTION:
Cargo ships designed specifically to support amphibious landings.

FEATURES:
The amphibious cargo ships are the first class of ship designed specifically to carry troops, heavy equipment and supplies in support of amphibious assaults.

BACKGROUND:
Four of the five ships in the class had been transferred to the reserve fleet in the late 1970s and early 1980s. The need for additional sealift capacity resulted in all four being returned to the active fleet in 1982-1982. They are among the first Navy ships to have a fully automated main propulsion plant.

The lead ship of the class, USS Charleston (LKA-113) was decommissioned in 1992, and will be joined by USS Saint Louis (LKA-116) in FY-93. Both ships will be mothballed for possible activation in the future. The remaining ships will remain active through the end of their service life.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS

Class:	CHARLESTON (LKA-113) CLASS
Builder:	Newport News Shipbuilding
Power plant:	Two boilers, one steam turbine, one shaft 22,000 shaft horsepower
Length:	575 feet (172.5 meters)
Beam:	82 feet (24.6 meters)

(more)

AMPHIBIOUS CARGO SHIPS

Displacement:	18,657 tons (16,791 metric tons) full load
Speed:	20 knots (23 miles, 36.8 km, per hour)
Aircraft:	None
Units:	USS Durham (LKA-114); San Diego, Calif. USS Mobile (LKA-115); Long Beach, Calif. USS El Paso (LKA-117); Norfolk, Va.
Crew:	Ship's Company: 387 (30 officers, 357 enlisted) Troops: 226
Armament:	four 3-inch guns; two Phalanx close-in weapons systems
Date deployed:	Dec. 14, 1968 (USS Charleston)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AMPHIBIOUS TRANSPORT, DOCK

SERVICE: Navy

DESCRIPTION:
Troop transports for amphibious operations

FEATURES:
The amphibious transports are use to transport and land Marines, their equipment and supplies by embarked landing craft or amphibious vehicles augmented by helicopters in amphibious assault.

BACKGROUND:
These versatile ships replace amphibious transports, amphibious cargo ships and the older LSDs. Although their capabilities are less than those of the new LSD-41 class, the ships of the Austin class, built between 1965-1971, were considered sufficiently modern to have their service lives extended, and the Navy had planned to inaugurate an overhaul program for all 11 of them commencing in early 1988. Their modernization could have extended their service lives to 2005. However, Congress did not authorize funding for the program.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, AUSTIN CLASS

Builders:	LPDs 4-6, New York Naval Shipyard; LPD-7 and LPD-8, Ingalls Shipbuilding; LPD-9, 10, 12-15, Lockheed Shipbuilding
Unit cost:	$235-419 million
Power plant:	Two boilers, two steam turbines, two shafts, 24,000 shaft horsepower
Length:	570 feet (171 meters)
Beam:	84 feet (25.2 meters)
Displacement:	Approximately 17,000 tons (15,300 metric tons) full load
Speed:	21 knots (24.2 miles, 38.7 per hour)
Aircraft:	Up to six CH-46 Sea Knight helicopters
Units:	USS Austin (LPD-4); Norfolk, Va.; USS Ogden (LPD-5); Long Beach, Calif.; USS Duluth (LPD-6); Portland, Ore.; USS Cleveland (LPD-7); Long Beach, Calif.; USS Dubuque (LPD-8); Sasebo, Japan; USS Denver (LPD-9); San Diego,

Calif.; USS Juneau (LPD-10); San Diego, Calif.; USS Shreveport (LPD-12); Norfolk, Va.; USS Nashville (LPD-13); Norfolk, Va.; USS Trenton (LPD-14); Norfolk, Va.; USS Ponce (LPD-15); Norfolk, Va.

Crew: Ship's Company: 420 (24 officers, 396 enlisted)
Marine Detachment: 900

Armament: Two three-inch guns, being replaced with two MK 38 25mm guns, two Phalanx close-in weapons systems to be fitted

Date deployed: Feb. 6, 1965 (USS Austin)

DEPARTMENT OF DEFENSE

THE UNITED STATES **FACT FILE**

DOCK LANDING SHIPS

SERVICES: Navy, Marine Corps

DESCRIPTION:
Transport ships for amphibious craft, vehicles and troops

FEATURES:
Dock Landing Ships, such as the USS Tortuga, at right, support amphibious operations including landings via Landing Craft Air Cushion (LCAC), conventional landing craft and helicopters, onto hostile shores.

BACKGROUND:
These ships transport and launch amphibious craft and vehicles with their crews and embarked personnel in amphibious assault operations.

LSD-41 was designed specifically to operate LCAC vessels. It has the largest capacity for these landing craft (four) of any U.S. Navy amphibious platform. It will also provide docking and repair services for LCACs and for conventional landing craft.

The Whidbey Island class is intended to replace the older LSD-28 Thomaston class.

In 1987 the Navy requested $324.2 million to fund one LSD-41 (Cargo Variant). The ship will differ from the original LSD--41 by reducing its number of LCACs to two in favor of additional cargo capacity. Present procurement plans provide for the Navy to request one LSD-41(CV) per year through 2000 in order to continue to meet the amphibious lift requirement.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, HARPERS FERRY CLASS

Builders:	LSD 49 through 51; Avondale Industries, Inc. New Orleans, La.
Power plant:	Four Colt Industries, 16 cylinder diesels, two shafts, 33,000 shaft horsepower
Length:	609 feet (185.6 meters)
Beam:	84 feet
Displacement:	16,708 tons (15030 metric tons) full load
Speed:	20-plus knots (23+ miles, 36.8+ km per hour)
Landing craft:	Two Landing Craft, Air Cushion

(more)

DOCK LANDING SHIPS

Units (all under construction):	USS Harpers Ferry (LSD 49); San Diego, Calif. USS Carter Hall (LSD 50); Little Creek, Va. USS Oak Hill (LSD 51); Little Creek, Va.
Crew:	Ship's company: 22 officers, 397 enlisted Marine Detachment: 402 plus 102 surge
Armament:	Two 25mm machine guns; two 20mm Phalanx CIWS; six .50 caliber guns

GENERAL CHARACTERISTICS, WHIDBEY ISLAND CLASS

Builders:	LSD-41 - LSD-43; Lockheed Shipbuilding, Seattle, Wash.; LSD-44 through LSD-48; Avondale Shipyards, New Orleans, La.
Power plant:	Four Colt Industries 16 cylinder diesels, two shafts, 33,000 shaft horsepower
Length:	609 feet (185.6 meters)
Beam:	84 feet (25.6 meters)
Displacement:	15,939 tons (14,345 metric tons) full load
Speed:	20+ knots (23+ miles, 36.8+ km, per hour)
Landing Craft:	Four Landing Craft, Air Cushion
Aircraft:	None
Helicopter capability:	Landing area only
Units:	USS Whidbey Island (LSD 41); Little Creek, Va. USS Germantown (LSD 42); San Diego, Calif. USS Ft. McHenry (LSD 43); San Diego, Calif. USS Gunston Hall (LSD 44); Little Creek, Va. USS Comstock (LSD 45); San Diego, Calif. USS Tortuga (LSD 46); Little Creek, Va. USS Rushmore (LSD 47); San Diego, Calif. USS Ashland (LSD 48); Little Creek, Va.
Crew:	Ship's company: 22 officers, 391 enlisted Marine detachment: 402 plus 102 surge
Armament:	two 25mm machine guns; two 20mm Phalanx CIWS; six .50 caliber machine guns
Date deployed:	Feb. 9, 1985 (USS Whidbey Island)

GENERAL CHARACTERISTICS, ANCHORAGE CLASS

Builders:	LSD-36; Ingalls Shipbuilding, Pascagoula, Miss; LSD-37 through LSD-40; General Dynamics, Quincy, Mass:
Power plant:	Two 600 psi Boilers, two geared turbines, two shafts, 24,000 total shaft horsepower
Length:	553 feet (168.6 meters)
Beam:	85 feet (25.9 meters)
Displacement:	14,000 tons (12,600 metric tons) full load

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Speed:	22 knots (25.3 miles, 40.5 km, per hour)
Landing Craft:	Three Landing Craft Air Cushion or three Landing Craft Utility or nine Landing Craft Mechanized; or 52 amphibious tractors
Aircraft:	None
Helicopter capability:	Landing area only
Units:	USS Anchorage (LSD 36); San Diego, Calif. USS Portland (LSD 37); Little Creek, Va. USS Pensacola (LSD 38); Little Creek, Va. USS Mount Vernon (LSD 39); San Diego, Calif. USS Fort Fisher (LSD 40); San Diego, Calif.
Crew:	Ship's company: 18 officers, 340 enlsited Marine detachment: 330
Armament:	Four 3 inch MK 33 antiaircraft guns (two twin mounts); Two 20mm Phalanx CIWS
Date deployed:	March 15, 1969

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

TANK LANDING SHIPS

SERVICE: Navy

DESCRIPTION:
Tank landing ships (LST) are used to transport and land tanks, amphibious vehicles and other rolling stock in amphibious assault.

FEATURES:
Ships of this class are larger and faster than earlier LSTs and are the first to depart from the bow-door design that characterized the workhorses of World War II. The hull form necessary to attain the 20-knot speeds of contemporary amphibious squad- rons would not permit bow doors. Accordingly, ships of this class offload cargo and vehicles by means of a 112-foot ramp over their bow. A stern gate allows off-loading of amphibious vehicles directly into the water. The 19 ships of this class, all commissioned between June 1969 and August 1972, are the only LSTs remaining in the fleet.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

(more)

GENERAL CHARACTERISTICS, NEWPORT CLASS

Builders:	LSTs 1179-1181, Philadelphia Naval Shipyard; LTSs 1182-1198, National Steel and Shipbuilding
Power plant:	Six diesels, two shafts, 16,000 brake horsepower
Length:	522 feet (156.6 meters)
Beam:	69 feet (20.7 meters)
Displacement:	8,450 tons full load
Speed:	20 knots (23 miles per hour)
Aircraft:	None
Units:	USS Manitowac (LST-1180), USS Sumter (LST-1181), USS Saginaw (LST-1188), USS Boulder (LST-1190), USS Spartanburg County (LST-1192), USS Fairfax County (LST-1193), USS La Moure County (LST-1194), USS Harland County (LST-1196), USS Barnstable County (LST-1197), Little Creek, Norfolk, Va. USS Fresno (LST-1182), USS Cayuga (LST-1186), USS Racine (LST-1191) (NRF), USS Peoria (LST-1183), USS Frederick (LST-1184), USS Schenectady (LST-1185), USS Tuscaloosa (LST-1187), USS Barbour County (LST-1195), USS Bristol County (LST-1198); San Diego, Calif. USS San Bernardino (LST-1189); Sasebo, Japan (Boulder, Fresno and Racine are undergoing refit)
Crew:	13 officers, 244 enlisted
Armament:	Four three-inch guns, being replaced with two MK-38 25mm guns; Phalanx close-in weapons system
Date deployed:	June 7, 1969 (USS Newport)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

MINE COUNTERMEASURES SHIPS

SERVICE: Navy

DESCRIPTION:
Ships designed to clear mines from vital waterways.

BACKGROUND:
In the early 1980s, the U.S. Navy began development of a new mine countermeasures (MCM) force, which included two new classes of ships and minesweeping helicopters. The vital importance of a state-of-the art mine countermeasures force was strongly underscored in the Persian Gulf during the eight years of the Iran-Iraq war, and more recently in Operations Desert Shield and Desert Storm in 1990 and 1991 when the Avenger (MCM 1) and Guardian (MCM 5) ships conducted MCM operations.

Avenger class ships are designed as mine hunter-killers capable of finding, classifying and destroying moored and bottom mines. The last three MCM ships were purchased in 1990. A total of 14 fully deployable, ocean-going Avenger class ships are being constructed.

These ships use sonar and video systems, cable cutters and a mine detonating device that can be released and detonated by remote control. They are also capable of conventional sweeping measures.The ships are of fiberglass sheathed, wooden hull construction. They are the first large mine countermeasures ships built in the United States in nearly 27 years.

All MCM-1 class ships will be based in Ingleside, Texas.

Osprey (MHC 51) class ships are also designed as mine hunter-killers. The MHC 51 has a 15-day endurance and depends on a support ship or shore based facilities for resupply.

Acme class ships are approximately the same size as, though with improved capabilities over, the Agile and Aggressive classes.

Aggressive class ocean-going minesweepers were aactivated immediately after the Korean War. They can sweep for moored and bottom contact, magnetic and acoustic mines. One remains on active service and five others are assigned to the Naval Reserves.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (00D); Washington, DC 20362; (703) 692-6920

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GENERAL CHARACTERISTICS, AVENGER CLASS

Builders:	Peterson Shipbuilders, Sturgeon Bay, Wis.; Marinette Marine, Marinette, Wis.
Power Plant:	Four diesels (600 horsepower each), two shafts with controllable pitch propellers
Length:	224 feet (68.28 meters)
Beam:	39 feet (11.89 meters)
Displacement:	1,312 tons (1180.8 metric tons) full load
Speed:	14 knots (16.1 mph, 25.76 kmph)
Aircraft:	None
Units:	USS Avenger (MCM 1), USS Patriot (MCM 7); Charleston, S.C.; USS Defender (MCM 2), USS Sentry (MCM 3), USS Scout (MCM 8), USS Pioneer (MCM 9), USS Warrior (MCM 10); Ingleside, Texas; USS Champion (MCM 4); San Diego, Calif.; USS Guardian (MCM 5); Mayport, Fla.; USS Devastator (MCM 6); Newport R.I.; USS Patriot (MCM 7); Charleston, S.C.; USS Gladiator (MCM 11), USS Ardent (MCM 12), USS Dextrous (MCM 13), USS Chief (MCM 14), under construction.
Crew:	8 officers, 76 enlisted
Armament:	Mine neutralization system Two .50 cal. machine guns
Date Deployed:	Sept. 12, 1987 (USS Avenger)

GENERAL CHARACTERISTICS, OSPREY CLASS

Builder:	MHC 51, 52, and 55, 58, 59 and 60 Intermarine USA, Savannah, Ga. MHC 53, 54, 56, 57 Avondale Industries Inc., Gulfport, Miss.
Power Plant:	Two diesels (800 hp each); two Voith-Schneider (cycloidal) propulsion systems
Length:	188 feet (57.3 meters),
Beam:	36 feet (11 meters)
Displacement:	893 tons (804 metric tons)(full load)
Speed:	10 knots (18.4 kmph)
Aircraft:	None
Units:	USS Osprey (MHC 51), USS Pelican (MHC 53), USS Robin, MHC 54, USS Kingfisher (MHC 56), USS Cormorant (MHC-57), Ingleside, Texas; USS Heron (MHC 52), USS Oriole (MHC 55), Astoria, Ore.;MHC-58, 59, 60, 61, 62, all under construction or planned
Crew:	Five officers, 46 enlisted
Armament:	Two .50 cal. machine guns, Mine Neutralization System and other minecountermeasures systems
Date Deployed:	FY94

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GENERAL CHARACTERISTICS, ACME CLASS

Builders:	Frank L. Sample Jr., Boothbay Harbor, Maine
Power Plant:	Four diesels; 2,800 hp; 2 shafts with controllable pitch propellers
Length:	173 feet (52.7 meters)
Beam:	36 feet (11 meters)
Displacement:	818 tons (737 metric tons)(full load)
Speed:	14 knots (25.8 kmph)
Aircraft:	None
Units:	USS Affray (MSO 511); Newport, R.I.
Crew:	Five officers, 52 enlisted
Armament:	Two .50 cal twin machine guns

GENERAL CHARACTERISTICS, AGGRESSIVE CLASS

Power Plant:	Four diesels, 2,400 hp; two shafts with controllable pitch propellers
Length:	172 feet (52.4 meters)
Beam:	35 feet (10.7 meters)
Displacement:	853 tons (767.7 metric tons)(full load)
Speed:	13.5 knots (24.8 km)
Aircraft:	None
Units:	USS Exploit (MSO 440); USNR, Little Creek, Va.; USS Exultant (MSO 441); Charleston, S.C.; USS Implicit (MSO 455); USNR, Tacoma, Wash.; USS Conquest (MSO 488), USNR, USS Pledge (MSO 492), USNR; Seattle; USS Gallant (MSO 489) USNR; San Francisco.
Crew, Active Units:	7 officers, 70 enlisted
Crew, Reserve Force Units:	5 officers, 52 enlisted
Armament:	Two .50 cal. twin machine guns
Date Deployed:	Sept. 8, 1954 (USS Constant)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

MARITIME PREPOSITIONING SHIPS

SERVICE: Navy (Military Sealift Command)

DESCRIPTION:
Three Maritime Prepositioning Squadrons totaling 13 ships are strategically located around the world to provide surge shipping of U.S. Marine Corps supplies in the event of war or a contingency. Each squadron can carry all of the equipment and supplies, including fuel and water, to support a U.S. Marine Corps Expeditionary Brigade, totaling 16,500 troops, for 30 days.

BACKGROUND:
The MPS ships have proven valuable due to their short response time in a contingency. The ships are privately owned and under long term charter to Military Sealift Command. They are crewed by U.S. merchant mariners who are employed by ship operating companies under contract to Military Sealift Command. MPS Squadron One is

located in the western Atlantic; MPS Squadron Two is in the Indian Ocean at Diego Garcia; and MPS Squadron Three is in the western Pacific in the Guam/Saipan area.

POINT OF CONTACT:
Department of the Navy; Military Sealift Command; Washington, D.C. 20398-5540;-(202) 433-0330

GENERAL CHARACTERISTICS, CPL. LOUIS J. HAUGE JR. CLASS

Conversion:	Bethlehem Steel, Baltimore, Md. (3) and Beaumount, Texas (2)
Power plant:	Diesel
Length:	755 feet (226.5 meters)
Beam:	90 feet (27 meters)
Draft:	32 feet 10 inches (9.6 meters)
Displacement:	44,086 tons (39,674 metric tons)
Speed:	16.4 knots (18.9 miles, 30.24 km, per hour)
Endurance:	10,802 nautical miles (12,422 statute miles)
Aircraft:	None (helicopter landing capability)
Armament:	None

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Cargo: 1.3 million gallons (4,940 kiloliters) of bulk petroleum and other lubricants; 85,000 gallons (323 kiloliters) of water;equipment and vehicles, one fifth of a Marine expeditionary brigade
Crew: 27 civilian mariners
Units: MV Cpl. Louis J. Hauge Jr., MV Pfc. William B. Baugh, MV Pfc. James Anderson Jr.. MV 1st Lt. Alex Bonnyman, MV Pvt. Franklin J. Phillips

GENERAL CHARACTERISTICS, SGT. MATEJ KOCAK CLASS

Conversion: National Steel and Shipbuilding Co., San Diego, Calif.
Power plant: Seam turbine
Length: 821 feet (246.3 meters)
Beam: 105 feet 6 inches (31.7 meters)
Draft: 36 feet 6 inches (10.98 meters)
Displacement: 51,612 tons (46,451 metric tons)
Speed: 20 knots (23 miles, 36.8 km, per hour)
Endurance: 11,176 nautical miles (12,852 statute miles, 20,563 km)
Aircraft: None (helicopter landing capability)
Armament: None
Cargo: 1.5 million gallons (5,700 kiloleters) of petroleum and other lubricants; 91,938 gallons (349.4 kiloliters) of water; equipment and vehicles, one fourth of a Marine Corps expeditionary brigade
Crew: 29 civilian mariners
Units: SS Sgt. Matej Kocak, SS Pfc. Eugene A. Obregon, SS Maj. Stephen W. Pless

GENERAL CHARACTERISTICS, 2ND LT. JOHN P. BOBO CLASS

Builder: General Dynamics, Quincy, Mass.
Power plant: Diesel
Length: 673 feet (201.9 meters)
Beam: 105 feet 6 inches (31.7 meters)
Draft: 34 feet, 6 inches (10.4 meters)
Displacement: 46,111 tons (41,500 metric tons)
Speed: 17.7 knots (20.4 miles, 32.6 km, per hour)
Endurance: 11,107 nautical miles (12,773 statute miles, 20,437 km)
Aircraft: None (helicopter landing capability)
Armament: None

(more)

Cargo: 1.6 million gallons (6,080 kiloliters) of petroleum and other lubricants; 91,938 gallons (349.4 kiloliters) of water; equipment and vehicles, one fourth of a Marine Corps expeditionary brigade

Crew: 30 civilian mariners

Units: MV 2nd Lt. John P. Bobo, MV Pfc. DeWayne T. Williams, MV 1st Lt. Baldomero Lopez, MV 1st Lt. Jack Lummus, MV Sgt. William R. Button

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

NR-1 DEEP SUBMERGENCE CRAFT

SERVICE: Navy

DESCRIPTION:
A nuclear powered ocean engineering and research submarine.

FEATURES:
The NR-1 performs underwater search and recovery, oceanographic research missions and installation and maintenance of underwater equipment, to a depth of almost half a mile. Its features include extendable bottoming wheels, three viewing ports, exterior lighting and television and still cameras for color photographic studies, an object recovery claw, a manipulator that can be fitted with various gripping and cutting tools and a work basket that can be used in conjunction with the manipulator to deposit or recover items in the sea. Surface vision is provided through the use of a television periscope permanently installed on a mast in her sail area.

NR-1 has sophisticated electronics and computers that aid in navigation, communications, and object location and identification. It can maneuver or hold a steady position on or close to the seabed or underwater ridges, detect and identify objects at a considerable distance, and lift objects off the ocean floor.

NR-1 can travel submerged at approximately four knots for long periods, limited only by its supplies. It can study and map the ocean bottom, including temperature, currents, and other information for military, commercial, and scientific uses. Its nuclear propulsion provides independence from surface support ships and essentially unlimited endurance. NR-1 is generally towed to and from remote mission locations by an accompanying surface tender, which is also capable of conducting research in conjunction with the submarine.

BACKGROUND:
NR-1, the first deep submergence vessel using nuclear power, was launched at Groton on Jan. 25, 1969, and successfully completed her initial sea trials August 19, 1969. It maneuvers by four ducted thrusters, two

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in the front and two in the rear. The vehicle also has planes mounted on the sail, and a conventional rudder.

NR-1's missions have included search, object recovery, geological survey, oceanographic research, and installation and maintenance of underwater equipment. NR-1's unique capability to remain at one site and completely map or search an area with a high degree of accuracy has been a valuable asset on several occasions. Following the loss of the Space Shuttle Challenger in 1986, the NR-1 was used to search for, identify, and recover critical parts of the Challenger craft.

Because it can remain on the sea floor without resurfacing frequently, NR-1 was a major tool for searching deep waters. NR-1 remained submerged and on station even when heavy weather and rough seas hit the area and forced all other search and recovery ships into port.

Today, NR-1 continues to provide a valuable service to the Navy and many research and educational institutions.

POINT OF CONTACT:
Department of the Navy; Submarine NR-1; FPO AE 09587-3405; (203) 449-4161

GENERAL CHARACTERISTICS

Primary Function:	Deep submergence research and engineering vehicle
Hull Number:	NR-1
Class:	Unique
Builder:	General Dynamics (Electric Boat Division)
Power Plant:	One nuclear reactor, one turbo-alternator; Two motors (external), two propellers, Four ducted thrusters (two horizontal, two vertical)
Length:	150 feet (45.72 meters)
Displacement:	400 tons (360 metric tons)
Diameter:	12 feet (4.18 meters)
Maximum operating depth:	2,375 feet (724 meters)
Crew:	Two officer, three enlisted, two scientists
Armament:	None
Date Deployed:	Oct. 27, 1969

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

PATROL CRAFT

SERVICE: U.S. Coast Guard

DESCRIPTION:
Patrol craft are used by the Coast Guard in its efforts to stem the flow of illegal drugs into the United States.

FEATURES:
Patrol craft are primarily used for drug interdiction in South Florida and the Caribbean. These vessels are also used for search and rescue missions and defense operations. Patrol vessels are equipped with advanced electronics and communication equipment and satellite navigation equipment. The Coast Guard uses two classes of patrol craft, 82 foot and 110 foot.

POINT OF CONTACT:
U.S.Coast Guard, Commandant G-CP, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS, 110-FOOT ISLAND CLASS

Primary function:	Law enforcement, search and rescue,
Builders:	Bollinger Machine Shop and Shipyard, Lockport, La.
Cost:	Not available
Length:	Overall 110 feet (33.4 meters)
Beam:	21 feet (6.4 meters)
Displacement:	165 tons (148.5 metric tons)
Power plant:	Two RP2000M Paxman Valenta, 2,880 BHP each engine, 2 shaft in line
Maximum speed:	26+ knots (30+ mph, 48+ kmph)
Maximum range:	1,853 miles (2,965 kmph)
Armament:	1 Mk 38 25mm machine gun system 2 M-2HB 50 caliber machine gun
Crew:	two officers, 14 to 16 enlisted

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Background: Four Island Class patrol boats are assigned to Squadron One in Miami and five others to Squadron Two at Roosevelt Roads, Puerto Rico. They are grouped in squadrons to consolidate command and control, as well as maintenance and support functions. Five more patrol boats are stationed in the southeast U.S. and the Caribbean, as additional drug interdiction assets. The remaining patrol boats are being independently homeported as replacements for older patrol boats.

Inventory: 37. Farallon, Manitou, Matagorda, Maui, Monhegan, Nunivak, Ocracoke, Vashon, Aquidneck, Naushon, Sanibel, Mustang, Edisto, Sapelo, Matinicus, Nantucket, Attu, Baranof, Chandeleure, Chincoteague, Cushing, Cuttyhunk, Drummond, Largo, Metomkin, Monomoy, Orcas, Padre, Sitkinak, Tybee, Washington, Wrangell, Adak, Liberty, Anacapa, Kiska, Assateague

GENERAL CHARACTERISTICS, 82-FOOT POINT CLASS

Primary function: Law enforcement, search and rescue, defense operations
Cost: $7 million
Length: 82 feet. (24.9 meters)
Maximum speed: 20 knots (23 mph)
Maximum range: 490 miles (784 km)
Armament: Two M-2HB .50 caliber machine guns
Crew: 10. Twenty-nine patrol boats are commanded by officers. Twenty-two are commanded by "Officer-in-Charge", normally a chief petty officer.
Inventory: Thirty-nine patrol boats are being re-engined to increase their service life to 30 years.

The 43 Point Class patrol boats are Point Arena, Point Baker, Point Barnes, Point Batan, Point Bennett, Point Bonita, Point Bridge, Point Brower, Point Camden, Point Carrew, Point Chico, Point Countess Point Divide, Point Doran, Point Estero, Point Evans, Point Francis, Point Franklin, Point Glass, Point Hannon, Point Harris, Point Heyer, Point Highland, Point Hobart, Point Huron, Point Jackson, Point Ledge, Point Lobos, Point Lookout, Point Martin, Point Monroe, Point Nowell, Point Richmond, Point Sal, Point Spencer, Point Steele, Point Stuart, Point Swift, Point Turner, Point Warde, Point Wells, Point Whitehorn, Point Winslow

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

RIVERINE ASSAULT CRAFT

SERVICE: Marine Corps

DESCRIPTION:
35 foot shallow draft patrol boat

MISSION:
Marine Corps Riverine Assualt Craft can be used for armed escort, command, control, and communications, transport, armed reconnaissance and pursuit.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Inland and coastal waterway patrol craft
Unit cost:	$321,000
Length:	35 feet (10.66 meters)
Beam:	9 feet, 2 inches (2.79 meters)
Draft:	2'2" (8" on plane) (66.04cm)
Displacement, empty:	13,600 pounds (6,174kg)
Displacement full load:	16,400 pounds (7,455 kg)
Top speed:	37.4 knots (43 miles/68.8 km per hour)
Cruising speed:	27 knots (31 miles/49.6 km per hour)
Range:	400 miles (640 km)
Power:	Twin 300hp Cummins diesel engines driving Hamilton 271 waterjets.
Crew:	four to five
Inventory:	Seven
Troop Lift:	Combat loaded Marine rifle squad
Communications:	Military HF/VHF/UHF, marine band transceiver
Armament:	Fore and aft gun tubs capable of mounting 7.62mm, .50cal or 40mm automatic weapons. Port and starboard pintle mounts for 7.62mm machine guns.
Transportability:	CH-53 (sling), C-130, C-141, C-5A, M-923 5-ton flatbed truck.

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

FLEET BALLISTIC MISSILE SUBMARINES

SERVICE: U.S. Navy

DESCRIPTION:
Nuclear-powered submarines armed with long-range nuclear missiles.

BACKGROUND:
Deterrence of nuclear war has been the sole mission of the fleet ballistic missile submarine (SSBN) since its inception in 1960. The SSBN provides the nation's most survivable and enduring nuclear strike capability.

The Trident submarine replaces aging fleet ballistic missile submarines built in the 1960s. Each Trident submarine is far more capable than the Poseidon submarine it replaces, in number of missiles carried and destructive capability. Deployment with Trident I missiles has enhanced survivability of the Poseidon submarines. The increased range of the Trident I missile provides the Poseidon submarines with a larger operating area and allows them to cover targets shortly after leaving U.S. ports. Poseidon submarines will will be retired and replaced by the Trident submarines in the 1990s.

The Navy plans to build one Trident submarine per year, achieving a force level of eighteen.

FEATURES:
The first eight Ohio class submarines (Trident) carry 24 Trident I C-4 ballistic missiles. Beginning with the ninth Trident submarine, Tennessee (SSBN 734), all new ships will be equipped with the Trident II missile system as they are built.

Trident II can deliver significantly more payload than Trident I, and more accurately.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (00D); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, OHIO CLASS

Builder:	General Dynamics, Electric Boat Division
Power Plant:	One nuclear reactor, two geared turbines, one shaft
Length:	560 feet (170.69 meters)
Beam:	42 feet (12.8 meters)

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BALLISTIC MISSILE SUBMARINES

Displacement:	18,700 tons(16,830 metric tons) submerged
Speed:	In excess of 20 knots (23 mph, 36.8 kmph)
Units:	USS Ohio (SSBN 726), USS Michigan (SSBN 727), USS Florida (SSBN 728), USS Georgia (SSBN 729), USS Henry M. Jackson (SSBN 730), USS Alabama (SSBN 731), USS Alaska (SSBN 732), USS Nevada (SSBN 733); Bangor, Wash.; USS Tennessee (SSBN 734), USS Pennsylvania (SSBN 735), USS West Virginia (SSBN 736), USS Kentucky (SSBN 737), USS Maryland (SSBN-738), King's Bay, Ga.
Crew:	15 officers, 140 enlisted
Armament:	**Main:**24 tubes for Trident I and II missiles **Secondary:**Four torpedo tubes for MK-48 Torpedo
Date Deployed:	Nov. 11, 1981 (USS Ohio)

GENERAL CHARACTERISTICS
BENJAMIN FRANKLIN, LAFAYETTE & MADISON CLASSES

Builder:	General Dynamics, Electric Boat Division; Mare Island Naval Shipyard, Newport News Shipbuilding
Power Plant:	One nuclear reactor, two geared turbines, one shaft
Length:	425 feet (129.54 meters)
Beam:	33 feet (10.06 meters)
Displacement:	8,250 tons (7425 metric tons) submerged
Speed:	In excess of 20 knots (23 mph, 36.8 kmph)
Units:	**BENJAMIN FRANKLIN CLASS** USS Benjamin Franklin (SSBN 640), USS Simon Bolivar (SSBN 641) USS George Bancroft (SSBN 643), USS Francis Scott Key (SSBN 657) USS Mariano G. Vallejo (SSBN 658) **LAFAYETTE CLASS** USS Woodrow Wilson (SSBN 624) **JAMES MADISON CLASS** USS Tecumseh (SSBN 628), USS Daniel Boone (SSBN 629), USS John C. Calhoun (SSBN 630), USS Von Steuben (SSBN 632); USS Casimir Pulaski (SSBN 633) USS Stonewall Jackson (SSBN 634); all based at Charleston, S.C.
Crew:	13 officers, 130 enlisted
Armament:	**Main:** 16 tubes for Poseidon or Trident I missiles **Secondary:** Four torpedo tubes for MK-48 torpedoes
Date Deployed:	Oct. 22, 1965 (USS Benjamin Franklin)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

ATTACK SUBMARINE

SERVICE: Navy

DESCRIPTION:
Hunter-killer submarine, designed to seek and destroy enemy submarines and surface ships.

BACKGROUND:
The concept of technical superiority over numerical superiority was and still is the driving force in American submarine development.

A number of third world countries are acquiring modern, state-of-the-art non-nuclear submarines. Countering this threat is the primary mission of U.S. nuclear attack submarines. Their other missions range from intelligence collection and special forces delivery to anti-ship and strike warfare.

The Navy began construction of Seawolf SSN 21 class submarines in 1989. Seawolf is designed to be exceptionally quiet, fast and well-armed with advanced sensors. It is a multi-mission vessel, capable of deploying to forward ocean areas to search out and destroy enemy submarines and surface ships and to fire missiles in support of other forces. It is scheduled to be operational in the mid-1990s.

The SSN 688 class submarine construction program consists of 62 authorized ships, 50 of which have been delivered.

Tomahawk cruise missile capability has been authorized for SSN 719 and beyond. Tomahawk launches from attack submarines were successfully conducted during Operation Desert Storm.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (00D); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, LOS ANGELES CLASS

Builders:	Newport News Shipbuilding; General Dynamics, Electric Boat Division
Power Plant:	One nuclear reactor, two geared turbines, one shaft
Length:	360 feet (109.73 meters)
Beam:	33 feet (10.06 meters)
Displacement:	6,900 tons (6210 metric tons) submerged
Speed:	20-plus knots (23 mph, 36.8 kmph)

(more)

Current: April 1993

Units: USS Los Angeles (SSN 688), USS Omaha (SSN 692), USS Birmingham (SSN 695), USS New York City (SSN 696), USS Indianapolis (SSN 697), USS Bremerton (SSN 698), USS San Francisco (SSN 711), USS Buffalo (SSN 715), USS Olympia (SSN 717), USS Honolulu (SSN 718), USS Helena (SSN 725), Pearl Harbor, Hawaii.

USS Baton Rouge (SSN 689), USS Memphis (SSN 691), USS Cincinnati (SSN 693), USS Jacksonville (SSN 699), USS Phoenix (SSN 702), USS Baltimore (SSN 704), Norfolk, Va.

USS Philadelphia (SSN 690), USS Groton, USS Dallas (SSN 700), USS La Jolla (SSN 701), USS Boston (SSN 703); USS City of Corpus Christi (SSN 705), USS Albuquerque (SSN 706), USS Augusta (SSN 710), USS Providence (SSN 719); USS Pittsburgh (SSN 720), USS San Juan (SSN 751); USS Miami (SSN 755), USS Alexandria (SSN 757), USS Annapolis (SSN 760), Groton, Conn.

USS Portsmouth (SSN 707), USS Houston (SSN 713), USS Salt Lake City (SSN 716), USS Chicago (SSN 721), USS Louisville (SSN 724), USS Asheville (SSN 758), USS Jefferson City (SSN 759), San Diego, Calif., USS Minneapolis-Saint Paul (SSN 708); USS Hyman G. Rickover (SSN 709), USS Atlanta (SSN 712), USS Norfolk (SSN 714), USS Key West (SSN 722), USS Oklahoma City (SSN 723), USS Newport News (SSN 750), USS Pasadena (SSN 752), USS Albany (SSN 753), USS Topeka (SSN 754), USS Scranton (SSN 756), USS Boise (SSN 764), Norfolk, Va.

Crew: 13 officers, 120 enlisted
Armament: Harpoon and Tomahawk missiles, MK-48 torpedoes; four torpedo tubes
Date Deployed: Nov. 13, 1976 (USS Los Angeles)

GENERAL CHARACTERISTICS, NARWHAL CLASS

Builder: General Dynamics' Electric Boat Division
Power Plant: One nuclear reactor, one steam turbine, one shaft
Length: 314 feet (95.71 meters)
Beam: 38 feet (11.58 meters)
Displacement: 5,350 tons (4815 metric tons) submerged
Speed: 20-plus knots (23 mph, 36.8 kmph)
Units: USS Narwhal (SSN-671); Charleston, S.C.
Crew: 13 oficers, 116 enlisted
Armament: Torpedoes, four torpedo tubes; Harpoon; Tomahawk
Date Deployed: July 12, 1969 (USS Narwhal)

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GENERAL CHARACTERISTICS, STURGEON CLASS

Builder: General Dynamics, Electric Boat Division; General Dynamics, Quincy Shipbuilding Division; Ingalls Shipbuilding; Portsmouth Naval Shipyard; San Francisco Naval Shipyard; Newport News Shipbuilding
Power Plant: One nuclear reactor, two steam turbines, one shaft
Length: 292 feet (89 meters) (SSN 687-677); 300 feet (91.44 meters) (SSN 678-687)
Beam: 32 feet (9.75 meters)
Displacement: 4,640 tons (4176 metric tons) submerged
Speed: 20-plus knots (23 mph, 36.8 kmph)
Units: USS Sturgeon (SSN 637), USS Grayling (SSN 646), USS Sand Lance (SSN 660), USS Seahorse (SSN 669), USS Trepang (SSN 674), USS Bluefish (SSN 675), USS Billfish (SSN 676), USS Batfish (SSN 681), USS L. Mendel Rivers (SSN 686), Charleston, S.C.

USS Whale (SSN 638), USS Pargo (SSN 650), USS Archerfish (SSN 678), Groton, Conn.

USS Tautog (SSN 639), USS Aspro (SSN 648), USS Hawkbill (SSN 666), USS Pintado (SSN 672), USS William H. Bates (SSN 680), USS Tunny (SSN 682), USS Cavalla (SSN 684), Pearl Harbor, Hawaii

USS Pogy (SSN 647), USS Puffer (SSN 652), USS Gurnard (SSN 662), USS Drum (SSN 677), USS Sunfish (SSN 649), USS Hammerhead (SSN 663), USS Bergall (SSN 667), USS Spadefish (SSN 668), USS Finback (SSN 670), USS Flying Fish (SSN 673), USS Silversides (SSN 679), Norfolk, Va.
USS Parche (SSN 683), USS Richard B. Russell (SSN 687), Vallejo, Calif.
Crew: 12 officers, 95 enlisted
Armament: Harpoon; MK-48 torpedoes, four torpedo tubes; Tomahawk
Date Deployed: March 3, 1967 (USS Sturgeon)

GENERAL CHARACTERISTICS, PERMIT CLASS

Builders: General Dynamics' Electric Boat Division
Power Plant: One nuclear reactor, two steam turbines, one shaft
Length: 292 feet (89 meters)
Beam: 32 feet (9.75 meters)
Displacement: Approximately 4,200 tons (3780 metric tons) submerged
Speed: 20-plus knots (23 mph, 36.8 kmph)
Units: USS Greenling (SSN 614), USS Gato (SSN 615), New London, Conn.
Armament: MK-48 torpedoes, four torpedo tubes, Harpoon
Units: USS Greenling (SSN-614), USS Gato (SSN-615), New London, Conn.

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

STORES SHIPS

SERVICE:
Navy (Military Sealift Command)

DESCRIPTION:
Stores ships, like ocean-going warehouses, keep the fleet supplied with whatever it needs to remain operationl.

FEATURES:
Stores ships transport food, spare parts, mail and other supplies to Navy ships at sea. Each ship has a helo deck and two CH-46 helicopters, which are used for loading and offloading. Supplies also can be transferred to other ships via traditional underway replenishment (ships parallel to each other while underway).

BACKGROUND:
Stores ships are a part of the Military Sealift Command's Naval Fleet Auxiliary Force. The ex-Lyness class ships were modernized extensively after being acquired from the British Royal Fleet Auxiliary in the early

1980s. The crew includes U.S. Civil Service mariners who operate the ship and Navy personnel who perform communications and storekeeping functions and conduct helicopter operations.

POINT OF CONTACT:
Department of the Navy; Military Sealift Command; Washington, DC 20398-5540; (202) 433-0330

GENERAL CHARACTERISTICS

Builder:	Swan Hunter & Wigham Richardson Ltd., Wallsend-On-Tyne, England
Power plant:	One diesel engine, 11,520 brake horsepower
Length:	524 feet (159.7 meters)
Beam:	72 feet (21.9 meters)
Draft:	17 feet (5.2 meters)
Displacement:	16,792 tons (metric tons) full load
Endurance:	8,885 nautical miles (10,218 miles, 16,348 km)
Speed:	18 knots (20.7 miles per hour)
Aircraft:	Two CH-46 Sea Knight helicopters
Armament:	None
Crew:	125 civilian mariners, 65 Navy personnel
Units:	USNS Sirius (T-AFS 8), USNS Saturn, (T-AFS 10), Norfolk, Va. USNS Spica (T-AFS 9); Subic Bay, Philippines

Current: April 1993

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

CRUISERS

SERVICE: Navy

DESCRIPTION: Large combat vessel, with multiple target response capability;

MISSION:
Modern U.S. Navy Guided Missile Cruisers perform primarily in a Battle Force role. These ships are multi-mission (AAW, ASW, ASUW) surface combatants capable of supporting carrier or battleship battle groups, amphibious forces, or of operating independently and as flagships of surface action groups. Due to their extensive combat capability, these ships have been designated as Battle Force Capable (BFC) units. Ticonderoga, Long Beach and Virginia-class cruisers are equipped with Tomahawk ASM /LAM giving them additional long range strike mission capability.

BACKGROUND:
Technological advances in the Standard Missile coupled with the AEGIS weapon system and vertical launching system (VLS) in Ticonderoga class cruisers and the upgrading of older cruisers have increased the AAW capability of surface combatants to pinpoint accuracy from wave-top to zenith. The addition of Tomahawk ASM/LAM in the CG-47, CGN-9 and CGN-38 classes, has vastly complicated unit target planning for any potential enemy and returned an offensive strike role to the surface forces that seemed to have been lost to air power at Pearl Harbor.

New Threat Upgrade (NTU) is a program of sensor and weapon system upgrades implemented in older cruisers and some

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guided missile destroyers in order improve these ships' capability against the projected AAW threat into the 21st century.

POINT OF CONTACT:
Department of the Navy (OP-03PA); Washington, D.C. 20350-2000; (202) 694-6049

GENERAL CHARACTERISTICS, TICONDEROGA CLASS

Builders:	Ingalls Shipbuilding: CG 47-50, CG 52-57, 59, 62, 65-66, 68-69, 71-73; Bath Iron Works: CG 51, 58, 60-61, 63-64, 67, 70
Power Plant:	4 - General Electric LM 2500 gas turbines; 2 shafts 80,000 shaft horsepower total
Length:	567 feet
Beam:	55 feet
Displacement:	9,600 tons (full load)
Speed:	30-plus knots
Aircraft:	Two SH-2 (LAMPS) in CG 47-48; Two SH-60 (LAMPS III) in CG 49 and beyond
Units:	USS Ticonderoga (CG 47); Norfolk, Va. USS Yorktown (CG 48); Norfolk, Va. USS Vincennes (CG 49); San Diego, Calif. USS Valley Forge (CG 50); San Diego, Calif. USS Thomas S. Gates (CG 51); Norfolk, Va. USS Bunker Hill (CG 52); Yokosuka, Japan USS Mobile Bay (CG 53); Mayport, Fla. USS Antietam (CG 54); Long Beach, Calif. USS Leyte Gulf (CG 55); Mayport, Fla. USS San Jacinto (CG 56); Norfolk, Va. USS Lake Champlain (CG 57); San Diego, Calif. USS Philippine Sea (CG 58); Mayport, Fla. USS Princeton (CG 59); Long Beach, Calif. USS Normandy (CG 60); New York, New York USS Monterey (CG 61); Mayport, Fla. USS Chancellorsville (CG 62); San Diego, Calif. USS Cowpens (CG 63); San Diego, Calif. USS Gettysburg (CG 64); Mayport, Fla. USS Chosin (CG 65); Pearl Harbor, Hawaii USS Hue City (CG 66); Mayport, Fla. USS Shiloh (CG 67); San Diego, Calif. USS Anzio (CG 68); Norfolk, Va.
Ships not yet commissioned:	USS Port Royal (CG 69) USS Lake Erie (CG 70) USS Cape St. George (CG 71) USS Vella Gulf (CG 72) USS Vicksburg (CG 73) Crew: 24 officers, 340 enlisted
Armament:	Standard Missile (MR) Anti-Submarine Rocket (ASROC) Tomahawk ASM/LAM Six MK-46 torpedoes (from two triple tube mounts) Two 5-inch / 54 caliber MK 45 lightweight guns Two 20mm Phalanx CIWS
Date Deployed:	22 January 1983 (USS Ticonderoga)

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GENERAL CHARACTERISTICS, VIRGINIA CLASS

Builder:	Newport News Shipbuilding and Drydock Company, Newport News, Va.
Power Plant:	Two General Electric nuclear reactors; Two geared turbines, two shafts
Length:	585 feet
Beam:	63 feet
Displacement:	11,000 tons (full load)
Speed:	30+ knots
Aircraft:	None
Helicopter Landing Capability:	None
Units:	USS Virginia (CGN 38); Norfolk, Va. USS Texas (CGN 39); Bremerton, Wash. USS Mississippi (CGN 40); Norfolk, Va. USS Arkansas (CGN 41); Alameda, Calif.
Crew:	39 officers, 539 enlisted
Armament:	Standard Missile Eight Harpoon (from two quad launchers); Eight Tomahawk ASM/LAM (from two armored box launchers); ASROC Six MK 46 torpedoes (from 2 triple tube mounts) Two 5-inch/54 MK 45 lightweight gun; Two 20mm Phalanx CIWS
Date Deployed:	Sept. 11, 1976 (USS Virginia)

GENERAL CHARACTERISTICS, CALIFORNIA CLASS

Builder:	Newport News Shipbuilding and Drydock Company, Newport News, Va.
Power Plant:	Two General Electric nuclear reactors; Two geared turbines, two shafts
Length:	596 feet
Beam:	61 feet
Displacement:	10,450 tons (full load)
Speed:	30+ knots
Aircraft:	None
Helicopter Landing Capability:	Landing area only, no support facilities
Units:	USS California (CGN 36); Bremerton, Wash. USS South Carolina (CGN 37); Norfolk, Va.
Crew:	40 officers, 544 enlisted
Armament:	Standard Missiles (MR) Eight Harpoon (from 2 quad launchers) ASROC (from MK 16 box launcher) Four MK 46 (from single fixed tubes) Two 5-inch/54 caliber MK 45 lightweight gun Two 20mm Phalanx CIWS
Date Deployed:	16 February 1974 (USS California)

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GENERAL CHARACTERISTICS, TRUXTON CLASS

Ship Name:	USS Truxton
Hull Number:	CGN-35
Builder:	New York Shipbuilding
Power Plant:	Two General Electric nuclear reactors Two geared steam turbines, two shafts
Length:	564 feet
Beam:	58 feet
Displacement:	9,127 tons (full load)
Speed:	30-plus knots
Aircraft:	1 - SH-2 (LAMPS)
Units:	USS Truxton (CGN 35); Bremerton, Wash.
Crew:	37 officers, 530 enlisted
Armament:	Standard Missile (ER); Eight- Harpoon (from 2 quad launchers); ASROC; Four MK 46 torpedoes (from fixed single tubes);. One 5-inch/54 caliber lightweight gun; Two 20mm Phalanx CIWS
Date Deployed:	May 27, 1967

GENERAL CHARACTERISTICS, BAINBRIDGE CLASS

Ship Name:	USS Bainbridge, CGN-25
Builder:	Bethlehem Steel
Power Plant:	Two General Electric nuclear reactors; Two geared turbines, two shafts
Length:	565 feet
Beam:	58 feet
Displacement:	8,592 tons (full load)
Speed:	30-plus knots
Aircraft:	None
Helicopter Landing Capability:	None
Units:	USS Bainbridge (CGN 25); Norfolk, Va.
Crew:	42 officers, 516 enlisted
Armament:	Standard Missiles (ER) Eight Harpoon (from 2 quad launchers) ASROC (from MK 16 box launcher) Six MK 46 torpedoes (from 2 triple tube mounts) Two 20mm Phalanx CIWS
Date Deployed:	October 6, 1962

GENERAL CHARACTERISTICS, LONG BEACH CLASS

Ship Name:	USS Long Beach, CGN-9
Builder:	Bethlehem Steel
Power Plant:	Two Westinghouse nuclear reactors; Two geared turbines, 2 shafts
Length:	721 feet
Beam:	73 feet

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Displacement:	17,525 tons (full load)
Speed:	30-plus knots
Aircraft:	None
Helicopter Landing Capability:	Helo landing area only
Units:	USS Long Beach (CGN 9); San Diego, Calif
Crew:	55 officers, 770 enlisted, 45 Marines45
Armament:	Standard Missiles (ER); Eight Harpoon (from two quad launchers); Eight Tomahawk ASM/LAM (from 2 armored box launchers ASROC (from MK 16 box launcher) Six MK 46 torpedoes (from 2 triple tube mounts) Two 5-inch/38 caliber guns Two 20mm Phalanx CIWS
Date Deployed:	Sept. 9, 1961

GENERAL CHARACTERISTICS, BELKNAP CLASS

	Builders:CG 26-28, 32, 34 Bath Iron works; CG-29, 31 Puget Sound Naval Shipyard; CG-30 San Francisco Naval Shipyard; CG-33 Todd Shipyards
Power Plant:	Four 1,200 psi boilers; two geared turbines, two shafts; 85,000 shaft horsepower
Length:	547 feet
Beam:	55 feet
Displacement:	7,930 tons (full load)
Speed:	32 knots
Aircraft:	One SH-2F (LAMPS) Except CG 26: 1 - SH-3
Units:	USS Belknap (CG 26); Gaeta, Italy USS Josephus Daniels (CG 27); Norfolk, Va. USS Wainwright (CG 28); Charleston, S.C. USS Jouett (CG 29); San Diego, Calif. USS Horne (CG 30); San Diego, Calif. USS Sterett (CG 31); San Diego, Calif. USS William H. Standley (CG 32); San Diego, Calif. USS Fox (CG 33); San Diego, Calif. USS Biddle (CG 34); Norfolk, Va.
Crew:	27 officers, 450 enlisted
Armament:	Standard Missile Eight Harpoon (from 2 quad launchers); ASROC; Six MK-46 torpedoes (from two triple tube mounts); One 5-inch/54 caliber MK 42 gun; Two 20mm Phalanx CIWS
Date Deployed:	Nov. 7, 1964 (USS Belknap)

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GENERAL CHARACTERISTICS, LEAHY CLASS

Builders:	CG 16-18 Bath Iron Works; CG 19-20 New York Shipbuilding; CG 21, 24 Puget Sound Naval Shipyard; CG 22 Todd Shipyards; CG 23 San Francisco Naval Shipyard
Power Plant:	Four 1,200 psi boilers; two geared turbines, two shafts 85,000 shaft horsepower
Length:	533 feet
Beam:	55 feet
Displacement:	7,800 tons (full load)
Speed:	33 knots
Aircraft:	None
Helicopter Landing Capability:	None
Units:	USS Leahy (CG 16); San Diego, Calif. USS Harry E. Yarnell (CG 17); Norfolk, Va. USS Worden (CG 18); Pearl Harbor, Hawaii USS Dale (CG 19); Mayport, Fla. USS Richmond K. Turner (CG 20); Charleston, S.C. USS Gridley (CG 21); San Diego, Calif. USS England (CG 22); San Diego, Calif USS Halsey (CG 23); San Diego, Calif. USS Reeves (CG 24); Pearl Harbor, Hawaii
Crew:	27 officers, 428 enlisted
Armament:	Standard Missiles; Eight Harpoon (from two quad launchers); ASROC (from MK 16 box launcher); Six MK-46 torpedoes (from 2 triple tube mounts); Two 20mm Phalanx
Date Deployed:	04 August 1961 (USS Leahy)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

DESTROYERS

SERVICE: Navy

DESCRIPTION:
These fast warships help safeguard larger ships is a fleet or battle group.

FEATURES:
Destroyers and Guided Missile Destroyers operate in support of carrier battle groups, surface action groups, amphibious groups and replenishment groups. Destroyers primarily perform anti-submarine warfare duty while guided missile destroyers are multi-mission (ASW, anti-air and anti-surface warfare) surface combatants. The addition of the Mk-41 Vertical Launch System or Tomahawk Armored Box Launchers (ABLs) to many Spruance-class destroyers has greatly expanded the role of the destroyer in strike warfare.

BACKGROUND:
Technological advances have improved the capability of modern destroyers culminating in the Arleigh Burke (DDG 51) class. When the Arleigh Burke was commissioned in July 1991, it was the most powerful surface combatant ever put to sea. Like the larger Ticonderoga class cruisers, DDG-51's combat systems center around the AEGIS weapon system and the SPY-ID, multi-function phased array radar. The combination of AEGIS, the Vertical Launching System, an advanced anti-submarine warfare system, advanced anti-air-craft missiles and Tomahawk ASM/LAM, the Burke class continues the revolution at sea.

Designed for survivability, DDG 51

incorporates all-steel construction and many damage control features resulting from lessons learned during the Falkland Islands War and from the accidental attack on USS Stark. Like most modern U.S. surface combatants, DDG 51 utilizes gas turbine propulsion. These ships will replace older Charles F. Adams and Farragut class guided missile destroyers.

The four Kidd class guided missile destroyers are similar to the Spruance class, but have greater displacement and improved combat systems. These ships were built originally for use by Iran (when the Shah was in power) and the contract was canceled by the succeeding Iranian government. The U.S. Navy acquired them in 1981 and 1982. Like the older guided missile cruisers, these ships have been upgraded to improve their anti-air warfare performance against the technologically advanced threat expected into the 21st century.

The Spruance class destroyers, the first

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large U.S. Navy warships to employ gas turbine engines as their main propulsion system, are undergoing extensive modernizing. The upgrade program includes addition of vertical launchers for advanced missiles on 24 ships of this class, in addition to an advanced ASW system and upgrading of its helicopter capability. Like the Kidd class, Spruance class destroyers are expected to remain a major part of the Navy's surface combatant force into the 21st century.

Both the Charles F. Adams and Farragut missile destroyer classes were constructed in the late 1950s and early 1960s. Despite periodic modernizations, both classes are nearing the end of their useful service lives and their retirement is scheduled to be completed by the end of FY 93. The AEGIS-equipped Arleigh Burke class will eventually replace these ships.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

GENERAL CHARACTERISTICS, ARLEIGH BURKE CLASS

Builders:	Bath Iron Works, Ingalls Shipbuilding
Power plant:	Four General Electric LM 2500-30 gas turbines; two shafts, 100,000 total shaft horsepower
Length:	466 feet (142 meters)
Beam:	59 feet (18 meters)
Displacement:	8,300 tons (7470 metric tons) full load
Speed:	31 knots (35.7 miles, 57.1 km, per hour)
Aircraft:	None. LAMPS III electronics installed on landing deck for coordinated DDG 51/helo ASW operations
Units:	USS Arleigh Burke (DDG-51); Norfolk, Va.
Under construction/planned:	John Barry (DDG 52); John Paul Jones (DDG 53); Curtis Wilbur (DDG 54); Stout (DDG 55); John S. McCain (DDG 56); Mark Mitscher (DDG 57); Laboon (DDG 58)
Crew:	23 officers, 300 enlisted
Armament:	Standard Missile; Harpoon; Tomahawk ASM/LAM; Six MK-46 torpedoes (from 2 triple tube mounts); One 5-inch /54 caliber MK-45 (lightweight gun); Two 20mm Phalanx CIWS
Date deployed:	July 4, 1991 (USS Arleigh Burke)

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GENERAL CHARACTERISTICS, KIDD and SPRUANCE CLASSES

Builder:	Ingalls Shipbuilding
Power plant:	Four General Electric LM 2500 gas turbines; two shafts, 80,000 shaft horsepower
Length:	563 feet (171.6 meters)
Beam:	55 feet (16.8 meters)
Displacement:	Kidd - 9,900 tons (8,910 metric tons) full load Spruance - 9,100 tons (8,190 metric tons) full load
Speed:	33 knots (38 miles, 60.8 km, per hour)
Aircraft:	Kidd - 1 SH-2F LAMPS helicopter Spruance - 2 SH-60 LAMPS III helicopter
Units:	KIDD CLASS SHIPS USS Kidd (DDG 993), USS Scott (DDG 995), Norfolk, Va. USS Callaghan (DDG 994), USS Chandler (DDG 996), San Diego, Calif. SPRUANCE CLASS SHIPS USS Spruance (DD 963), USS John Hancock (DD 981); Mayport, Fla. USS Paul F. Foster (DD 964), USS David R. Ray (DD 971), USS Oldendorf (DD 972), Long Beach, Calif. USS Kinkaid (DD 965), USS Elliot (DD 967), USS John Young (DD 973), USS O'Brien (DD 975), USS Merrill (DD 976), USS Harry W. Hill (DD 986), San Diego, Calif. USS Hewitt (DD 966), USS Fife (DD 991), Yokosuka, Japan USS Arthur W. Radford (DD 968), USS Peterson (DD 969), USS Caron (DD 970), USS Comte De Grasse (DD 974), USS Briscoe (DD 977), USS Stump (DD 978), USS Conolly (DD 979), USS Hayler (DD 997), Norfolk, Va. USS Moosbrugger (DD 980), USS Nicholson (DD 982), USS John Rodgers (DD 983), USS O'Bannon (DD 987), USS Thorn (DD 988), USS Deyo (DD 989), Charleston, S.C. USS Leftwich (DD 984), USS Cushing (DD 985), USS Ingersoll (DD 990), USS Fletcher (DD 992); Pearl Harbor, Hawaii
Crew:	Kidd class: 31 officers, 332 enlisted Spruance class: 30 officers, 352 enlisted
Armament:	8 Harpoon (from 2 quad launchers) Tomahawk ASM/LAM, VLS or ABL in Spruance); ASROC Six MK 46 torpedoes (from 2 triple tube mounts); Two 5-inch/ 54 caliber MK 45 (lightweight gun); Two 20mm Phalanx CIWS; Kidd only: Standard Missiles; Spruance only:NATO Sea Sparrow point defense AAW missiles
Date deployed:	June 27, 1981 (USS Kidd) Sept. 20, 1975 (USS Spruance)

(more)

GENERAL CHARACTERISTICS FARRAGUT CLASS

Builder:	San Francisco Naval Shipyard (USS Mahan)
Power plant:	Four 1,200 psi boilers; two geared turbines, two shafts, 85,000 shaft horsepower
Length:	512 feet (156 meters)
Beam:	52 feet (15.8 meters)
Displacement:	6,360 tons (5,724 metric tons) full load
Speed:	32 knots (38 miles, 60.8 km, per hour)
Aircraft:	None
Units:	USS Mahan (DDG 42), Charleston, S.C.
Crew:	29 officers, 369 enlisted
Armament:	Standard Missiles (ER); Eight Harpoon (from 2 quad launchers); ASROC (from MK 16 launcher); Six MK-46 torpedoes (from 2 triple tube mounts); One 5-inch /54 caliber MK 42 gun

GENERAL CHARACTERISTICS, CHARLES F. ADAMS CLASS

Builders:	Puget Sound Bridge and Drydock (USS Goldsborough)
Power plant:	Four 1,200 psi boilers; 2 geared turbines, 2 shafts; 70,000 shaft horsepower
Length:	437 feet (133.2 meters)
Beam:	47 feet (14.3 meters)
Displacement:	4,722 tons (4,249.8 metric tons) full load
Speed:	30 knots (34.5 miles, 55.2km, per hour)
Aircraft:	None
Helicopter landing capability:	None
Units:	USS Goldsborough (DDG 20); Pearl Harbor, HI.
Crew:	380 28 officers, 352 enlisted
Armament:	Standard Missiles (MR); Harpoon (from Standard launcher); ASROC (from MK 16 launcher); Six MK 46 torpedoes (from 2 triple tube mounts) Two 5-inch/54 caliber MK 42 gun

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

FRIGATES

SERVICE: Navy

DESCRIPTION: Frigates fulfill a Protection of Shipping (POS) mission as Anti-Submarine Warfare (ASW) combatants for amphibious expeditionary forces, underway replenishment groups and merchant convoys.

BACKGROUND: The guided missile frigates (FFG) bring an anti-air warfare (AAW) capability to the frigate mission, but they have some limitations. Designed as cost effective surface combatants, they lack the multi-mission capability necessary for modern surface combatants faced with multiple, high technology threats. They also offer limited capacity for growth. Despite this, the FFG-7 class is a robust platform, capable of withstanding considerable damage. This "toughness" was aptly demonstrated when USS Samuel B. Roberts struck a mine and USS Stark was hit by two Exocet cruise missiles. In both cases the ships survived, were repaired and have returned to the fleet.

The Knox-class frigates form the backbone of the Innovative Concept Reserve Training Program. Under this program, the eight ships remaining in service become designated Type II reserve training frigates, while 32 other frigates were deactivated and designated Type III ships. The Type III ships can be completely reactivated in 180 days. Each of the eight Type II ship has its own reserve crew, and is also assigned four

"nucleus crews" which would man the 32 Type III ships. The Type II ships will be homeported in New York, Mobile and Ingleside Texas.

The Surface Combatant Force Requirement Study does not define any need for a single mission ship such as the frigate and there are currently no frigates planned in the Navy's five-year shipbuilding program. The Navy is an active participant, however, with our NATO allies in a multi-nation NATO frigate program known as NFR-90. The ultimate configuration of NFR-90 and its full capabilities will not be known for some time. No decision regarding eventual procurement of the NFR-90 can be made until the design is finalized.

POINT OF CONTACT: Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920

(more)

GENERAL CHARACTERISTICS, OLIVER HAZARD PERRY CLASS

Builder:	FFG 7-8, 11, 13, 15-16, 21, 24, 26, 29, 32, 34, 36, 39, 42, 45, 47, 49, 50, 53, 55-56, 58-59 Bath Iron Works FFG 10, 20, 22, 28, 31, 37, 40, 48, 52 Todd Shipyards, Seattle FFG 9, 12, 14, 19, 23, 25, 27, 30, 33, 38, 41, 43, 46, 51, 54, 57, 60, 61 Todd Shipyards, San Pedro, Calif.
Power plant:	Two General Electric LM 2500 gas turbines; 1 shaft, 41,000 shaft horsepower
Length:	445 feet (133.5 meters) 453 feet (135.9 meters) with LAMPS III modification
Beam:	45 feet (13.5 meters)
Displacement:	4,100 tons (full load)
Speed:	29 knots (33.4 miles per hour)
Aircraft:	Two SH-60B (LAMPS MK-III) in FFG 8, 28, 29, 32, 33, 36-61; One SH-2F (LAMPS MK-I) in FFG 7, 9-27, 30, 31, 34
Units:	USS Oliver Hazard Perry (FFG 7); New York, N.Y.* USS McInerney (FFG 8); Mayport, Fla. USS Wadsworth (FFG 9); Long Beach, Calif.* USS Duncan (FFG 10); Long Beach, Calif.* USS Clark (FFG 11); Newport, R.I.* USS George Philip (FFG 12); Long Beach, Calif.* USS Samuel Eliot Morison (FFG 13); Charleston, S.C.* USS John H. Sides (FFG 14); San Diego, Calif.* USS Estocin (FFG 15); Philadelphia, Pa.* USS Clifton Sprague (FFG 16); New York, N.Y.* USS John A. Moore (FFG 19); Long Beach, Calif.* USS Antrim (FFG 20); Mobile, Ala.* USS Flatley (FFG 21); Mobile, Ala.* USS Fahrion (FFG 22); Charleston, S.C.* USS Lewis B. Puller (FFG 23); Long Beach, Calif.* USS Jack Williams (FFG 24); Pascagoula, Miss. USS Copeland (FFG 25); San Diego, Calif* USS Gallery (FFG 26); Pascagoula, Miss. USS Mahlon S. Tisdale (FFG 27); San Diego, Calif.* USS Boone (FFG 28); Mayport, Fla. USS Stephen W. Groves (FFG 29); Pascagoula, Miss. USS Reid (FFG 30); San Diego, Calif. USS Stark (FFG 31); Mayport, Fla. USS John L. Hall (FFG 32); Pascagoula, Miss. USS Jarrett (FFG 33); Long Beach, Calif. USS Aubrey Fitch (FFG 34); Mayport, Fla. USS Underwood (FFG 36); Norfolk, Va. USS Crommelin (FFG 37); Pearl Harbor, Hawaii USS Curts (FFG 38); Yokosuka, Japan USS Doyle (FFG 39); Mayport, Fla.

(more)

USS Halyburton (FFG 40); Charleston, S.C.
USS McClusky (FFG 41); Yokosuka, Japan
USS Klakring (FFG 42); Charleston, S.C.
USS Thach (FFG 43); Yokosuka, Japan
USS DeWert (FFG 45); Charleston, S.C.
USS Rentz (FFG 46); San Diego, Calif.
USS Nicholas (FFG 47); Charleston, S.C.
USS Vandergrift (FFG 48); Long Beach, Calif.
USS Robert G. Bradley (FFG 49); Charleston, S.C.
USS Taylor (FFG 50); Charleston, S.C.
USS Gary (FFG 51); San Diego, Calif.
USS Carr (FFG 52); Charleston, S.C.
USS Hawes (FFG 53); Charleston, S.C.
USS Ford (FFG 54); Long Beach, Calif.
USS Elrod (FFG 55); Charleston, S.C.
USS Simpson (FFG 56); Newport, R.I.
USS Reuben James (FFG 57); Pearl Harbor, Hawaii
USS Samuel B. Roberts (FFG 58); Newport, R.I.
USS Kauffman (FFG 59); Newport, R.I.
USS Rodney M. Davis (FFG 60); Yokosuka, Japan
USS Ingraham (FFG 61) Long Beach, Calif.
* Naval Reserve units

Crew: 13 officers, 287 enlisted

Armament: Standard Missile (MR)(single launcher forward);
Harpoon (from Standard Missile launcher);
Six MK 46 torpedoes (from 2 triple tube mounts);
One 76mm (3-inch)/62 caliber MK 75 rapid fire gun;
One 20mm Phalanx CIWS

Date deployed: 17 December 1977 (USS Oliver Hazard Perry)

GENERAL CHARACTERISTICS

Class: KNOX CLASS (FF 1052)

Hull Number: FF-1052 through FF-1097

Builders: FF 1052-1054, 1062, 1066, 1070-1071; Todd Shipyards, Seattle, Wash.;
FF 1055, 1058, 1060, 1067, 1074, 1076 Todd Shipyards, San Pedro, Calif.;
FF 1057, 1063, 1065, 1069, 1073, Lockheed Shipbuilding;
FF 1056, 1059, 1061, 1072, 1068, 1075, 1077-1091, 1092-1097 Avondale Shipyards, New Orleans

Power plant: Two 1200 psi boilers; one geared turbine, one shaft; 35,000 shaft horsepower

Length: 438 feet (131.4 meters)

Beam: 47 feet (14.1 meters)

(more)

Displacement:	4,250 tons (full load)
Speed:	27 knots (31.1 meters)
Aircraft:	1 - SH-2F (LAMPS)
Units:	USS Joseph Hewes (FF 1078); Charleston, S.C. USS Bowen (FF 1079); Norfolk, Va. USS McCandless (FF 1084); Norfolk, Va. USS Donald B. Beary (FF 1085); Norfolk, Va. USS Jesse L. Brown (FF 1089); Charleston, S.C. USS Ainsworth (FF 1090); Norfolk, Va. USS Truett (FF 1095); Norfolk, Va. USS Moinester (FF 1097); Norfolk, Va.
Crew:	18 officers, 267 enlisted
Armament:	ASROC (from MK 16 box launcher); Harpoon (from MK 16 box launcher); Four MK-46 (from single tube launchers); One 5-inch / 54 caliber MK 42 gun; One 20mm Phalanx CIWS
Date deployed:	24 April 1971 (USS Joseph Hewes)

CHAPTER 3

Fixed Wing Aircraft

A-4 SKYHAWK

SERVICE: Marine Corps

DESCRIPTION:
A lightweight, single-engine attack aircraft.

MISSION:
The mission of an A-4 attack squadron is to attack and to destroy surface targets in support of the landing force commander, escort helicopters, and conduct other operations as directed.

FEATURES:
Developed in the early 1950s, the A-4 Skyhawk was originally designated the A-4D as a lightweight, daylight-only nuclear-capabl e strike aircraft for use in large numbers from aircraft carriers.

There are numerous models of the A-4 in use. The A-4M and the TA-4F are currently used by Marine Corps Reserve squadrons. All models have two internally mounted 20mm (.8 inch) cannons, and are capab le of delivering conventional and nuclear weapons under day and night visual meteorological conditions. The A-4M uses a heads-up display and computer-aided delivery of its bomb load with the angle rate bombing system.

INVENTORY:
28. The Marine Reserve has two squadrons of A-4s with 12 aircraft each. Additionally, each squadron has two TA-4 aircraft.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492

GENERAL CHARACTERISTICS

Primary function:	Single-seat attack bomber
Contractor:	McDonnell Douglas
Thrust:	11,200 pounds (50,848 kg) thrust from Pratt & Whitney J52-P-408A Turbojet
Length:	41.33 feet (12.5 meters)
Height:	15 feet (4.57 meters)
Weight:	Empty: 10,465 pounds (4,751 kg)
Loaded:	24,500 pounds (11,123 kg)
Wingspan:	27.5 feet (8.38 meters)
Range:	2,055 nautical miles (2363.25 miles) With 4,000 pound (1816 kg) bomb load: 333 nautical miles (382.95 miles)

(more)

Initial climb:	8,440 feet (2,571 meters) per minute
Speed:	clean, at sea level: 670 miles per hour (582.9 knots) With 4,000 pounds (1816 kg) of weapons: 645 miles per hour (561.15 knots)
Ceiling:	42,250 feet
Crew:	One
Armament:	2 MK12 20mm cannons, each with 200 rounds 14 400-pound bombs or three 1,000-pound bombs or one 2,000-pound bomb, or four Shrike ASMs, or three Walleye missiles or 4 Laser Mavericks
Introductory date:	1956

A-6E INTRUDER

SERVICE: Navy and Marine Corps

DESCRIPTION:
The A-6E Intruder is a carrier-based attack bomber.

MISSION:
The A-6E was developed for conventional ground attack in all weather conditions day and night.

FEATURES:
The A-6E is an all-weather, two-seat, subsonic, carrier-based attack aircraft. In spite of its weight, it has excellent slow-flying capabilities with full span slats and flaps. The crew, sitting side by side, can see in all directions through a broad canopy. The aircraft is equipped with a micro-miniaturized digital computer, a solid state weapons release system, and a single, integrated track and search radar. The Intruder is armed with laser-guided weapons and equipped with a chin turret containing a forward-looking infra-red (FLIR) system and a laser designator and receiver.

The A-6 worked around the clock in Vietnam, conducting attacks on targets with a pinpoint accuracy unavailable through any other aircraft available at that time.

The A-6E proved once again that it is the best all-weather precision bomber in the world in the joint strike on Libyan terrorist-related targets in 1986. Navy A-6E Intruders and Air Force FB-111s penetrated the sophisticated Libyan air defense systems,

which had been alerted by the high level of diplomatic tension and by rumors of impending attacks. Evading more than 100 guided missiles, the strike force flew at low levels in complete darkness and hit its target.

A-6 aircraft were used extensively during Operation Desert Storm, providing precision bombing on a wide range of targets. The night and all-weather attack capabilities enabled the A-6 to neutralize anti-aircraft batteries and attack well-protected tactical targets with minimum casualties. The precision munitions used by the A-6 provided exact targeting of targets in a complex environment.

POINT OF CONTACT:
Navy: Public Affairs Office, Naval Air Sy stems Command (AIR 07D2), Washington, DC 20361-0701; (703) 746-3791; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492

(more)

GENERAL CHARACTERISTICS

Primary function:	All-weather attack aircraft
Contractor:	Grumman Aerospace Corporation
Unit cost:	$22 million
Propulsion:	Two Pratt & Whitney J52-P8B engines (9,300 pounds/4,185 kg thrust each) two-shaft turbojets
Wingspan:	53 feet (16.1 meters)
Length:	54 feet 7 inches (16.1 meters)16 feet 3 inches (5 meters)
Height:	16 feet 3 inches (4.95 meters)
Weight:	Take-off maximum gross, 60,626 pounds (27,524 kg); take-off maximum gross (carrier), 58,600 pounds (26,370 kg); empty, 25,630 pounds (11,636 kg)
Speed:	563 nautical miles (648 miles, 1,036 km, per hour)
Ceiling:	44,600 feet
Range:	With full combat load, 1,077 miles (1,733 km); with external fuel tanks, 3,100 miles (4,991 km)
Armament:	Five stores locations each rated at 3,600 pounds (1,634 kg)
Crew:	Two
Date Deployed:	First flight, April 19, 1960 Operational, February 1963

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

A-7D/K CORSAIR II

SERVICE: Air National Guard

DESCRIPTION:
A single-engine, single-seat attack aircraft.

FEATURES:
The A-7 provides long-range and battlefield interdiction. It can loiter for up to two hours and is capable of extended range with external fuel tanks or by in-flight refueling.

BACKGROUND:
The A-7 Corsair II was developed originally to meet Navy requirements for a carrier-based, light attack aircraft able to carry more weapons than the earlier A-4E Skyhawk. To keep costs down and speed delivery, the A-7 design was based on the F-8 Crusader, which is no longer in the inventory.

The A-7A flew for the first time in September 1965. Since then, other versions of the Corsair II have been produced for the Air Force and Navy, and the Greek and Portuguese air forces.

The A-7D model, developed for the Air Force, was accepted in December 1968. While it was designed primarily for an air-to-surface attack role, its weapons delivery accuracy, extended range, ordnance payload and responsiveness also met requirements for close air support and air interdiction.

Production of 459 A-7Ds was completed in December 1976.

The aircraft first entered combat in the Vietnam War in October 1972.

Deliveries of the A-7D to Air National Guard squadrons began in 1973; final deliveries were made in 1981.

INVENTORY:
There are 120 A-7Ds and 6 A-7Ks in the Air National Guard.

POINT OF CONTACT:
National Guard Bureau, Public Affairs Office, The Pentagon, Washington DC 20310--2500; (202) 695-0421

GENERAL CHARACTERISTICS

Primary function:	Interdiction, close air support
Builder:	Vought Corp., LTV Aerospace Corp
Power plant:	One turbofan engine; first two aircraft had Pratt & Whitney TF30-P-8 engines; remainder have Allison TF41-A-1 engines

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Length:	45 feet (13.72 meters)
Height:	16 feet, 3/4 inches (4.9 meters)
Wingspan:	38 feet, 9 inches (11.81 meters)
Maximum takeoff weight:	42,000 pounds (19,005 kilograms)
Speed:	698 mph (Mach 0.93 at sea level)
Range:	2,871 miles (2,497 nautical miles/4,593.6 kilometers) with maximum internal and external fuel tanks
Endurance:	Up to two hours
Armament:	One 20mm multi-barrel Gatling gun; up to 15,000 pounds (6,787 kilograms) of air-to-air (Sidewinder, see separate fact sheet) or air-to-surface missiles, bombs, rockets or gun pods on six underwing and two fuselage attachments
Crew:	One
Date deployed:	December 1968

DEPARTMENT OF DEFENSE
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FACT FILE

A-10/OA-10 THUNDERBOLT II

SERVICE: Air Force

DESCRIPTION:
The Fairchild A-10 Thunderbolt is an attack aircraft, built expressly for close air support of ground forces, particularly as an anti-tank aircraft. It is known, unofficially and affectionately, as the "Warthog."

FEATURES:
The A-10 Thunderbolt II and its OA-10 modification are the first Air Force aircraft specifically designed for close air support of ground forces. They are simple twin-engine jet aircraft that can be used against all ground targets, including tanks and other armored vehicles. They have excellent maneuverability at low air speeds and altitude, and are highly accurate. They can loiter near battle areas for extended periods of time and operate under 1,000-foot ceilings with 1.5-mile visibility. Their wide combat radius and short takeoff and landing capability permit operations close to front lines.

The Thunderbolt II's single-seat cockpit forward of its wings has a large bubble canopy. The pilot is encircled by titanium armor that also protects parts of the flight control system. The canopy provides all-around vision.

Built to survive direct hits from armor-piercing and high explosive projectiles up to 23mm, it is equipped with self-sealing fuel cells and duplicate hydraulic flight control systems backed up by manual systems. This permits pilots to fly and land when hydraulic power is lost.

The A-10 can be serviced and operated from bases with limited facilities near battle areas. Many of the aircraft's parts are interchangeable left and right, including the engines, main landing gear and vertical stabilizers.

The "black boxes" include sophisticated communications, inertial navigation, fire control and weapons delivery systems and countermeasures to missile threats.

The aircraft's 30mm GAU-8/A Gatling gun can fire 3,900 rounds a minute and defeat an array of ground targets, including tanks. Its other weapons include AGM-65 Maverick and AIM-9 Sidewinder missiles.

INVENTORY:
There are 72 A-10s and 60 OA-10s in the active duty force, 87 A-10s in the AF Reserve and 84 A-10s and 24 OA-10s in the Air National Guard.

BACKGROUND:
The first production A-10A was delivered to Davis-Monthan Air Force Base, Ariz., in October 1975. In the Persian Gulf War, the A-10s flew 8,100 sorties and launched 90 percent of the AGM-65 Maverick missiles used there.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley Air Force Base VA 23665-5562; (804) 674-5471

(more)

GENERAL CHARACTERISTICS

Primary function:	Close air support
Contractor:	Fairchild Republic Co.
Unit Cost:	$8.8 million
Power Plant:	Two General Electric TF34-GE-100 turbofan engines
Thrust:	9,065 pounds (4,079 kg) each engine
Length:	53 feet, 4 inches (16.16 meters)
Height:	14 feet, 8 inches (4.42 meters)
Wingspan:	57 feet, 6 inches (17.4 meters)
Speed:	420 miles per hour (365.2 knots)
Maximum takeoff weight:	51,000 pounds (22,950 kg)
Range:	288 miles (250 nautical miles/460 km) carrying 9,500 pounds (4,275 km) of weapons and with a 1.7-hour loiter time
Armament:	One 30-mm GAU-8/A seven-barrel Gatling gun; up to 16,000 pounds (7,200 km) of bombs, missiles and flares on eight under-wing and three under-fuselage stations.
Crew:	One
Introduction date:	March 1976

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

AV-8B HARRIER

SERVICE: Marine Corps

DESCRIPTION:
Fighter-attack aircraft capable of vertical takeoffs and landings.

MISSION:
The AV-8B Harrier II, a vertical or short takeoff and landing aircraft, may be used as a fighter or in an attack role. The AV-8B may be used to escort helicopters, conduct close and deep combat air support and fly offensive missions against enemy ground-to-air defenses.

BACKGROUND:
The AV-8B is a single-engine, one-seat aircraft capable of vertical/short take-off and landing (V/STOL) operations. Three AV-8B squadrons stationed approximately 40 miles (64 kilometers) from the Kuwaiti border, were the most forward deployed tactical strike aircraft during Operation Desert Storm and operated from relatively unprepared sites.

One AV-8B squadron and one six-air

craft detachment operated off the landing helicopter ship USS NASSAU in the Persian Gulf during Desert Storm. The average turnaround time during the ground war surge was 23 minutes.

The night attack version of the AV-8B became operational in the summer of 1991.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Public Affairs Division, Washington, DC 20380-1775, (703) 614-1492

GENERAL CHARACTERISTICS

Primary function:	Light attack and close air support for groundtroops
Contractor:	McDonnell Douglas Corp.
Cost:	$23.7 million
Propulsion:	One Rolls Royce F402-RR-406/208
Length:	46 feet 4 inches (14.1 meters)
Wingspan:	30 feet 4 inches (9.2 meters)
Height:	11 feet 9 inches (3.5 meters)
Weight:	12,500 pounds (5,625 kg) empty; 29,750 pounds (13,400 kg) max gross take-off
Speed:	547 nautical knots (629 miles, 1,008 km per hour)
Ceiling:	50,000 feet
Armament:	Wing points for AIM-9 Sidewinder and an assortment of air-to-ground weapons and AGM-65 Maverick missiles
Date deployed:	January 1985
Crew:	One

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

B-1B LANCER

SERVICE: Air Force

DESCRIPTION:
The B-1B is a multi-role, long-range heavy bomber.

FEATURES:
The B-1B, capable of flying intercontinental missions without refueling, can perform a variety of missions, including that of a conventional weapons carrier for theater operations as well as long-range sea surveillance and mine-laying operations.

Its electronic jamming equipment, infrared countermeasures, radar location and warning systems complement its low-radar cross-section and form an integrated defense system for the aircraft. The B-1B currently holds 36 world records for speed, payload and distance.

Significant advantages include low radar cross-section to make detection difficult, and the ability to fly lower and faster than other aircraft with a larger payload.

The craft's comprehensive electronic countermeasures package detects enemy radar and missiles attacking from the rear. It defends the aircraft by applying appropriate countermeasures, such as electronic jamming or expendable chaff and flares. The defensive package has a reprogrammable modular, digital design that allows changes to be made in flight to counter new or changing threats.

Differences between the B-1B and its predecessor, the B-1A of the 1970s, are subtle, yet significant. Externally, only a simplified engine inlet, modified over-wing fairing and relocated pitot tubes are noticeable. Other less evident changes include a window for the offensive and defensive systems officers' station and engine housing modifications that reduce radar exposure.

The B-1B has been structurally redesigned to increase its gross takeoff weight from 395,000 to 477,000 pounds (179,171 to 216,367 kilograms), which permits the B-1B to carry a wide variety of nuclear and conventional munitions.

The most significant changes are in the advanced avionics.

INVENTORY:
There are 94 B-1Bs in the active duty force.

(more)

BACKGROUND:
The first B-1B was delivered to the Air Force at Dyess Air Force Base, Texas, in June 1985, with initial operations on Oct. 1, 1986. The final B-1B was delivered May 2, 1988. The Air Force has full complements of B-1Bs at Dyess AFB, Texas; Ellsworth AFB, S.D.; Grand Forks AFB, N.D.; and McConnell AFB, Kan.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak St., Langley AFB, VA 23665-2191; (804) 764-5007.

GENERAL CHARACTERISTICS

Primary function:	Long-range, multi-role, heavy bomber
Builder:	Air frame, Rockwell International, North American Aircraft; offensive avionics, Boeing Military Airplane; defensive avionics, AIL Division
Unit cost:	$200 million plus
Power plant:	Four General Electric F-101-GE-102 turbofan engines with afterburner
Thrust:	30,000+ pounds (13,500 kg) with afterburner per engine
Length:	147 feet (44.8 meters)
Wingspan:	137 feet (41.8 meters) extended forward, 78 feet (23.8 meters) swept aft
Height:	34 feet (10.4 meters)
Weight:	Empty, approximately 185,000 pounds (84,090 kg)
Maximum takeoff weight:	477,000 pounds (214,650 kilograms)
Speed:	900-plus miles per hour (mach 1.2, 1,440 km per hour)
Range:	Intercontinental, unrefueled
Endurance:	With refueling, crew endurance
Ceiling:	30,000 feet (9,000 meters)
Crew:	Four (aircraft commander, copilot, offensive systems officer defensive systems officer)
Armament:	Up to 84 Mark 82 conventional 500-pound (225 kg) bombs; external hard points for an additional 12 weapons; can be reconfigured to carry a range of nuclear weapons
Date deployed:	June 1985

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

B-2 ADVANCED TECHNOLOGY BOMBER

SERVICE: Air Force
DESCRIPTION:
The B-2 is a multi-role advanced technology bomber with stealth characteristics.
FEATURES:
The B-2's low-observable, or stealth, characteristics give it the ability to penetrate an enemy's most sophisticated defenses.

This low observability allows it to fly more flexible routes at higher altitudes, thus increasing its range and providing a better field of view for the crew and the aircraft's sensors. The low-observability traits of the B-2 include greatly reduced infrared, acoustic, electromagnetic, visual and radar signatures. These signatures make it extremely difficult for even the most sophisticated defensive systems to detect, track and engage the bomber.

Many aspects of the stealth feature remain classified. However, the B-2's composite materials, special coatings and flying wing design all contribute to its stealth.

INVENTORY:
20 B-2s are planned for the Air Force.

BACKGROUND:
The First B-2 rolled out of its hangar at Air Force Plant 42, Palmdale, Calif., in November 1988. Its first flight was July 17, 1989.

Whiteman Air Force Base, Mo., will be the B-2's operational base, with initial operational capability scheduled for the mid-1990s.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007.

(more)

GENERAL CHARACTERISTICS

Primary function:	Multi-role bomber
Contractors:	(Contractor Team) Northrop B-2 Division (prime contractor), Boeing Military Airplanes Co., LTV Aircraft Products Group and General Electric Aircraft Engine Group
Power plant:	Four General Electric F-118-GE-100 engines
Unit cost:	$865 million
Thrust:	19,000 pounds (8,550 kg) each engine
Length:	69 feet (20.9 meters)
Height:	17 feet (5.1 meters)
Wingspan:	172 feet (52.12 meters)
Speed:	High subsonic
Ceiling:	50,000 feet
Maximum takeoff weight:	376,000 pounds (169,200 kg)
Range:	Intercontinental, 6,900 miles (6,000 nautical miles, 11,040 km), unrefueled
Armament:	Nuclear (short-range attack missiles, gravity weapons) or conventional bomb loads
Crew:	Two, with provision for a third
Date deployed:	Now in full-scale development and testing

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

B-52 STRATOFORTRESS

SERVICE: Air Force

DESCRIPTION:
Air Combat Command's first-line long-range heavy bomber

FEATURES:
The Boeing B-52 Stratofortress is built to fly at high subsopnic speeds at altitudes up to 50,000 feet, carrying conventional or nuclear weapons. In adition to bombing missions, it can perform maritime operations and is highly effective when used for ocean surveillance, monitoring 140,000 square miles of ocean surface in two hours. It also assists the Navy in anti-ship and mine layinbg operations.

B-52s are equipped with an electro-optical viewing system that uses forward-looking infrared and low-light-level television sensors to augment its terrain-avoidance system, further improving low-level flight capability.

Beginning in 1989, selected B-52s were modified with a global positioning system that gave them enhanced, worldwide precision navigation capability.

Aerial refueling gives the B-52 a range limited only by crew endurance. The G model's unrefueled range is more than 7,500 miles (12,000 km), while the H model, with more efficient engines, has a unrefueled range beyond 8,800 miles (14,200 km).

The aircraft's flexibility was evident during the Vietnam War and the Persian Gulf War, in which, after three decades of service, it was the first aircraft to strike Iraqi forces on Jan. 16, 1991. B-52s dropped approximately one third of the total tonnage of bombs delived by U.S. air forces during Operation Desert Storm. They struck wide-area troop concentrations. fixed installations and bunkers. and destroyed the morale of Iraq's Republican Guard.

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BACKGROUND:
For almost 40 years, B-52 Stratofortresses have made up the United States' primary manned strategic bomber force.

The B-52A first flew in 1954 and the B model entered service in 1955. A total of 744 B-52s were built with the last one, an H model, delivered in October 1962. only G and H models are still in the Air Force inventory.

G models were delivered in February 1959, the Air Force's first missile carrying bomber. It featured a shorter tail fin, a redesigned wing with integral fuel tanks and fixed under-wing tanks. It can carry 20 AGM-69 attack missiles, six under each wing and eight in the bomb bay. Some G models have been modified to carry other missiles, including the AGM-84 Harpoon anti-ship missile.

The first of 102 H models was delivered to Strategic Air Command in May 1961. These were modified to carry missiles, including a bomb bay rotary launcher that can carry eight additional AGM-86B cruise missiles in addition to its external load of six under each wing.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, Va., 23665-2191; 804-764-5007.

GENERAL CHARACTERISTICS

Primary Function:	Heavy bomber
Contractor:	Boeing Military Airplane Co.
Power plant:	Eight Pratt & Whitney Engines; G models, J-57 turbojets; H models, TF-33 turbofans
Thrust:	B-52G, up to 13,750 pounds per engine; B-52H, up to 17,000 pounds per engine
Length:	G model, 160 feet, 11 inches (49 meters); H model, 159 feet, 4 inches (48.5 meters)
Height:	40 feet 8 inches (12.4 meters)
Wingspan:	185 feet (56.4 meters)
Speed:	650 mph (1,040 kmph)
Ceiling:	50,000 feet
Weight:	Approx. 185,000 pounds (83,250 kg) empty
Maximum takeoff weight:	488,000 pounds (219,000 kg)
Range, unrefueled:	G model, 7,500 miles (6,522 nautical miles, 12,000 km); H model, 8,800 miles (7,652 nautical miles, 14,080 km)
Armament:	Approx 70,000 pounds of mixed ordnance—bombs, short-range attack missiles and mines; some modified to carry cruise missiles and anti-ship missiles
Crew:	Five (aircraft commander, pilot, radar-navigator, navigator and electronics warfare officer
Accomodations:	Six ejection seats
Unit cost:	$64 million (G models)
Date deployed	February 1959

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

C-2A GREYHOUND

SERVICE: Navy

DESCRIPTION:
Twin-engine cargo aircraft, designed to land on aircraft carriers.

FEATURES:
The C-2A Greyhound provides critical logistics support to aircraft carriers. Its primary mission is carrier on-board delivery. Powered by two T-6 turboprop engines, the C-2A can deliver a payload of up to 10,000 pounds. The cabin can readily accommodate cargo, passengers or both. It is also equipped to accept litter patients in medical evacuation missions.

Priority cargo such as jet engines can be transported from shore to ship in a matter of hours. A cage system or transport stand provides cargo restraint for loads during carrier launch or landing.

The large aft cargo ramp and door and a powered winch allow straight-in rear cargo loading and downloading for fast turnaround.

The C-2A's open-ramp flight capability allows airdrop of supplies and personnel from a carrier-launched aircraft. This, plus its folding wings and an on-board auxiliary power unit for engine starting and ground power self-sufficiency in remote areas provide an operational versatility found in no other cargo aircraft.

BACKGROUND:
The original C-2A aircraft were overhauled, and their operational life extended, in 1973. In 1984, a contract was awarded for 39 new C-2A aircraft to replace the earlier airframes. Dubbed the Reprocured C-2A due to the similarity to the original, the new aircraft include substantial improvements in airframe and avionic systems. All the older C-2As were phased out in 1987, and the last of the new models was delivered in 1990. During the period November 1985 to February 1987, VR-24 operating with 7 Reprocured C-2As demonstrated exceptional operational readiness while delivering 2 million pounds of cargo, 2 million pounds of mail and 14,000 passengers in support of the European and Mediterranean theatres.

POINT OF CONTACT:
Public Affairs Office, Naval Air Systems Command (AIR 07D2), Washington, D.C. 20361-0701 (703) 746-3791.

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GENERAL CHARACTERISTICS

Primary function:	Carrier-on-board delivery (COD) aircraft
Contractor:	Grumman Aerospace Corp.
Unit Cost:	$38.96 million
Propulsion:	Two Allison T-56-A-425 turboprop engines; 4,600 shaft horsepower each
Length:	57 feet 7 inches (17.3 meters)
Wingspan:	80 feet 7 inches (24.2 meters)
Height:	17 feet (5 meters)
Weight:	Max gross, take-off: 57,000 lbs (25,650 kg)
Cruising Speed:	Max: 300 knots (345 miles, 553 km, per hour)
Ceiling:	30,000 feet (9,100 meters)
Range:	1,300 nautical miles (1,495 statute miles)
Crew:	Four

C-5A/B GALAXY

SERVICE: Air Force

DESCRIPTION:
The C-5 Galaxy, a four-engine Lockheed transport aircraft, is the largest airplane in the free world.

FEATURES:
The C-5 is almost as long as a football field and as high as a six-story building, with a cargo compartment about the size of an eight-lane bowling alley. It is designed to provide massive strategic airlift to deploy and supply combat and support forces. It can carry unusually large and heavy cargo anywhere in the world at jet speeds.

The C-5 can take off and land on relatively short runways and taxi on substandard surfaces during emergency operations. Its front and rear cargo openings allow it to be loaded and offloaded at the same time. Both nose and rear doors open the full width and height of the cargo compartment, allowing drive-through loading and unloading of wheeled and tracked vehicles, and faster, easier handling of bulky equipment. A "kneeling" landing-gear system lowers the aircraft's cargo floor to truck-bed height. The entire cargo floor has a roller system for rapid handling of palletized equipment. Thirty-six fully loaded standard pallets can be loaded in about 90 minutes.

The Galaxy's weight is distributed on its high flotation landing gear, which has 28 wheels. The landing gear system can raise each set of wheels individually for simplified tire changes or brake maintenance.

Except in unusual circumstances, the C-5 does not carry troops in the cargo compartment. The upper-deck rear troop compartment has seats for 73 passengers.

The forward upper deck accommodates a crew of six, a relief crew of six, and eight couriers or other personnel. The flight deck has work stations for the pilot, copilot, two flight engineers and two loadmasters. The upper deck's forward and rear compartments have galleys for food preparation and lavatories.

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INVENTORY:
There are 70 C-5s in the active duty force, 28 in the Reserve force and 11 in the Air National Guard.

BACKGROUND:
The first C-5A was delivered to a training unit at Altus Air Force Base, Okla., in December 1969. The first operational C-5s were delivered to Charleston Air Force Base, S.C., in June 1970. In December 1984, the 433rd Tactical Airlift Wing (now 433rd Airlift Wing) at Kelly Air Force Base, Texas, became the first Air Force Reserve wing equipped with C-5s.

The first C-5B, incorporating significant improvements such as strengthened wings and updated avionics, was delivered to Altus AFB in January 1986. C-5 production concluded with delivery of the last "B" model aircraft in April 1989.

POINT OF CONTACT: Air Mobility Command, Building 1905, Room 118, 502 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4502.

GENERAL CHARACTERISTICS

Primary function:	Massive strategic airlift
Contractor:	Lockheed-Georgia Co
Unit Cost:	C-5A, $163.4 million; C-5B, $167.7 million
Power plant:	Four General Electric TF39-GE-1C turbofan engines
Thrust:	41,000 pounds (18,450 kg) per engine
Length:	247 feet, 10 inches (75.3 meters)
Height at tail:	65 feet, 1 inch (19.8 meters)
Maximum takeoff weight:	769,000 pounds (346,500 kg)
Maximum wartime takeoff weight:	840,000 pounds (378,000 kg)
Takeoff/landing distances:	12,200 feet (3,697 meters) takeoff fully loaded; 4,900 feet (1,485 meters) landing fully loaded
Wingspan:	222 feet, 9 inches (67.9 meters)
Stabilizer span:	68 feet, 9 inches (20.8 meters)
Cargo compartment:	Height 13 feet, 6 inches (4.10 meters); width 19 feet (5.76 meters); length 144 feet 6 inches (43.9 meters)
Range:	5,940 miles (5,165 nautical miles/9,504 kilometers) empty
Ceiling:	34,000 feet with a 605,000-pound (272,250 kg) load
Speed:	541 mph (Mach 0.72/865.6 kmph)
Load:	291,000 pounds (130,950 kg) maximum wartime payload
Crew:	Six (pilot, copilot, two flight engineers, two loadmasters)
Date deployed:	December 1969 (training); June 1970 (operational)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

C-9 NIGHTINGALE / SKYTRAIN

SERVICES: Air Force, Navy and Marine Corps

AIR FORCE MISSION:
The C-9A/C is a twin-engine, medium-range, swept-wing jet aircraft used primarily for the Air Mobility Command's aeromedical evacuation mission.

NAVY MISSION:
The C-9B Skytrain is used for fleet logistic support, intratheater airlift and airlifting Naval Reservists to and from training sites.

FEATURES:
The Nightingale is a modified version of the McDonnell Douglas DC-9. It is the only aircraft in the inventory specifically dedicated to the movement of litter and ambulatory-patients. The C-9A is capable of carrying 40 litter patients, 40 ambulatory and four litter patients, or various combinations.

A hydraulically operated folding ramp allows for efficient loading and unloading of litter patients and special medical equipment. The plane has ceiling receptacles for securing intravenous bottles, a special care area with a separate ventilation system for patients requiring isolation or intensive care, and eleven vacuum and therapeutic oxygen outlets in sidewall service panels. A 28-volt outlet is located in the special care area, and 22 standard electrical outlets throughout the cabin permit the use of cardiac monitors, respirators, incubators and infusion pumps. A medical refrigerator preserves whole blood and biological drugs. A medical supply work area is complete with sink, medicine storage section and work table, fore and aft galleys and lavatories. Aft-facing commercial airline-type seats are available for ambulatory patients. A station for a medical crew director includes a desk communication panel and a control panel to monitor cabin temperature, therapeutic oxygen and vacuum system. An auxiliary power unit provides electrical power for uninterrupted cabin air conditioning, quick servicing during stops, and self-starting for the two jet engines.

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INVENTORY:
There are 10 Nightingales in the active duty force, 27 C-9B Skytrains assigned to Naval Reserve squadrons and two Skytrains assigned to the Marine Corps.

POINTS OF CONTACT:
Air Force: Air Mobility Command; Public Affairs Office, Bldg. 1905, Room 15, 502 Scott Drive, Scott AFB, IL 62225-531;(618) 256-5003; **Navy:** Public Affairs Office (AIR-07D), Naval Air Systems, Washington, DC 20361-0701; (703) 746-3785; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492

GENERAL CHARACTERISTICS

Primary function:	C-9A/C: Aeromedical evacuation; C-9B: cargo transport
Contractor:	McDonnell Douglas Corp.
Unit cost:	$35 million
Thrust:	Two Pratt & Whitney JT8D-9A turbofan engines; 14,500 pounds (6,525 kg) each engine
Length:	119 feet 3 inches (35.7 meters)
Wingspan:	93 feet 3 inches (27.9 meters)
Height:	27 feet 5 inches (8.2 meters)
Maximum takeoff weight:	108,000 pounds (48,600 kg)
Range:	More than 2,000 miles (1,739 nautical miles or 3,200 km)
Basic weight:	65,283 pounds (29,369 kg) in passenger configuration; 59,706 pounds (26,868 kg) in cargo configuration.
Ceiling:	37,000 ft
Speed:	565 mph (Mach 0.86/904 km/h) at 25,000 feet (7,500 meters), with maximum takeoff weight
Load:	40 litter patients or four litters and 40 ambulatory patients or other combinations
Crew:	C-9A/C, eight (pilot, copilot, flight mechanic, two flight nurses, three aeromedical technicians); C-9B, two pilots plus cabin attendants
Date deployed:	August 1968
Unit cost:	$17 million

C-12F HURON

SERVICE: Air Force

DESCRIPTION:
The C-12F, a twin turboprop passenger and cargo aircraft, is the military version of the Beechcraft Super King Air.

FEATURES:
The C-12F can carry up to eight passengers and has a cargo capacity of 56 cubic feet. It can be used to transport patients on medical evacuation litters.

INVENTORY:
There are 19 C-12Fs in the active duty force.

BACKGROUND:
Delivery began in May 1984 and was completed by the end of that year.

POINT OF CONTACT:
Air Mobility Command, Building 1905, Room 118, 502 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4502.

GENERAL CHARACTERISTICS

Primary function:	Passenger and cargo airlift
Builder:	Beech Aircraft Corp.
Unit cost:	$2 million
Power plant:	Two Pratt & Whitney Aircraft of Canada PW-PT6A-42 turboprop engines
Horsepower:	850 shaft horsepower each engine
Length:	43 feet, 10 inches (13.3 meters)
Height:	15 feet (4.55 meters)
Wingspan:	54 feet, 6 inches (16.52 meters)
Speed:	290 knots (334 miles, 538 km, per hour)
Ceiling:	35,000 feet
Maximum takeoff weight:	15,000 pounds (6,750 kg)
Range:	620 miles (539 nautical miles/992 km)
Maximum load:	8 passengers or 2,647 pounds (1,191 kg) cargo
Crew:	2 (aircraft commander, co-pilot)
Date deployed:	May 1984

C-20A/B GULFSTREAM III

SERVICE: Air Force

DESCRIPTION:
The C-20 Gulfstream III is a twin-engine, turbofan aircraft acquired to fill airlift mission for high-ranking government and Defense Department officials.

INVENTORY:
There are 10 in the active duty force. Seven C-20s, B models, fly special air missions at the 89th Airlift Wing at Andrews Air Force Base, Md.

BACKGROUND:
The C-20 was chosen in June 1983 as the replacement aircraft for the C-140B Jetstar, and three A models were delivered to the 89th Airlift Wing under an accelerated purchase plan. The three C-20As at Andrews AFB were later transferred to Ramstein Air Base, Germany, and all C-140s at both locations were phased out of the Air Force inventory.

POINT OF CONTACT:
Air Mobility Command, Building 1905, Room 118, 502 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4502

GENERAL CHARACTERISTICS

Primary function:	operational support airlift and specialair missions
Builder:	Gulfstream Aerospace Corp.
Unit cost:	$22.2 million
Power plant:	Two Rolls-Royce Spey MK511-8 turbofan engines
Thrust:	11,400 pounds (5,050 kg) each engine
Length:	83 feet, 2 inches (25.2 meters)
Height:	24 feet, 6 inches (7.4 meters)
Wingspan:	77 feet, 10 inches (23.6 meters)
Maximum cruising speed:	561 miles per hour (487 nautical miles/897.6 km per hour)
Ceiling:	45,000 ft.
Maximum takeoff weight:	69,700 pounds (31,365 kg)
Range:	4,715 miles (4,100 nautical miles/7,544 km)
Load:	14 passengers
Accommodations:	Passenger/crew shower
Crew:	Five
Date deployed:	1983

C-21A

SERVICE: Air Force

DESCRIPTION:
The C-21A (Learjet Model 35), is a twin-engine short-range jet cargo carrier.
In addition to providing cargo and passenger airlift, the C-21A can transport litters during medical evacuations.

FEATURES:
The C-21A can carry eight passengers or 3,150 pounds (1428 kg) of cargo. The fuel capacity of the C-21A is 6,237 pounds (2,829 kg) carried in wingtip tanks.

INVENTORY:
There are 70 in the active duty force and four in the Air National Guard at Andrews AFB, Md.

BACKGROUND:
Delivery of the C-21 began in April 1984 and was completed in October 1985.

POINT OF CONTACT:
Air Mobility Command, Building 1905, Room 118, 502 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4502.

GENERAL CHARACTERISTICS

Primary function:	Passenger and cargo airlift
Builder:	Learjet Inc.
Unit cost:	$2.8 million
Power plant:	Two Garrett TFE-731-2-2B turbofan engines
Thrust:	3,500 pounds (1,575 kg) each engine
Length:	48 feet, 7 inches (14.71 meters)
Height:	12 feet, 3 inches (3.71 meters)
Maximum takeoff weight:	18,300 pounds (8,235 kg)
Wingspan:	39 feet, 6 inches (11.97 meters)
Range:	2,306 miles (2,005 nautical miles, 3,690 km)
Speed:	530 miles per hour (461 knots, 848 km per hour)
Crew:	Two (aircraft commander and copilot)

C-22B

SERVICE: Air National Guard

DESCRIPTION:
The C-22B, the military version of the Boeing 727, is the primary medium-range aircraft used by the Air National Guard and National Guard Bureau to airlift personnel.

FEATURES:
The C-22B's unique arrangement of leading-edge devices and trailing-edge flaps permits lower approach speeds, thus allowing operation from runways never intended for a 600-miles per hour (960 kmph) aircraft.

Fuel is contained in three main tanks inside the wing center section. Rapid pressure fueling and defueling are accomplished at the fueling station on the right wing. The total fuel capacity is approximately 50,000 pounds (22,500 kg).

There are four crew members and three to four in-flight passenger specialists.

INVENTORY:
There are four in the Air National Guard.

BACKGROUND:
The C-22B was introduced by the airline industry in 1963 and was innovative design with its three turbofan engines.

POINT OF CONTACT:
National Guard Bureau, Public Affairs Office, Pentagon, Rm 1D645, Washington DC; (202) 694-0421

GENERAL CHARACTERISTICS

Primary function:	Passenger transportation
Builder:	Boeing
Power plant:	Three JT8D-7 turbofan engines
Thrust:	14,000 pounds (6,300 kilograms) each engine
Length:	133 feet, 2 inches (40.3 meters)
Height:	34 feet, (10.3 meters)
Wingspan:	108 feet (32.7 meters)
Maximum take-off weight:	170,000 pounds (76,500 kilograms)
Maximum payload:	20,000 pounds (9,000 kilograms)
Maximum Speed:	619 miles per hour (Mach 0.82/990 kilometers per hour)
Range:	2,000 miles (1,739 nautical miles/3,200 kilometers)
Endurance:	5.5 hours
Crew:	Pilot, co-pilot, flight engineer, flight mechanic, and three to four in-flight passenger specialists
Date deployed:	1963

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

C-130 HERCULES

INCLUDES:
AC-130 Spectre Gunship
EC-130 Electronics aircraft
HC-130 Combat Shadow refueler
MC-130 Combat Talon
WC-130 Weather aircraft

SERVICE: Air Force, Navy, Marine Corps, Coast Guard

DESCRIPTION:
The C-130 Hercules, a four-engine turboprop aircraft affectionately known world-wide as "Herky," is the workhorse of the military services. Capable of landing and taking off from short, rough dirt runways, it is a people and cargo hauler, and used in a wide variety of other roles, such as gunships, weather watchers, tankers, firefighters and aerial ambulances. There are more than 40 versions of the Hercules, and it is used by more than 50 nations.

AIR FORCE MISSION:
The C-130 primarily is the intratheater Air Force's airlifter. It is the main transport for dropping paratroops and equipment into hostile or remote areas. Much of today's airdrop technology originated with C-130s.

OTHER MISSIONS:
The Marine Corps uses the HC-130 for in-flight refueling of fighter aircraft and helicopters, and tactical transport. Air Force Reserve units use the WC-130 in their Storm Tracker fleet of weather plotters. Two Navy C-130 "Herkys" are assigned to the National Science Foundation, and equipped with skis as well as wheels for operations in support of scientific research in Antarctica, and the Coast Guard uses HC-130s for its law enforcement and search and rescue missions.

AC-130 Spectre Gunship

BACKGROUND:
Four decades have elapsed since the Air Force's Tactical Air Command issued its original design specification, yet the remarkable C-130 remains in production. Deliveries of the C-130A began in December 1956 and the first B models came on board in April 1959. Congress recently authorized the purchase of several H models to replace the aging models still in the inventory.

INVENTORY:
There are 98 in active duty units, 606 in the Air Force Reserve and 173 in the Air National Guard. The Marine Corps has 70 HC refueling models in active and reserve units.

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CAPACITY:
The C-130 accommodates 92 combat troops or 64 fully equipped paratroops on side-facing seats. For medical evacuations, it carries 74 litter patients and two medical attendants. Paratroops exit the aircraft through rear doors on each side of the aircraft. Cargo airdrops go off the rear ramp. In cargo configuration it accommodates five standard Air Force cargo pallets.

POINT OF CONTACT:
Air Force: Air Mobility Command, Public Affairs Office, Bldg. 1905, Room 15, Scott Drive, Scott AFB, Ill. 62225-5317, (618) 256-4502; **Navy:** Public Affairs Office, Naval Air Syustems Command (AIR 07D2), Washington DC, 20361-0701, (703) 746-3791; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775, (703) 614-1492; **Coast Guard:** U.S. Coast Guard Commandant, G-P Public Affairs, Washington, D.C. 20593; (202) 267-1933.

GENERAL CHARACTERISTICS

Primary function:	Global airlift
Contractor:	Lockheed Aeronautical Systems Company, Marietta, Ga.
Power plant:	Four Allison T56-A-15 turboprops; each 4,300 horsepower
Thrust:	(Horsepower) each engine:AC-130A:3,750 hp; AC-130H:4,910 hp
Length:	97 feet, 9 inches (29.3 meters)
Height:	38 feet, 3 inches (11.4 meters)
Wingspan:	132 feet, 7 inches (39.7 meters)
Speed:	374 mph (Mach 0.57/604.4 kmph) at 20,000 feet
Ceiling:	33,000 feet with 100,000 pounds (45,000 kg) payload
Maximum takeoff weight:	155,000 pounds (69,750 kg)
Range:	2,350 miles (2,050 nautical miles/3,770 km) with maximum payload; 2,500 miles (2,174 nautical miles/4,000 km) with 25,000 pounds (11,250 kg) cargo; 5,200 miles (4,522 nautical miles/8,320 km) with no cargo
Unit cost:	Average $44.1 million
Crew:	Five (two pilots, navigator, flight engineer and loadmaster)
Capacity:	Up to 92 troops or 64 paratroops or 74 litter patients or five standard freight pallets

SPECIFIC CHARACTERISTICS, AC-130 SPECTRE GUNSHIP

Primary function:	Gunship: Close air support, interdiction, armed reconnaissance
Unit cost:	AC-130A, $30.9 million; AC-130H, 46.6 million
Ceiling:	25,000 feet
Speed:	300 mph (480 kmph)
Armament:	AC-130A, two 7.62mm miniguns, two 20mm Vulcan cannons, two 40mm Bofors cannons; AC-130H, two 20mm Vulcan cannons, one 40mm Bofors cannon and one 105mm howitzer
Date deployed:	AC-130A, 1968; AC-130H, 1972
Crew:	14: pilot, co-pilot, navigator, fire control officer, electronic warfare officer, flight engineer, loadmaster, lowlight TV operator, infrared detection set operator, five aerial gunners.

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SPECIFIC CHARACTERISTICS, EC-130

Primary function: EC-130ABCCC: Airborne battlefield command and control center
EC-130E Volant Solo: Psycological operations broadcasting (operated by 193rd Special Operations Group, Pennsylvania ANG, Harrisburg, Pa.)
EC-130H Compass Call: communications jammer, operated by electronic combat squadrons
Other data: Same as C-130 H models

SPECIFIC CHARACTERISTICS, HC-130 N/P COMBAT SHADOW REFUELERS

Primary function: Air refueleing of helicopters for special operations forces
Fuel capacity: Up to 13,000 gallons (49,400 liters), depending on model
Unit cost: $16.5 million
Crew: Eight (Aircraft commander, copilot, two navigators, flight engineer, communications systems operator, two loadmasters
Date deployed: 1986
Other data: Same as basic C-130

SPECIFIC CHARACTERISTICS, MC-130 E/H COMBAT TALON

Primary function: Airdrop, airland and resupply special operations forces
Unit cost: E model, $40.1 million; H model, $55.6 million
Crew: E model, nine (aircraft commander, co-pilot, two navigators, electronics warfare officer, two loadmasters, one flight engineer, one communications specialist); H model, seven (AC, co-pilot, EWO, two loadmaasters, one flight engineer)
Date deployed: E model, 1966; H model, June 1991
Other data: Same as basic C-130

SPECIFIC CHARACTERISTICS, WC-130 WEATHER RECON AIRCRAFT

Primary function: Weather reconnaissance
Endurance: 18 hours at 300-plus mph (261 knots, 480 kmph)
Auxiliary fuel tanks: two external, 1,400 gallon; one 1,800 gallon internal
Special equipment: Omega Dropsonde system, a 2½-foot long cylinder dropped over the ocean from the aircraft at regular intervals that records pressure,temperature, wind speed and direction as it descends to the ocean's surface
Crew: Six (Aircraft commander, copilot, navigator, Dropsonde operator, weather officer, flight engineer
Inventory: Six E models and six H models, all operated by Air Force Reserve "Storm Trackers" out of Keesler AFB, Miss.
Cost: Approx. $13 million, 1960 dollars

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

C-141A/B STARLIFTER

SERVICE: Air Force

DESCRIPTION:
The C-141 Starlifter is a four-engine long range transport.

FEATURES:
The Starlifter fulfills the vast spectrum of airlift requirements through its ability to haul cargo or airlift combat forces over long distances, paradrop or land those forces and their equipment, resupply ground forces and extract sick and wounded to advanced medical facilities.

It has paratroop doors on each side and a rear loading ramp, and can be used for low-altitude delivery of paratroops and equipment or high-altitude delivery of paratroops. It can airdrop equipment and suppliers using the container delivery system.

It is the first aircraft designed to be completely compatible with the palletized material handling system, which permits offloading of 68,000 pounds (30,844 kg) of cargo, refueling and reloading a full load, all in less than an hour.

The C-141B is a stretched C-141A with in-flight refueling capability. The cargo compartment was lengthened 23 feet, 4 inches, which increased its cargo capacity by 20 percent, from 10 to 13 standard pallets.

The air refueling capability of the C-141B allows it to take on about 158,066 pounds (71,848 kg) of fuel in about 26 minutes.

The C-141 has an all-weather landing system and a pressurized cabin and flight deck. Its cargo compartment can be easily modified to perform about 30 different missions. About 200 troops or 155 fully equipped paratroops can sit in canvas side-facing seats, or 166 troops in rear-facing airline seats. Rollers in the aircraft floor allow quick and easy cargo pallet loading. A palletized lavatory and galley can be installed quickly to accommodate passengers, and when palletized cargo is not being carried, the roller strips can be turned over to leave a smooth, flat surface for loading vehicles.

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In its aeromedical evacuation role, the Starlifter can carry 103 litter patients, 113 ambulatory patients or a combination of both. It provides rapid transfer of the sick and wounded from overseas areas to hospitals in the United States.

INVENTORY:
There are 241 C-141s in the active duty force, 12 in the Reserve and 16 in the Air National Guard.

BACKGROUND:
The Starlifter was the first jet aircraft designed to meet military standards as a troop and cargo carrier.The first C-141A was delivered to Tinker Air Force Base, Okla., in October 1964. Soon after operations commenced in April 1965, almost-daily flights were made by Starlifters to Southeast Asia, carrying troops, equipment and supplies and returning patients to U.S. hospitals.

Several C-141s have been modified to carry the Minuteman intercontinental ballistic missile up to a total weight of 92,000 pounds (41,400 kilograms). Some C-141s have been equipped with electronic controls that enable a flight of two to 36 aircraft to maintain formation regardless of visibility.

The C-141 was the first jet transport from which U.S. Army paratroopers jumped, and the first to land in the Antarctic. A C-141 established a world record for heavy cargo drops of 70,195 pounds.

The first C-141B was received by the Air Force in December 1979. Conversion of 270 C-141s from A to B models was completed in 1982.

The Air Force Reserve, through its associate units, provides 50 percent of the Starlifter's airlift crews and 40 percent of its maintenance capability, and flies more than 30 percent of Air Mobility Command's worldwide missions.

The first Air National Guard and Air Force Reserve units to receive the C-141 as unit equipment became operational in fiscal year 1987. These units are at Jackson, Miss., and Andrews Air Force Base, Md.

During Desert Shield and Desert Storm, a C-141 from the 437th Military Airlift Wing, Charleston AFB, S.C., was the first American aircraft into Saudi Arabia, transporting an Airlift Control Element from the 438th Military Airlift Wing, McGuire AFB, N.J. In the following year, C-141s completed the most airlift missions—7,047 of the total 15,800 flown—supporting the Gulf War. They carried more than 41,400 passengers and 139,600 tons of cargo.

The C-141 force, nearing seven million flying hours, has a proven reliability and long-range capability.

POINT OF CONTACT:
Air Mobility Command, Building 1905, Room 118, 502 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4502

GENERAL CHARACTERISTICS

Primary function:	Long-range troop and cargo airlift
Contractor:	Lockheed-Georgia Co.
Unit cost:	$8.1 million
Power plant:	Four Pratt & Whitney TF33-P-7 turbofan engines
Thrust:	20,250 pounds (9,112 kg) each engine
Length:	168 feet, 4 inches (51 meters)
Height:	39 feet, 3 inches (11.9 meters)
Wingspan:	160 feet (48.5 meters)
Speed:	500 mph (Mach 0.66, 800 kmph)
Ceiling:	41,000 feet
Maximum takeoff weight:	323,100 pounds (145,395 kg)
Range:	2,500 miles (2,174 nautical miles, 4,000 km)
Crew:	Six (aircraft commander, co-pilot, two loadmasters, two flight engineers)
Date deployed:	C-141A, May 1964; C-141B, December 1979

DEPARTMENT OF DEFENSE

THE UNITED STATES **FACT FILE**

E-2C HAWKEYE

SERVICE: Navy

DESCRIPTION:
The E-2C Hawkeye is the Navy's all-weather, carrier-based tactical warning and control system aircraft.

FEATURES:
The Hawkeye provides all-weather airborne early warning and command and control functions for the carrier battle group. Additional missions include surface surveillance coordination, strike and interceptor control, search and rescue guidance and communications relay. An integral component of the carrier air wing, the E-2C uses computerized sensors to provide early warning, threat analyses and control of counteraction against air and surface targets.

BACKGROUND:
Carrier-based E-2C Hawkeyes directed F-14 Tomcat fighters flying combat air patrol during the two-carrier battle group joint strike against terrorist-related Libyan targets in 1986. E-2Cs and AEGIS cruisers, working together, provided total air mass superiority over the American fleet.

More recently, E-2Cs provided the command and control for successful operations during the Persian Gulf War, directing both land attack and combat air partrol missions over Iraq and providing control for the shoot-down of two Iraqi MIG-21 aircraft by carrier-based F/A-18s in the early days of the war.

E-2 aircraft also have worked extremely effectively with U.S. law enforcement agencies in drug interdictions.

E-2C aircraft entered U.S. Navy service with Airborne Early Warning Squadron 123 at NAS Norfolk, Va., in November 1973.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (202) 746-3791

(more)

GENERAL CHARACTERISTICS

Primary function:	Airborne early warning, command and control
Contractor:	Grumman Aerospace Corp.
Unit cost:	$51 million
Propulsion:	Two Allison T-56-A427 turboprop engines; (5,000 shaft horsepower each)
Length:	57 feet 6 inches (17.5 meters)
Wingspan:	80 feet 7 inches (28 meters)
Height:	18 feet, 3 inches (5.6 meters)
Weight:	Max take-off gross: 53,000 pounds (23,850 kg) 40,200 lbs basic (18,090 kg)
Speed:	300+ knots (345 miles, 552km, per hour)
Ceiling:	30,000 feet
Crew:	five
Armament:	None
Date deployed:	First flight: October 1960
Operational:	January 1964

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

E-3 SENTRY (AWACS)

SERVICE:
Air Force

DESCRIPTION:
The E-3 Sentry is an airborne warning and control system (AWACS) aircraft.

FEATURES:
The E-3 Sentry is a modified Boeing 707 commercial airframe with a rotating radar dome. The dome is 30 feet in diameter and six feet thick, mounted 11 feet above the fuselage. It contains a radar subsystem that permits surveillance from the Earth's surface up into the stratosphere, over land or water. The radar has a range of more than 200 miles for low-flying targets and farther for aerospace vehicles flying at medium to high altitudes. It can look down to detect, identify and track enemy and friendly low-flying aircraft by eliminating ground clutter returns that confuse other radar systems.

Position and tracking information on enemy aircraft and ships, and location and status of friendly aircraft, naval vessels and ground troops can be sent to major command and control centers in rear areas or aboard ships instantly, and, in time of crisis, forwarded to the national command authorities in the United States.

In support of air-to-ground operations, the E-3 Sentry can provide direct information needed for interdiction, reconnaissance, airlift and close-air support for friendly ground forces. It can also provide information for commanders of air operations to gain and maintain control of the air battle.

As an air defense system, the E-3s can detect, identify and track airborne enemy forces far from the boundaries of the United States or NATO countries, and can direct fighter-interceptor aircraft to these enemy targets.

Experience has proven that the E-3 Sentry can respond quickly and effectively to a crisis and support worldwide military deployment operations. It is a jam-resistant system that has performed missions while experiencing heavy electronic countermeasures.

The E-3 Sentry is a flexible and survivable system. With its mobility as an airborne warning and control system, it has a greater chance of surviving in warfare than a fixed, ground-based radar system. Among other things, the E-3s flight path can quickly be changed according to mission and survival requirements.

The E-3 Sentry can fly a mission profile for more than 11 hours without refueling. Its range and on-station time can be increased through use of inflight refueling and an on-board crew rest area.

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BACKGROUND:
Engineering, test, and evaluation began on the first E-3 Sentry in October 1975. The 552nd Airborne Warning and Control Wing (now 552nd Air Control Wing) at Tinker Air Force Base, Okla., received the first E-3s in March 1977.

NATO has acquired 18 of the aircraft and support equipment. The first E-3 was delivered to NATO in January 1982. The United Kingdom and France have acquired a total of 11 E-3 aircraft, seven and four respectively.

E-3 Sentry aircraft were among the first to deploy during Operation Desert Shield where they immediately established an around-the-clock radar screen to defend against Iraqi aggression. During Desert Storm, E-3s flew more than 400 missions and logged more than 5,000 hours of on-station time. They provided radar surveillance and control to more than 120,000 coalition sorties. In addition to providing senior leadership with time-critical information on the actions of enemy forces, the E-3 controllers assisted in 38 of the 40 air-to-air kills recorded during the conflict.

For the first time in the history of aerial warfare, an entire air war has been recorded. This was due to the data collection capability of the E-3 radar and computer subsystems.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-5562; (804) 764-5007.

GENERAL CHARACTERISTICS

Primary function:	Airborne surveillance, command, control and communications
Builder:	Boeing Aerospace Co.
Power plant:	Four Pratt and Whitney TF33-PW-100A turbofan engines
Thrust:	21,000 pounds (9,450 kg) each engine
Length:	145 feet, 6 inches (44 meters)
Wingspan:	130 feet, 10 inches (39.7 meters)
Height:	41 feet, 4 inches (12.5 meters)
Rotodome:	30 feet in diameter (9.1 meters), 6 feet thick (1.8 meters), mounted 11 feet (3.33 meters) above fuselage
Speed:	Optimum cruise 360 miles per hour (Mach 0.48, 576 km per hour)
Ceiling:	Above 29,000 feet (8,788 meters)
	Maximum takeoff weight: 347,000 pounds (156,150 kg)
Endurance:	More than 11 hours (unrefueled)
Unit cost:	Approximately $180 million
Crew:	Flight crew of four plus mission crew of 13 to 19 specialists (mission crew size varies according to mission)
Date deployed:	March 1977

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

E-4B AIRBORNE COMMAND POST

SERVICE: Air Force

DESCRIPTION: The E-4B aircraft serves as the national emergency airborne command post.

FEATURES: The E-4B, a military version of the 747-200, is a four-engine, long-range, high-altitude aircraft. In case of national emergency, it provides a modern, highly survivable, command center from which to direct U.S. strategic forces.

The main deck is divided into functional compartments including work areas, conference room, briefing room, operations and rest areas. The E-4B crew may include up to 114 people, including a flight crew and operations, maintenance, security and communications teams.

The E-4B has enhanced nuclear, thermal and electromagnetic pulse protection and a wide variety of new communications and other technical systems.

INVENTORY: Four

BACKGROUND:
The E-4B evolved from the E-4A, which had been in service since late 1974. The first B model was delivered to the Air Force in January 1980. Conversion of three E-4 aircraft to B models was completed in March 1985.

ACC provides air crew, maintenance, security and communications support. The Defense Department's Joint Staff controls E-4B operations and provides personnel for the airborne command center.

To provide direct support to the national command authorities, at least one E-4B with a fully manned battle staff is always on alert at one of many selected bases throughout the world.

POINT OF CONTACT: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

(more)

GENERAL CHARACTERISTICS

Primary function:	Airborne command post
Builder:	Boeing Aerospace Co.
Unit cost:	$258 million
Power plant:	Four General Electric CF6-50E2 turbofan engines
Thrust:	52,500 pounds (23,625 kg) each engine
Length:	231 feet, 4 inches (70.5 meters)
Wingspan:	195 feet, 8 inches (59.7 meters)
Height:	63 feet, 5 inches (19.3 meters)
Maximum takeoff weight:	800,000 pounds (360,000 kg)
Endurance:	12 hours (unrefueled)
Ceiling:	Above 30,000 feet
Crew:	Up to 114
Date deployed:	January 1980

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

E-6A TACAMO

SERVICE: Navy

DESCRIPTION:
Provide secure, survivable, jam-resistant strategic communications relay for fleet ballistic missile submarines.

BACKGROUND:
Boeing derived this aircraft from its commercial 707 to replace the aging EC-130Q and perform the Navy's TACAMO mission of linking ballistic missile forces with national command authority during time of crisis. The aircraft carries a low frequency communication system and wire antenna several thousand feet long that is winched in and out of the aircraft. The first E-6 was accepted by the Navy in August 1989.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS

Primary Function:	Airborne command post for fleet ballistic missile submarines
Contractor:	Boeing
Unit cost:	$141.7 million
Propulsion:	Four CFM-56-2A-2 High bypass turbofans with 24,000 lbs (10800 kg.) thrust each
Length:	150 feet, 4 inches (45.8 meters)
Wingspan:	148 feet, 4 inches (45.2 meters)
Height:	42 feet, 5 inches (12.9 meters)
Weight:	Max gross, take-off: 341,000 pounds (153,900 kg.)
Ceiling:	Above 40,000 feet
Speed:	522 knots, 600 miles (960 km.) per hour
Crew:	14
Range:	6,600 nautical miles (7,590 statute miles, 12,144 km.) with 6 hours loiter time
Armament:	None

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

EA-6B PROWLER

SERVICES: Navy and Marine Corps

DESCRIPTION:
An aircraft system that provides an umbrella of protection over strike aircraft and ships by jamming enemy radar, electronic data links and communications.

FEATURES:
The EA-6B Prowler is a twin engine, mid-wing aircraft manufactured by Grumman Aerospace Corp. as a modification of the basic A-6 Intruder air frame.

Designed for carrier and advanced base operations, the Prowler is a fully integrated electronic warfare system combining long-range, all-weather capabilities with advanced electronic countermeasures.

A forward equipment bay and pod-shaped fairing on the vertical fin house the additional avionics equipment.

The side-by-side cockpit arrangement gives maximum efficiency, visibility and comfort.

BACKGROUND:
The primary mission of the aircraft is to support air strikes and ground troops by degrading enemy electronic activity.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791. Headquarters U.S. Marine Corps, Division of Public Affairs, Washington D.C. 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Electronic countermeasures
Contractor:	Grumman Aerospace Corporation
Propulsion:	Two Pratt & Whitney J52-P408 engines (11,200 pounds thrust each)
Length:	59 feet 10 inches (17.7 meters)
Wingspan:	53 feet (15.9 meters)
Height:	16 feet 3 inches (4.9 meters)
Weight:	Take-off max gross: 61,000 pounds (27,450 kg.) Empty weight: 32,162 pounds (14,473 kg.)
Speed:	Over 500 knots (575 miles, 920 km per hour)
Range:	Over 1,000 nautical miles (1150 km) 1840 km)
Ceiling:	37,600 feet
Crew:	Four (pilot, three electronic counter-measures officers)
Armament:	AGM-88A HARM missile
Date deployed:	First flight: May 25, 1968 Operational: July, 1971

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

F-4G/RF-4C PHANTOM II

SERVICE:
Air Force and Air National Guard

DESCRIPTION:
The F-4 Phantom II is an all-weather, tactical fighter-bomber, now specializing in the supression of air defenses.

While F-4 models previously in the force could perform three tactical air roles—air superiority, interdiction and close air support—its mission has been narrowed to specializing in the defense suppression role.

The F-4G "Advanced Wild Weasel," the only model still in the active Air Force inventory, seeks out and suppresses or destroys enemy radar-directed, anti-aircraft artillery batteries and surface-to-air missile sites.

The RF-4C is a multi-sensor, long-range, reconnaissance version of the F-4C.

FEATURES:
F-4Gs are E models modified with sophisticated electronic warfare equipment in place of the internally mounted 20mm gun. The F-4G can carry more weapons than previous Wild Weasel aircraft and a greater variety of missiles as well as conventional bombs. The primary weapon of the F-4G, however, is the AGM-88 high speed anti-radiation missile (HARM). Other munitions include cluster bombs and AIM-65 Maverick and air-to-air missiles.

The RF-4C has multiple optical and infrared systems that are operated from the rear seat. The infrared sensor locates targets under cover or at night by detecting heat sources and heat differentials. The sensor is

especially suited for night reconnaissance tasks in high-threat areas.

INVENTORY:
There are 134 F-4Gs in the active duty force and 24 F-4Gs and 84 RF-4Cs in the Air National Guard.

BACKGROUND:
The F-4C first flew for the Air Force in May 1963. The Air National Guard began flying the F-4C in January 1972. The Air Force Reserve received its first Phantom II in June 1978.

The first F-4E was delivered to the Air Force in October 1967. The Air National Guard received its first F-4E in 1985, the Air Force Reserve in 1987. This model, with an additional fuselage fuel tank, leading-edge slats for increased maneuverability, and an improved engine, also has an internally mounted 20mm multibarrel gun with improved fire-control system.

Starting in 1973, F-4Es were fitted with target identification systems for long-range visual identification of airborne or ground targets. Each system is basically a television

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camera with a zoom lens to aid in positive identification, and a system called Pave Tack Stem, which provides day and night all-weather capability to acquire, track and designate ground targets.

The F-4G "Advanced Wild Weasel," which inherited most of the features of the F-4E, passes target information to the aircraft's missiles. Working in "hunter-killer" teams of two aircraft, such as F-4G and F-16C, the F-4G "hunter" can detect, identify, and locate enemy radars and then direct weapons to the site. The technique was effectively used during Operation Desert Storm against enemy surface-to-air missile batteries.

Primary armament includes Shrike (AGM-45) and HARM (AGM-88). F-4Gs deployed to Saudi Arabia also were equipped with ALQ-131 and ALQ-184 electronic countermeasures pods.

RF-4Cs also deployed in support of Desert Storm.

AIR FORCE POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

AIR NATIONAL GUARD POINT OF CONTACT:
National Guard Bureau, Public Affairs Office, Pentagon, Room 1D645, Washington, D.C. 20310-2500; (202) 693- 0421

GENERAL CHARACTERISTICS

Primary function:	All-weather tactical fighter-bomber and reconnaissance
Contractor:	McDonnell Aircraft Co., McDonnell Douglas Corp.
Cost:	$18.4 million for the F-4G
Power plant:	Two General Electric turbojet engines with afterburners
Thrust:	17,900 pounds (7,955 kg)
Length:	62 feet, 11 inches (19.1 meters)
Height:	16 feet, 5 inches (5 meters)
Wingspan:	38 feet, 11 inches (11.8 meters)
Speed:	More than 1,600 miles per hour (Mach 2, 2,560 km per hour)
Ceiling:	60,000 feet
Maximum takeoff weight:	F-4G, 62,000 pounds (27,900 kg); RF-4C, 58,000 pounds (26,100 kg)
Range:	1,300 miles+ (1,130 nautical miles/2,080 km)
Armament:	Four AIM-7E/F Sparrow and four AIM-9L Sidewinder missiles; AGM-65 Maverick missiles, AGM-88 HARM missile capability, and one fuselage centerline bomb rack and four pylon bomb racks capable of carrying 12,500 pounds (5,625 kg) of general purpose bombs
Crew:	Two (pilot and weapons systems operator)
Date deployed:	May 1963 (C model)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

F-14 TOMCAT

SERVICE: Navy

DESCRIPTION:
The F-14 Tomcat is the Navy's first line fighter aircraft.

FEATURES:
The F-14 is a supersonic, twin-engine, variable sweep wing, two-place fighter, designed to attack and destroy enemy aircraft in all weather conditions and at night. It can track up to 24 targets simultaneously with its advanced weapons control system, and attack six with Phoenix AIM-54A missiles while continuing to scan the airspace. Armament also includes a mix of other air intercept missiles, rockets and bombs.

BACKGROUND:
The Grumman F-14, the world's premier air defense fighter, was designed to replace the F-4 Phantom II fighter (phased out in 1986). F-14s provided air cover for the joint strike on Libyan terrorist-related targets in 1986.

The F-14A was introduced in the mid-1970s. The upgraded F-14A+ version, which has new GE F-110 engines, is now widespread throughout the fleet, and is more than a match for enemy fighters in close-in, air combat.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington DC 20361-0701; (202) 746-3791

(more)

GENERAL CHARACTERISTICS

Function:	Carrier-based multi-role strike fighter
Contractor:	Grumman Aerospace Corporation
Unit cost:	$38 million
Propulsion:	F-14A: Two Pratt & Whitney TF-30P-414A turbofan engines with afterburners F-14B and F-14D: Two General Electric F-110-GE-400 augmented turbofan engines with afterburners
Thrust:	F-14A: 20,900 pounds (9,405 kg) static thrust per engine F-14B,F-14D: 27,000 pounds (12,150 kg) per engine
Length:	61 feet 9 inches (18.6 meters)
Height:	16 feet (4.8 meters)
Maximum takeoff weight:	72,900 pounds (32,805 kg)
Wingspan:	64 feet (19 meters) unswept, 38 feet (11.4 meters) swept
Ceiling:	Above 50,000 feet
Speed:	Mach 2+
Crew:	Pilot and radar intercept officer
Armament:	Up to 13,000 lbs of AIM-54s, AIM-7s, AIM-9s, air-to-ground ordnance, and one Mk-61A1 Vulcan 20mm cannon
Date deployed:	First flight: December 1970 Operational: January 1973

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

F-15 EAGLE

SERVICE: Air Force

DESCRIPTION:
The McDonnell-Douglas F-15 Eagle is an all-weather, extremely maneuverable, deep penetrator dual role fighter.

FEATURES:
The F-15 has electronic systems and weaponry to detect, acquire, track, and attack enemy aircraft.

The F-15's superior maneuverability and acceleration are achieved through high engine thrust-to-weight ratio and low wing loading; the ratio of aircraft weight to wing area, enables the aircraft to turn tightly without losing airspeed.

The multimission avionics system sets the F-15 apart from other fighter aircraft. In addition to advanced radar and flight systems, it has a tactical electronic-warfare system, "identification friend or foe" system, electronic countermeasures and a central digital computer.

The head-up display projects on the windscreen all essential flight information to allow the pilot to track and destroy an enemy aircraft without having to shift his vision to cockpit instruments.

The F-15's versatile pulse-Doppler radar system can look up or down at high-or low-flying targets without being confused by ground clutter. The radar feeds target information into the central computer for effective weapons delivery and close-in dogfights.

The F-15 uses combinations of four different air-to-air weapons: AIM-7 Sparrow missiles, AIM-120 Air-to-Air Missiles (AMRAAM), AIM-9 Sidewinder missiles and an internal 20mm Gatling Gun.

INVENTORY:
There are 403 in the active duty force and 126 in the Air National Guard.

BACKGROUND:
The first flight of the F-15A was in July 1972, and the first flight of the two-seat F-15B (formerly TF-15A) trainer was in July 1973. In January 1976, the first F-15 destined for a combat squadron was delivered to the 1st Tactical Fighter Wing at Langley Air Force Base, Va.

The single-seat F-15C and two-seat F-15D models entered the Air Force inventory beginning in 1979.

F-15Cs, Ds and Es were deployed to the Persian Gulf in 1991 in support of Operation Desert Storm where they proved their superior combat capability with a confirmed 26-to-0 kill ratio.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak St., Langley Air Force Base, Va. 23665-5000; (804) 764-5471

(more)

GENERAL CHARACTERISTICS:

Primary function:	Tactical fighter
Contractor:	McDonnell Douglas Corp.
Cost:	$26 million (average)
Power Plant:	Two Pratt & Whitney F100-PW-100 turbofan engines with afterburners; F-15E: F100-PW-220 or 229 turbofan engines
Thrust:	25,000 pounds (11,340 kg) each engine
Length:	63 feet, 9 inches (19.43 meters)
Height:	18 feet, 8 inches (5.69 meters)
Wingspan:	42 feet, 10 inches (13.06 meters)
Speed:	1,875 miles per hour (Mach 2.5-plus at sea level, 2,880 km per hour)
Ceiling:	65,000 feet
Maximum takeoff weight:	68,000 pounds (30,844 kg)
Range:	3,450 miles (3,000 nautical miles, 6,520 km) ferry range with auxiliary fuel tanks
Armament:	One M-61A1 20mm Gatling gun mounted internally with 940 rounds of ammunition; four AIM-9L/M Sidewinder and four AIM-7F/M Sparrow missiles, or a combination of AIM-9L/M, AIM7-F/M and AIM-120 missiles
Crew:	A and C models, one; B and D models, two
Date deployed:	July 1972

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

F-16 FIGHTING FALCON

SERVICE: Air Force and Navy

DESCRIPTION:
High-performance fighter aircraft.

MISSION:
The F-16 Fighting Falcon is a compact, multi-role fighter aircraft. It is highly maneuverable and has proven itself in air-to-air combat and air-to-surface attack. It provides a relatively low-cost, high-performance weapon system.

The Navy uses the F-16N as an "adversary" aircraft against which Navy and Marine Corps pilots train in an environment simulating the real world of aerial combat. The F-16 is flown by the U.S. Air Force Flight Demonstration Team (Thunderbirds).

FEATURES:
In an air combat role, the F-16's maneuverability and combat radius (the distance it can fly to enter air combat, stay, fight, and return) exceed that of all potential threat fighter aircraft. It can locate targets in bad weather conditions and detect low flying aircraft in radar ground clutter. In an air-to-surface role, the F-16 can fly more than 500 miles (800 km), deliver its weapons with superior accuracy, defend itself against enemy aircraft and return to home base. A bad-weather capability allows it to strike a target in adverse conditions.

The cockpit and its bubble canopy are designed to give the pilot unobstructed forward and upward vision, and greatly improved vision to the side and rear.

Avionics systems include a highly accurate inertial navigation system in which a computer provides steering information to the pilot. The plane also has a warning system and modular countermeasure pods to be used against airborne or surface electronic threats.

AIR FORCE INVENTORY: There are 804 in the active duty force, 150 in the Reserve force, and 634 in the Air National Guard.

BACKGROUND:
The F-16A, a single-seat model, first flew in December 1976. The first operational F-16A was delivered in January 1979 to the 388th

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Tactical Fighter Wing at Hill Air Force Base, Utah.

The F-16B, a two-seat model, has two tandem cockpits that are about the same size as the one in the A model. Its bubble canopy extends to cover the second cockpit. To make room for the second cockpit, the forward fuselage fuel tank and avionics growth space were reduced. During training the forward cockpit is used by a student pilot with an instructor pilot in the rear cockpit.

The F-16C and F-16D aircraft, which are the single- and two-place counterparts to the F-16A/B, incorporate the latest cockpit control and display technology.

Currently, most active units have converted to the F-16C/D while existing A and B models will replace older aircraft in Air National Guard and Air Force Reserve units.

The F-16 is being built under an unusual agreement creating a consortium between the United States and four NATO countries; Belgium, Denmark, the Netherlands and Norway. These countries and the United States co-produced an initial 348 F-16s for their air forces. Final airframe assembly lines were located in Belgium and the Netherlands. The consortium's F-16s are assembled from components manufactured in all five countries. Belgium also provides final assembly of the F100 engine used in the European F-16s. The long-term benefits of this program will be technology transfer among the nations producing the F-16, and a common-use aircraft for NATO nations. Through this program the supply and availability of repair parts in Europe is increased and improves the F-16's combat readiness.

USAF F-16 multi-mission fighters were deployed to the Persian Gulf in 1991 in support of Operation Desert Storm where it flew more sorties than did any other aircraft. These fighters were used to attack airfields, military production facilities, Scud missile sites and a variety of other targets.

NAVY BACKGROUND:

The Navy uses several aircraft to provide realistic air combat maneuvering training. The Naval Fighter Weapons School, commonly referred to as Top Gun, at Miramar, Calif., is a center of air-to-air combat expertise. The Navy uses the F-16N at Top Gun to teach the Navy's best fighter pilots how to become proficient at air combat maneuvering while developing and proving new air superiority tactics. The newest adversary fighters is the Navy variant of the F-16 Fighting Falcon, the F-16N. The performance characteristics of the F-16N closely match those of the latest MiG aircraft.

POINTS OF CONTACT:

Air Force: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley Air Force Base, Va. 23665-5000; (804) 764-5471; **Navy:** Public Affairs Office (AIR-07D), Naval Air Systems Commands, Washington, DC 20361-0701; (703) 746-3785.

GENERAL CHARACTERISTICS

Primary function:	USAF, attack fighter; Navy, adversary fighter
Contractor:	General Dynamics Corp.
Power plant:	F-16A/B, Pratt and Whitney F100-PW-200 turbofan engine with afterburner; F-16C/D, Pratt & Whitney F100-PW-200/220 or General Electric F110-GE-100 turbofan engine with afterburner; F-16N, F110-GE-100

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Thrust:	A and B models, 24,000 pounds (10,800 kg); C and D models, 27,000 pounds (12,150 kg)
Length:	49 feet, 5 inches (14.8 meters)
Height:	16 feet (4.8 meters)
Wingspan:	32 feet, 8 inches (9.8 meters)
Speed:	1,500 mph (Mach 2 at sea level, 2,400 kmph)
Ceiling:	Above 50,000 feet
Maximum takeoff weight:	37,500 pounds (16,875 kg)
Range:	More than 2,000 miles ferry range (1,740 nautical miles, 1,200 km)
Armament:	One M-61A1 20mm multi-barrel cannon with 500 rounds; external stations can carry up to six AIM-9 Sidewinder missiles, conventional air-to-air and air-to-surface munitions and electronic countermeasure pods
Unit cost:	Average procurement cost is about $16 million
Crew:	A, B and N models, one; C and D, two
Date deployed:	January 1979

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

F/A-18 HORNET

SERVICES: Marine Corps and Navy

DESCRIPTION:
All-weather fighter and attack aircraft.

FEATURES:
The F/A-18 Hornet, an all-weather aircraft, is used as an attack aircraft as well as a fighter. In its fighter mode, the F/A-18 is used primarily as a fighter escort and for fleet air defense; in its attack mode, it is used for force projection, interdiction and close and deep air support.

BACKGROUND:
The F/A-18 demonstrated its capabilities and versatility during Operation Desert Storm, shooting down enemy fighters and subsequently bombing enemy targets with the same aircraft on the same mission, and breaking all records for tactical aircraft in availability, reliability and maintainability. The aircraft's survivability was proven by Hornets taking direct hits from surface-to-air missiles, recovering successfully, being repaired quickly, and flying again the next day.

The F/A-18 is a twin engine, mid-wing, multi-mission tactical aircraft. The F/A-18A and C are single seat aircraft. The F/A-18B and D are dual-seaters. The B model is used primarily for training, while the D model is the primary Navy aircraft for attack, tactical air control, forward air control and reconnaissance squadrons.

All F/A-18s can be configured quickly to perform either fighter or attack roles or both, through selected use of external equipment to accomplish specific missions. This "force multiplier" capability gives the operational commander more flexibility in employing tactical aircraft in a rapidly changing battle scenario. The fighter missions are primarily fighter escort and fleet air defense; while the attack missions are force projection, interdiction, and close and deep air support.

The F/A-18C and D models are the result of a block upgrade in 1987 incorporating provisions for employing updated missiles and jamming devices against enemy ordnance. C and D models delivered since 1989 also include an improved night attack capability.

The single-seat F/A-18 Hornet is the nation's first strike-fighter. It was designed for traditional strike applications such as interdiction and close air support without compromising its fighter capabilities. With its excellent fighter and self-defense capabilities, the F/A-18 at the same time increases

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strike mission survivability and supplements the F-14 Tomcat in fleet air defense.

F/A-18 Hornets are currently operating in 37 tactical squadrons from air stations world-wide, and from 10 aircraft carriers. It is proudly flown by the U.S. Navy's Blue Angels Flight Demonstration Team.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Public Affairs, Washington, D.C. 20380-1775; (703) 614-1492. Public Affairs Office, Naval Air Systems Command (AIR 07D2), Washington, DC 20361-0701; (202) 746-3791

GENERAL CHARACTERISTICS

Primary function:	Multi-role attack and fighter aircraft
Contractor:	Prime:McDonnell Douglas Major Subcontractor: Northrop
Unit cost:	$24 million
Propulsion:	Two F404-GE-400 low bypass turbofan engines
Thrust:	16,000 pounds static thrust per engine
Length:	56 feet (16.8 meters)
Height:	15 feet 3 inches (4.6 meters)
Maximum takeoff weight:	Fighter:36,628 pounds (164,826 kg); Attack:51,900 pounds (233,550 kg)
Wingspan:	40 feet, 5 inches (13.5 meters)
Range (w/external tanks):	Fighter:1,379 nautical miles (1585.9 miles/2,537 km); Attack: 1,333 nautical miles (1532.9 miles/2,453 km)
Ceiling:	50,000+feet
Speed:	Mach 1.7+
Crew:	A,C and E models:One B,D and F models:Two
Armament:	One 20mm MK-61A1 Vulcan cannon; Fighter Mission:Sparrow III; Sidewinder Attack Mission:Conventional air-to-ground ordnance AGM 84, AGM 88
Date deployed:	First flight, November 1978; operational, February 1981

F-111, EF-111

SERVICE: Air Force

DESCRIPTION:
The F-111 is a supersonic tactical strike fighter-bomber.

The EF-111A Raven, a modified F-111A, is designed to provide electronic countermeasures support for tactical air forces. It is designed to detect, sort, identify and nullify different enemy radars.

F-111 FEATURES:
The F-111 has variable-sweep wings, allowing the pilot to fly from slow approach speeds to supersonic velocity at sea level and more than twice the speed of sound at higher altitudes. The wings angle from 16 degrees (full forward) to 72.5 degrees (full aft).

The two crew members sit side-by-side in a pressurized cockpit module that serves as an emergency escape vehicle and survival shelter on land or water. In emergencies, an explosive cutting cord separates the cockpit module from the aircraft. The module descends by parachute. The ejected module includes a small portion of the wing fairing to stabilize it during aircraft separation. Airbags cushion the impact and help keep the module afloat in water. The module can be released at any speed or altitude, and even under water.

The F-111's automatic terrain-following radar system flies the craft at a constant altitude following the earth's contours. It allows the aircraft to fly in valleys and over mountains, day or night, regardless of weather conditions. Should any of the nap-of-the-earth system's circuits fail, the aircraft automatically initiates a climb.

The F-111D has improved avionics with better navigation and air-to-air weapon delivery systems and newer turbofan engines. The F-111E has modified air intakes to improve the engine's performance at speeds above Mach 2.2. The F-111F has improved turbofan engines producing 35 percent more thrust than previous F-111A and E engines.

EF-111A FEATURES:
The EF-111A is a modified F-111A. The cockpit has been rearranged. The right seat crew member is an electronic warfare officer responsible for navigation, terrain-following flight and electronic warfare operations. The electronic warfare officer plans jamming tactics in advance, and then programs, operates and monitors the jamming system.

INVENTORY:
There are 225 F-111s and 40 EF-111s in the active duty force.

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BACKGROUND:
The F-111A, which began life as the TFX, flew for the first time in December 1964. The first operational F-111A was delivered in October 1967 to Nellis Air Force Base, Nev. A models, now retired, were used for tactical bombing in Southeast Asia.

The F-111B model was developed for the U.S. Navy, but was cancelled before production.

E models were deployed to Incirlik Air Base, Turkey, and were used in Operation Desert Storm. The last F model was delivered to the Air Force in November 1976. The F models have been modified to carry the Pave Tack system in their weapons bays. This system provides an improved capability to acquire, track and designate ground targets at night for delivery of laser, infrared and electro-optically guided weapons. The F-111F was proven in combat over Libya in 1986 and again over Iraq in 1991.

The G model is a converted FB-111A and is used in training role only.

The Royal Australian Air Force also flies the F-111C.

EF-111 BACKGROUND:
During Operation Desert Storm, all available EF-111As were deployed to Middle East bases. Well over 1,300 sorties were flown there, many of them penetrating deep into enemy territory. All major allied air attacks were supported by EF-111As that teamed with other Air Force and allied electronic combat units to cause a rapid collapse of the enemy air defense system. One EF-111A was lost in combat.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, Va. 23665-5562; (804) 674-5471

GENERAL CHARACTERISTICS, F-111

Primary function:	Multi-purpose tactical fighter-bomber
Contractor:	General Dynamics Corp., Fort Worth, Texas
Unit cost:	$18 million
Power plant:	F-111E - two Pratt & Whitney TF30-P103 turbofan engines
Thrust:	F-111E — 18,500 pounds (8,325 kg) ea. with afterburners; F-111D — 19,600 pounds (8,820 kg) with afterburners; F-111F — 25,000 pounds (11,250 kg) with afterburners
Length:	73 feet, 6 inches (22.0 meters)
Height:	17 feet, 1½ inches (5.13 meters)
Wingspan:	63 feet (19 meters) full forward; 31 feet, 11½ inches (11.9 meters) full aft
Speed:	Mach 1.2 at sea level; Mach 2.5 at 60,000 feet
Ceiling:	60,000-plus feet
Range:	3,565 miles (3,100 nautical miles, 5,704 km) with external fuel tanks
Weight:	empty 47,481 pounds (21,367 kg)
Maximum takeoff weight:	100,000 pounds (45,000 kg)
Armament:	Wing pylons carry 25,000 pounds (11,250 kg) of bombs, rockets, missiles or fuel tanks
Crew:	Two (aircraft commander and weapon systems officer or electronic warfare officer)
Date deployed:	October 1967

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GENERAL CHARACTERISTICS, EF-111

Primary function:	Electronic countermeasures support
Contractor:	Grumman Aerospace Corp.
Unit cost:	$35 million
Maximum takeoff weight:	89,000 pounds (40,050 kg)
Range:	2,000 miles (1,740 nautical miles, 3,200 km)
Sensors:	AN/ALQ-99E jamming subsystem
Date deployed:	June 1981

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

F-117A STEALTH FIGHTER

SERVICE: Air Force

MISSION:
The F-117A Stealth fighter is the world's first operational aircraft designed to exploit low-observable stealth technology.

FEATURES:
The unique design of the single-seat F-117A provides exceptional combat capabilities. About the size of an F-15 Eagle, the aircraft has quadruple redundant fly-by-wire flight controls and is air refuelable.

The F-117A can employ a variety of weapons and is equipped with sophisticated navigation and attack systems integrated into a digital avionics package that increases mission effectiveness and reduces pilot workload. Detailed planning for missions into highly defended target areas is accomplished by an automated mission planning system.

While making up only 2.5 percent of the theater combat assets during Operation Desert Storm, it attacked 31 percent of the first-day targets and was the only aircraft to bomb strategic targets in downtown Baghdad. Not one F-117 was hit by enemy defenses and it is believed that its stealth configuration made it unseen throughout Desert Storm.

INVENTORY: 56

BACKGROUND:
The first F-117A was delivered in 1982 and the last in the fall of 1990. The first flight was in 1981, only 31 months after the full-scale development decision. Air Combat Command's only F-117A unit, the 4450th Tactical Group (now the 49th Fighter Wing, Holloman AFB, N. M.), achieved initial operational capability in October 1983.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

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GENERAL CHARACTERISTICS:

Primary function:	Attack fighter
Contractor:	Lockheed Aeronautical System Co.
Cost:	$45 million
Power plant:	Two General Electric F-404 engines
Length:	65 feet 11 inches (20.3 meters)
Height:	12 feet 5 inches (3.8 meters)
Wingspan:	43 feet 4 inches (13.3 meters)
Speed:	High subsonic
Weight:	52,500 pounds (23,814 kg)
Range:	Unlimited with air refueling
Armament:	Internal weapons carriage
Crew:	One
Date deployed:	1982

HU-25 GUARDIAN

SERVICE: U.S. Coast Guard

DESCRIPTION:
Twin engine, fixed-wing; the Coast Guard's first multi-mission jet aircraft.

FEATURES:
The HU-25A Guardian's ability to operate from sea level to altitudes of 42,000 feet makes it suitable for Coast Guard's missions of search and rescue, drug interdiction and marine law enforcement. Key features include computer-controlled air navigation system, surveillance system operators console, surveillance camera and avionics adapted for oil pollution overflight detection.

In addition to these features, three HU-25Bs at Cape Cod, Mass., are equipped with an air eye avionics package and wing pads carrying side-looking radar (SALR). HU-25Cs have forward-looking infrared radar (FLIR) and air intercept radar (APG 66). These adaptations enhance the aircraft's ability to perform marine environmental protection, law enforcement and search and rescue missions.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-P, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS

Primary function:	Medium range multi-mission jet aircraft
Builder:	Air frame: Falcon Jet Corporation, subsidiary of Dassault-Brequet Aviation, Little Rock, Ark. Modification: Grumman Aircraft Corp.
Cost:	$4,996,251 (1983)
Power plant:	Twin Garrett AFT3-6 turbo fan engines
Length:	56 feet 3 inches (17.1 meters)
Height:	18 feet (5.5 meters)
Wingspan:	53 feet (16.3 meters)

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Takeoff thrust:	5,440 lbs (2,448 km)
Speed:	Cruise 350 knots (402.5 mph, 644 kmph) at sea level 380 knots (437 mph, 699 kmph) above 20,000 feet
Ceiling:	42,000 feet
Maximum take off weight:	32,000 lbs (14,400 kg)
Empty weight:	25,500 lbs (11,475 kg)
Range:	2,045 nautical miles (2351.8 statute miles) Low attitude
Fuel Capacity:	1,534 gallons (5829.2 liters)
Endurance:	5 hours 45 minutes
Crew:	Aircraft commander, co-pilot, three crewmen
Inventory:	32 in service and 9 in storage.
Operational date:	1982

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

KC-10 EXTENDER

SERVICE: Air Force

DESCRIPTION:
The KC-10 is the military version of the McDonnell-Douglas DC-10, configured as an aerial refueling tanker.

FEATURES:
Although its primary mission is aerial refueling, the KC-10 can combine the tasks of tanker and cargo aircraft by refueling fighters while carrying the fighters' support people and equipment on overseas deployments. The KC-10 can transport up to 75 people and some 170,000 pounds of cargo a distance of about 4,400 miles (7,040 kilometers). Without cargo, the KC-10's unrefueled range is more than 11,500 miles (18,400 kilometers).

In addition to DC-10 wing fuel tanks, the KC-10A has two large fuel tanks under the cargo floor, one under the forward lower cargo compartment and one under the rear compartment. Combined, the six tanks carry more than 356,000 pounds of fuel (160,200 kilogram)—almost twice as much as the KC-135 Stratotanker.

The large cargo door can accept most unit support equipment. The cargo compartment can accommodate loads ranging from 27 pallets to a mix of 17 pallets and 75 passengers.

BACKGROUND:
A modified DC-10, the KC-10 entered service in 1981. The Air Force currently has 59 Extenders. Although 88 percent of its systems are the same as the DC-10, it has additional systems and equipment necessary for its Air Force mission, including military avionics, aerial refueling boom, hose and drogue, seated aerial refueling operator station and aerial refueling receptacle. The KC-10A fleet currently is being modified to add wing-mounted pods to enhance its refueling capabilities.

POINT OF CONTACT:
Air Mobility Command, Public Affairs Office, Bldg. 1905 Room 15, 502 Scott Drive, Scott AFB, Ill. 62225-5317; (618) 256-4502

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GENERAL CHARACTERISTICS

Primary function:	Aerial refueling and cargo transport
Contractor:	McDonnell-Douglas Corp.
Unit cost:	$86.3 million
Power plant:	Three General Electric CF-6-50C2 turbofans
Thrust:	52,500 pounds (23,625 kg) each engine
Length:	181 feet, 7 inches (54.4 meters)
Height:	58 feet, 1 inches (17.4 meters)
Wingspan:	165 feet, 4½ inches (50 meters)
Speed:	619 miles (990.4 km) per hour
Ceiling:	42,000 feet
Maximum takeoff weight:	590,000 pounds (265,500 kg)
Range:	4,400 miles (3,800 nautical miles, 7,040 km) with cargo; 11,500 miles (10,000 nautical miles, 18,400 km) without cargo
Crew:	Four (aircraft commander, pilot, flight engineer, boom operator)
Date deployed:	March 1981

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

KC-135 STRATOTANKER

SERVICE: Air Force

DESCRIPTION:
The KC-135 Stratotanker's primary mission is aerial refueling support to other aircraft.

FEATURES:
Four turbojets, mounted under the wings, power the KC-135. Nearly all internal fuel can be pumped through the tanker's flying boom, the KC-135's primary fuel transfer method. A special shuttlecock-shaped drogue, a funnel-shaped device attached to and trailed behind the flying boom, is used to refuel aircraft fitted with probes.

A cargo deck above the refueling system holds passengers or cargo. Depending on fuel storage configuration, the KC135A can carry up to 83,000 pounds (29,350 kilograms) of cargo.

INVENTORY:
There are 457 in the active duty force, 158 in the National Guard and 30 in the Air Force Reserve.

BACKGROUND:
The Boeing 707 passenger plane and the KC-135A Stratotanker were both developed from the same prototype. In 1954, the Air Force purchased the first 29 of its future fleet of 732. The first aircraft flew in August 1956 and the initial-production Stratotanker was delivered to Castle Air Force Base, Calif., in June 1957. The last KC-135 was delivered to the Air Force in 1965.

In Southeast Asia, KC-135 Stratotankers made the air war different from all previous aerial conflicts. Mid-air refueling brought far-flung bombing targets within reach. Combat aircraft, no longer limited by fuel supplies, were able to spend more time over target areas.

The KC-135As are being modified with new engines. The re-engined tanker, designated the KC-135R, can offload 50 percent more fuel, is 25 percent cheaper to operate, and is 96 percent quieter than the KC-135A.

Under another modification program, all Air Force Reserve and Air National Guard tankers were equipped with different engines. The re-engined tanker, designated the

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KC-135E, is 14 percent more fuel efficient than the KC-135A and can carry 20 percent more fuel.

A new aluminum-alloy skin grafted to the underside of the wings will add 27,000 flying hours to the aircraft.

The KC-135 tanker fleet flew round-the-clock missions during Operation Desert Storm to keep allied warplanes in the air. They are the backbone of the Air Force tanker fleet.

POINT OF CONTACT:
Air Mobility Command, Public Affairs Office, Bldg. 1905, Room 15 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4502

GENERAL CHARACTERISTICS

Primary function:	Aerial refueling
Contractor:	Boeing Military Airplanes
Unit cost:	Ranges from $26.1 million (A-model) to $53 million (R model)
Power Plant:	A Model--P&W J57P-59W turbojet E Model--P&W JT3D-3B R Model--CFM 56-1B turbofan
Thrust:	22,224 pounds (10,000 kg) each engine
Length:	136 feet, 3 inches (40.8 meters)
Height:	38 feet, 4 inches (11.5 meters)
Wingspan:	130 feet, 10 inches (39.2 meters)
Speed:	Maximum speed at 30,000 feet, 610 miles 976 km) per hour
Ceiling:	50,000 feet
Weight:	119,231 pounds (53,654 kg) empty
Maximum takeoff weight:	322,500 pounds (145,125 kg)
Range:	11,192 miles (9,732 nautical miles, 17,907 km) with 120,000 pounds (54,000 kg) of transfer fuel
Crew:	Four or five and up to 80 passengers
Date deployed:	August 1956

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

OV-10 BRONCO

SERVICE: Marine Corps

DESCRIPTION:
A light attack aircraft used for aerial reconnaissance

FEATURES:
The OV-10 Bronco is a multi-purpose, light attack aircraft flown by Marine observation squadrons to conduct visual reconnaissance missions. The Bronco also provides transportation for aerial radiological reconnaissance, tactical air observers, artillery and naval gunfire spotting and airborne controllers of tactical air support operations. Other tasks include armed escort for helicopters and front line, low-level aerial photography.

The OV-10 can be used for short take-offs and landings on aircraft carriers without the use of catapults. With the second seat removed, it can carry 3,200 pounds of cargo, five paratroopers or two litter patients and an attendant.

INVENTORY:
Each of the Marine Corps' two observation squadrons has 18 aircraft, 9 OV-10As and 9 OV-10Ds night observation aircraft. There is also a Marine Air Reserve squadron.

The OV-10 will be phased out of the Marine Corps by FY95.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Multi-purpose, light attack aircraft to conduct visual aerial reconnaissance missions.
Contractor:	Rockwell International
Engines:	2 Garrett Research T76-G-10/10A/12/12A Turboprops
Power:	715 shaft horsepower per engine
Length:	41 feet, 7 inches (12.67 meters)
Height:	15 feet, 2 inches (4.62 meters)
Weight:	Empty: 6,969 pounds (3,164 kg) Loaded: 9,908 pounds (4,498 kg) Maximum: 14,466 pounds (6,568 kg)

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Wingspan:	40 feet (12.19 meters)
Range:	Attack role:228 nautical miles (262.2 miles) Ferry role:1,430 nautical miles (1644.5 miles)
Speed:	281 miles per hour (244.47 knots) clean at sea level
Load:	Bombs, rocket pods, or fuel tanks on five wing and fuselage stations
Crew:	One pilot, one observer
Armament:	Four 7.62mm machine guns

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

P-3C ORION

SERVICE: Navy

DESCRIPTION:
Lockheed four-engine propeller aircraft used as a submarine hunter and for surface surveillance.

FEATURES:
The P-3C is a land-based, long range antisubmarine warfare (ASW) patrol aircraft. It has advanced submarine detection sensors such as directional frequency and ranging (DIFAR) sonobuoys and magnetic anomaly detection (MAD) equipment.

The avionics system is integrated by a general purpose digital computer that supports all of the tactical displays, monitors and automatically launches ordnance and provides flight information to the pilots. In addition, the system coordinates navigation information and accepts sensor data inputs for tactical display and storage.

The P-3C can carry a mixed payload of weapons internally and on wing pylons.

BACKGROUND:
In February 1959, the Navy awarded Lockheed a contract to develop a replacement for the aging P-2 Neptune. The P-3V Orion entered the inventory in July 1962, and 30 years later it remains the Navy's sole land-based antisubmarine warfare aircraft.

It has gone through one designation change (P-3V to P-3) and three major models: P-3A, P-3B, and P-3C, the latter being the only one now in active service. The last Navy P-3 came off the production line at the Lockheed plant in April 1990.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

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GENERAL CHARACTERISTICS

Primary function:	Antisubmarine warfare
Contractor:	Lockheed-California Company
Unit cost:	$36 million
Propulsion:	Four Allison T-56-A-14 turboprop engines (4,910 shaft horsepower each)
Length:	116 feet 8 inches (35.56 meters)
Wingspan:	99 feet 7 inches (29.9 meters)
Height:	33 feet 8 inches (10.26 meters)
Weight:	Max gross take-off: 139,760 pounds (62892 kg.)
Speed:	480 knots (552 mph, 883.2 kmph)
Ceiling:	30,000 feet (9,000 meters)
Range:	Over 14 hours on mission
Crew:	12
Armament:	Harpoon (AGM-84) cruise missile; MK-46 torpedoes, depth charges, sono buoys; Bullpup air-to-ground missiles and mines up to around 20,000 pounds (9 metric tons) internal and external loads
Date deployed:	First flight: November 1959 Operational: August 1962 (P-3A) August 1969 (P-3C)

RG-8A CONDOR

SERVICE: U.S. Coast Guard

DESCRIPTION:
The RG-8A Condor is a single engine, two-seat, fixed-winged reconnaissance aircraft.

FEATURES:
The Condor's primary mission is electronic air detection of drug smuggling operations by air or sea. The Coast Guard also uses it for fisheries operations, marine environment operations, search and rescue operations and illegal migrant interdiction.

Key features include secure communications, forward looking radar and advanced navigational cockpit.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-P, Public Affairs, 2100 2nd. St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS

Primary function:	Drug interdiction
Builder:	Schweizer
Power plant:	Lycoming IO-540
Length:	28 feet (3.5 meters)
Height:	8 feet (2.4 meters)
Wingspan:	61.5 feet (18.7 meters)
Weight:	3250 lbs (1462.5 kg)
Speed:	Cruise 126 knots (144.9 mph) Maximum 165 knots (189.8 mph)
Ceiling:	10,000 feet
Range:	750 nautical miles (862.5 statute miles)
Fuel capacity:	410 lbs (184.5 kg)
Endurance:	8 hours
Crew:	Pilot and sensor operator
Cost:	Not available
Inventory:	Two, based in Miami, Fla.
Operational date:	1988

S-3 VIKING

SERVICE: Navy

DESCRIPTION:
Jet aircraft, used to hunt and destroy enemy submarines and provide surveillance of surface shipping. The ES-3 versison is fitted for electronic warfare and reconnaissance.

FEATURES:
The S-3A Viking replaced the S-2 Tracker and entered fleet service in 1974. The S-3 is a carrier based, subsonic, all-weather, long-range, multi-mission aircraft. It operates primarily with carrier battle groups in anti-submarine warfare zones. It carries automated weapon systems and is capable of extended missions with in-flight refueling.

BACKGROUND:
The last production S-3A was delivered in August 1978. The S-3A is currently being upgraded and will be designated the S-3B when modifications are completed in 1994. Also, 16 S-3As are being converted to ES--3As for carrier-based electronic reconnaissance.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS

Primary Function:	Antisubmarine warfare and sea surveillance
Contractor:	Lockheed-California Company
Unit cost:	$27 million
Propulsion:	Two General Electric TF-34-GE-400B turbofan engines (9,275) pounds thrust each)
Length:	53 feet 4 inches (16 meters)
Wingspan:	68 feet 8 inches (20.6 meters)

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S3-A VIKING

Height:	22 feet 9 inches (6.9 meters)
Weight:	Max design gross take-off: 52,539 pounds; (23,642.55 kg.) Empty: 27,789 pounds (12,505.05 kg.)
Speed:	450 knots (518 miles per hour, 828.8 kmph)
Ceiling:	40,000 feet
Range:	2,300+ nautical miles (2,645 statute miles, 4232 km.)
Armament:	Up to 3,958 pounds (1781.1 kg) of AGM-84 missiles, rockets, torpedos, mines, depth charges
Crew:	Four
Date Deployed:	First flight: Jan. 21, 1972 Operational:Feb. 1974

T-37 TWEET

SERVICE: Air Force

DESCRIPTION:
The T-37 Tweet is a twin-engine jet used for training undergraduate pilot, undergraduate navigator, and tactical navigator students in the fundamentals of aircraft handling and instrument, formation and night flying.

FEATURES:
The twin engines and flying characteristics of the T-37 give student pilots the feel for handling the larger, faster T-38 Talon or T-1A Jayhawk trainers later. The instructor and student sit side by side.

INVENTORY:
There are 541 in the active duty force.

BACKGROUND:
The T-37A made its first flight in 1955 and went into service with the Air Force in 1956. The T-37B became operational in 1959.

Well over 1,000 T-37s were built, and 541 remain in U.S. Air Force's inventory.

Many foreign air forces fly the T-37B. Students from 12 North Atlantic Treaty Organization (NATO) countries train in T-37Bs at Sheppard Air Force Base, Texas.

POINT OF CONTACT:
Air Training Command, Public Affairs Office, 100 H Street, Randolph AFB, TX 78150-5000; (210) 652-3946

GENERAL CHARACTERISTICS

Primary function:	Primary flight trainer
Builder:	Cessna Aircraft Co.
Cost:	$164,854
Power plant:	Two Continental J-69-T-25 turbojet engines
Thrust:	1,025 pounds (461.25 kg), each engine
Length:	29 feet, 3 inches (8.9 meters)
Height:	9 feet, 2 inches (2.8 meters)
Wingspan:	33 feet, 8 inches (10.2 meters)
Speed:	315 miles (504 km) per hour
Ceiling:	35,000 feet
Maximum takeoff weight:	6,625 pounds (2,981 kg)
Range:	460 miles (400 nautical miles, 736 km)
Armament:	T-37B: none; T-37C: provisions for external armament unit
Crew:	Two (instructor pilot and student)
Date deployed:	December 1956

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

T-38 TALON

SERVICE: Air Force

DESCRIPTION:
The T-38 Talon is a twin-engine, high-altitude, supersonic jet trainer used in a variety of roles because of its design, economy, ease of maintenance, performance, and safety record. The Air Training Command uses it for undergraduate pilot and pilot instructor training. Air Combat Command, Air Mobility Command, and the National Aeronautics and Space Administration also use the T-38.

FEATURES:
The instructor and student sit on rocket-powered ejection seats in a pressurized, air-conditioned cockpit. Critical components are waist high and can be easily reached by maintenance crews. Refueling and preflight inspections are easily performed.

The T-38 needs only 2,300 feet (690 meters) of runway for takeoff and can climb from sea level to nearly 30,000 feet in one minute.

BACKGROUND:
Student pilots fly the T-38A to learn supersonic techniques, aerobatics, formation, night and instrument flying and cross-country navigation. More than 60,000 pilots have earned their wings in the T-38A.

Air Force Materiel Command uses the T-38A to test experimental equipment such as electrical and weapon systems.

Pilots from most North Atlantic Treaty Organization countries are trained in the T-38A at Sheppard Air Force Base, Texas, through the Euro-NATO Joint Jet Pilot Training Program.

The National Aeronautics and Space Administration uses the T-38A as a trainer for astronauts and as an observer/chase plane.

Air Combat Command uses the T-38A for its Accelerated Co-pilot Enrichment Program. This program gives younger, less experienced bomber and tanker co-pilots a chance to develop the self-confidence and decision-making skills needed to become aircraft commanders. The command also uses a modified version, the AT-38B, to prepare pilots and weapon systems officers for fighter aircraft such as the F-4, F-15,

(more)

F-16, A-10 and F-111. This model carries external armament and weapons delivery equipment for training.

The Talon first flew in 1959.

INVENTORY:
More than 1,100 were delivered to the Air Force between 1961 and 1972 when production ended. Approximately 562 remain in service throughout the Air Force.

POINT OF CONTACT:
Air Training Command, Public Affairs Office, 100 H Street, Randolph AFB, TX 78150-5000; (210) 652-3946

GENERAL CHARACTERISTICS

Primary function:	Advanced jet pilot trainer
Builder:	Northrop Corp.
Unit Cost:	$756,000
Power plant:	Two General Electric J-85-GE-5 turbojet engines with afterburners
Thrust:	3,850 pounds (1,732.5 kg) with afterburners
Length:	46 feet, 4 inches (14 meters)
Height:	12 feet, 10 inches (3.8 meters)
Wingspan:	25 feet, 3 inches (7.6 meters)
Speed:	812 mph (mach 1.08 at sea level)
Ceiling:	Above 55,000 feet
Maximum takeoff weight:	12,093 pounds (5,200 kg)
Range:	1,000 miles (870 nautical miles/1,600 km)
Armament:	T-38A: none; AT-38B: has provisions for external armament
Crew:	Two (student and instructor)
Date deployed:	March 1961

T-41A/C MESCALERO

SERVICE: Air Force

DESCRIPTION:
The T-41 Mescalero, a short-range, high-wing trainer aircraft, is the military version of the Cessna 172. It is used primarily for pilot candidate screening.

FEATURES:
The T-41 trainer is equipped with avionics and other equipment consistent with military missions.

INVENTORY:
50 at Hondo, Texas, 50 at the U.S. Air Force Academy at Colorado Springs, Colo.

BACKGROUND:
The T-41A model is used by Air Training Command for preliminary flight screening of Air Force pilot candidates before their entry into undergraduate pilot training. A more powerful version, designated T-41C, is used for cadet flight training at the United States Air Force Academy. The screening is conducted at Hondo, Texas.

Pilot candidates train for approximately 14 hours in the T-41A before passing on to T-37 primary jet training at one of the six Air Force pilot training schools.

Between September 1964 and July 1965, The Air Force began receiving the T-41A in September 1964. The Air Force Academy acquired the T-41C in 1968 for use in its pilot indoctrination program, which allows cadets to experience in an aerial environment principles learned in other academic courses. Cadets in the program fly approximately 21.2 hours dual and solo, and receive their first U.S. Air Force flight check.

The Air Force plans to replace the T-41 with a more advanced aircraft capable of aerobatics beginning in 1993.

POINT OF CONTACT:
Air Training Command, Public Affairs Office, 100 H Street, Randolph AFB, Texas 78150-5000; (210) 652-3946

(more)

GENERAL CHARACTERISTICS

Primary function:	Flight screening and indoctrination for Air Force pilot candidates
Builder:	Cessna Aircraft Co.
Unit Cost:	$13,465
Power plant:	Continental piston engine
Thrust:	T-41A: 145 horsepower; T-41C: 210 horsepower
Length:	26 feet, 6 inches (8 meters)
Height:	8 feet, 11 inches (2.7 meters)
Wingspan:	36 feet, 2 inches (10.9 meters)
Speed:	138 miles (220 km) per hour
Ceiling:	16,000 feet
Maximum takeoff weight:	T-41A: 2,300 pounds (1,035 kg); T-41C: 2,500 pounds (1,125 kg)
Range:	T-41A: 695 miles (605 nautical miles, 1,112 km) at 10,000 feet (3,000 meters); T-41C - 690 miles (600 nautical miles/1,104 km) at 10,000 feet (3,000 meters)
Armament:	None
Crew:	Two (Instructor pilot and student)
Date deployed:	October 1964

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

T-43A

SERVICE: Air Force

DESCRIPTION:
The T-43A is a medium-range, twin-engine jet transport used in the Air Force's undergraduate navigator training program.

FEATURES:
The T-43A is the Air Force version of the Boeing 737. One jet engine is mounted under each wing. The military aircraft includes the addition of many small blade-type antennas, sextant ports, a wire antenna for high-frequency radio, and fewer windows. It is equipped with modern navigation and communications equipment to train aircraft navigators.

Inside each T-43A are 19 stations. All student consoles have two training stations. The large cabin allows easy access to seating and storage, and allows instructors to sit beside students for individual instruction.

The training compartment is equipped with advanced avionics gear identical to that of Air Force operational aircraft.

Four T-43s are configured for passengers and support commands they are assigned to.

INVENTORY:
There are 12 in the active duty force and four in the Colorado Air National Guard.

BACKGROUND:
The majority of the T-43A trainers are used in navigator training at Mather Air Force Base, Calif., where the Air Force also trains U.S. Navy and Marine navigators. The remaining planes are assigned to the Air National Guard at Buckley Air National Guard Base, Colo., where they are used for the U.S. Air Force Academy's airmanship program and provide travel sevice to academy sports teams.

The first T-43A was delivered to the Air Force at Mather in September 1973. The last deliveries were made in July 1974.

POINT OF CONTACT:
Air Training Command, Public Affairs Office, 100 H Street, Randolph AFB, TX 78150-5000; (210) 652-3946.

(more)

GENERAL CHARACTERISTICS

Primary function:	Navigator trainer
Builder:	The Boeing Co.
Unit Cost:	$5,390,000
Power plant:	Two Pratt & Whitney JT8D-9A engines
Thrust:	14,500 pounds (6,525 kg) each engine
Length:	100 feet (30.3 meters)
Height:	37 feet (11.2 meters)
Wingspan:	93 feet (28.2 meters)
Speed:	535 miles (856 km) per hour at 35,000 feet
Ceiling:	37,000 feet
Maximum takeoff weight:	15,000 pounds (6,750 kg)
Range:	2,995 miles (2,604 nautical miles, 4,792 km)
Armament:	None
Crew:	12 navigator students, six instructor navigators, aircraft commander and co-pilot
Date deployed:	September 1973

T-45A GOSHAWK

SERVICE: Navy

DESCRIPTION:
Tandem-seat, carrier-capable, jet trainer.

FEATURES:
The T-45A aircraft, the Navy version of the British Aerospace Hawk aircraft, is used for intermediate and advanced portions of the Navy pilot training program for jet carrier aviation and tactical strike missions.

The T-45A replaces the T-2 Buckeye trainer and the TA-4 trainer with an integrated training system that includes the T-45 Goshawk aircraft, operations and instrument fighter simulators, academics, and training integration system.

INVENTORY:
The Navy has 300 T-45s and 32 simulators.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS

Primary Function:	Training platform for jet pilots.
Contractor:	McDonnell Douglas Corp.
Unit cost:	$16.3 million
Propulsion:	Rolls Royce F405-RR-401 tubofan engine w/ 5,527 lbs thrust
Length:	39 feet, 4 inches (11.98 meters)
Wingspan:	30 feet, 10 inches (9.39 meters)
Height:	13 feet, 6 inches (4.11 meters)
Weight:	13,500 pounds (6075 kg) maximum takeoff
Speed:	Mach 1
Ceiling:	40,000 feet
Range:	700 nautical miles (805 statute miles, 1288 km)
Crew:	Two (instructor pilot, student pilot)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

U-2 AND U-2R

SERVICE: Air Force

DESCRIPTION:
High-altitude reconnaissance aircraft

FEATURES:
The U-2 is a single-seat, single-engine, high-altitude, reconnaissance aircraft that first flew in August 1955. Long, wide, straight wings give it glider-like characteristics. It carries a variety of sensors and cameras.

The newest version of the U-2, the U-2R, is equipped with a variety of sensors to provide continuous day or night, high-altitude, all-weather, stand-off surveillance of a battle area in direct support of U.S. and allied ground and air forces.

In addition to high-altitude reconnaissance, the U-2 also performs air sampling flights and occasionally is used for search and rescue missions.

BACKGROUND:
The U-2 made its first flight in August 1955. Since 1957, a series of U-2 flights have been conducted to sample radioactive debris in the stratosphere.

On Oct. 14, 1962, it was a U-2 that photographed the Soviet military installing offensive missiles in Cuba.

Numerous U-2 missions have been flown for USDA, the Army Corps of Engineers and state governments to determine damage from natural disasters.

The U-2R, then known as the TR-1A, first flew in August 1981 and was delivered to the Air Force the next month. It was redesignated U-2R in 1992.

U-2R crew members are trained at Beale Air Force Base, Calif., using two-seat trainer versions.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-5562; (804) 764-5007

(more)

GENERAL CHARACTERISTICS

Primary function:	High-altitude tactical reconnaissance
Contractor:	Lockheed Aircraft Corp.
Unit Cost:	$34 million
Power plant:	One Pratt & Whitney J75-P-13B engine
Thrust:	17,000 pounds (7,650 kg)
Length:	63 feet (19.2 meters)
Height:	16 feet (4.8 meters)
Wingspan:	103 feet (30.9 meters)
Speed:	430 miles per hour (688 km)
Maximum takeoff weight:	40,000 pounds (18,000 kg)
Range:	U-2: 4,000-plus miles (3,478 nautical miles/6,400 km); U-2R: 3,000-plus miles (2,609 nautical miles/4,800 km)
Ceiling:	Above 70,000 feet (21,212 meters)
Crew:	One (two in trainer models)
Date deployed:	U-2: August 1955; U-2R (then TR-1A): September 1981

V-22A OSPREY

SERVICE: Navy, Marine Corps, and Air Force

DESCRIPTION:
Multi-mission aircraft that combines vertical take-off and landing capability with high speed, high altitude flight.

BACKGROUND:
The Marine Corps's MV-22A will be an assault transport for troops, equipment, and supplies, operating from air capable ships or bases ashore. The Navy's HV-22A will provide combat search and rescue, delivery and retrieval of special warfare teams along with fleet logistic support transport.

FEATURES:
The Osprey is a tiltrotor aircraft with a 38-foot rotor system and engine/transmission nacelle mounted on each wing tip. It can operate as a helicopter when taking off and landing vertically. Once airborne, the nacelles rotate forward 90 degrees for horizontal flight, converting the V-22 to a high speed, fuel-efficient turboprop airplane. The wing rotates for compact storage aboard ship.

First flight occurred in March 1989. Bell Helicopter Textron and Boeing Helicopter are teamed to produce four production representative aircraft.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS

Primary Function:	Vertical takeoff and landing (VTOL) aircraft
Contractor:	Bell-Boeing
Propulsion:	Two pivoting engines: T406-80-400
Main rotor diameter:	38 feet (11.58 meters);
Blades per rotor:	three
Weight:	Combat: 42,486 pounds (19,118.7 kg) Landing: 33,615 pounds (15,126.75 kg)
Ceiling:	5,000 feet (1,524 meters) cruising altitude 22,000 feet combat ceiling
Speed:	284 knots (326.6 mph, 522.56 kmph)
Armament:	Provisions for two .50 caliber cabin guns

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

VC-25A, AIR FORCE ONE

SERVICE: Air Force

DESCRIPTION:
The VC-25A, Air Force One, provides transport for the President of the United States.

FEATURES:
The VC-25A is a modified Boeing 747, capable of inflight refueling. Its communications and electronic equipment are configured and modified to support the president, as are its interior furnishings.

Two galleys provide up to 100 meals at one sitting. Six passenger lavatories, which include handicap facilities, are on board, as are a rest area and mini-galley for the aircrew. The VC-25A also has a compartment outfitted with medical equipment and supplies for minor medical emergencies.

INVENTORY: Two

BACKGROUND:
Presidential air transport began in 1944 when a C-54 Skymaster named the "Sacred Cow" was put into service for President Roosevelt. Then came the "Independence," a DC-6 Liftmaster, which transported President Truman from 1947 to 1953. President Eisenhower traveled aboard the "Columbine II" and "Columbine III" from 1953 to 1961. The call sign "Air Force One" was first used in September 1961, identifying President Kennedy flying aboard his C-118.

In 1962, A C-137 became the first jet aircraft specifically purchased for use as Air Force One.

The first VC-25A, tail number 28000, flew as "Air Force One" on Sept. 6, 1990.

POINT OF CONTACT:
Air Mobility Command; Building 1905, Room 118, 502 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4503

(more)

GENERAL CHARACTERISTICS

Primary function:	Air transportation for the President and staff
Builder:	Boeing Airplane Co.
Power plant:	Four General Electric CF6 jet engines
Thrust:	56,700 pounds (25,515 kg), each engine
Length:	231 feet, 10 inches (70.66 meters)
Height:	63 feet, 5 inches (19.24 meters)
Wingspan:	195 feet, 8 inches (59.63 meters)
Speed:	622 miles (995.2 km) per hour
Ceiling:	45,100 feet
Maximum takeoff weight:	833,000 pounds (374,850 kg)
Range:	9,600 miles (8,348 nautical miles/15,360 km)
Crew:	26 (passenger/crew capacity:102)
Date deployed:	Sept. 6, 1990 (tail No. 28000); Mar. 26, 1991 (No. 29000)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

VC-137B/C STRATOLINER

SERVICE: Air Force

DESCRIPTION:
The VC-137 provides transportation for high-ranking U.S. and foreign officials and serves as a backup for Air Force One, the presidential aircraft.

FEATURES:
The VC-137B/C Stratoliner is a modified version of the Boeing 707 that, for many years, was the presidential aircraft. The president's aircraft today is the VC-25A (Boeing 747).

The VC-137 body is identical to that of the 707, but with different interior furnishings and electronics.

The cabin is divided into three sections. The forward area has a communications center, galley, lavatory and an eight-seat compartment. The center section is designed as an airborne headquarters with conference tables and chairs, projection screen for films and two convertible sofa bunks. The rear section of the cabin contains double reclining passenger seats, tables, galley, two lavatories and closets. Cabin partitions are available for added privacy.

INVENTORY:
There are three VC-137Bs and four 137Cs in the active duty force.

BACKGROUND:
In 1962, the first jet aircraft to be specifically purchased for use as "Air Force One," a

VC-137B, entered service with the tail number 26000. It was the aircraft that carried President Kennedy to Dallas in November 1963, and in which his body was returned to Washington, D.C., after his assassination. President Johnson was sworn into office as the 36th president of the United States on board 26000 at Love Field in Dallas, and his body was returned to Texas in it after his state funeral in January 1973. In 1972, President Richard M. Nixon made historic visits aboard 26000 to the People's Republic of China and to the USSR.

POINT OF CONTACT:
Air Mobility Command, Office of Public Affairs, Building 1905, Room 118, 502 Scott Drive, Scott AFB, IL 62225-5317; (618) 256-4502

(more)

GENERAL CHARACTERISTICS

Primary Function:	Transport for high-priority personnel and backup presidential airlift
Builder:	Boeing Co.
Unit cost:	$36.6 million
Power plant:	Four Pratt and Whitney JT3D turbofan engines
Thrust:	18,000 pounds (8,100 kg) each engine
Length:	VC-137B: 144 feet, 6 inches (48.8 meters); VC-137C: 152 feet, 11 inches (46.33 meters)
Height:	VC-137B: 41 feet, 4 inches (12.5 meters); VC-137C: 42 feet, 5 inches (12.91 meters)
Maximum takeoff weight:	VC-137B: 258,000 pounds (116,100 kg); VC-137C: 322,000 pounds (144,900 kg)
Wingspan:	VC-137B: 130 feet, 10 inches (39.66 meters); VC-137C: 145 feet, 9 inches (44.17 meters)
Range:	VC-137B: 5,000 miles (8,000 km); VC-137C: 6,000 miles (9,600 km)
Ceiling:	42,000 feet
Speed:	530 miles (848 km) per hour
Load:	VC-137B: 40 passengers; VC-137C: 50 passengers
Crew:	18 (varies with mission)
Date deployed:	VC-137B: October 1962; VC-137C: August 1972

CHAPTER 4

Helicopters

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

COBRA HELICOPTER

SERVICE:
The Army flies the AH-1F, E, P and S Cobra models. The Marine Corps flies the AH-1W Super Cobra only.

DESCRIPTION:
An attack helicopter with maximum fire-power, armed with missiles, rockets, cannon and machine gun.

FEATURES:
The Cobra is a two-bladed, tandem-seat (front & back), attack helicopter powered by a single turbine engine. This weapon system performs anti-armor, air cavalry and armed reconnaissance roles and can attack point (individual) targets with its anti-armor and anti-helicopter capabilities. It also provides fire support and security missions. The mix of weaponry depends on the model. Cobras can be armed with TOW and Hellfire anti-armor missiles, Sidewinder anti-aircraft missiles, Sidearm anti-radar missiles, Hydra 70 rockets, 20mm (.80 caliber) cannon and a 7.62mm (.30 caliber) machine gun.

INVENTORY:
The Army has 879 Cobras (AH-1F, AH-1E, AH-1P, and AH-1S). The Marine Corps has 103 AH-1Ws (Super Cobras).

POINTS OF CONTACT:
Army: Army Public Affairs, (703)697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492

GENERAL CHARACTERISTICS

Primary function:	Attack helicopter
Contractors:	Bell Helicopter Textron (airframe) Lycoming & GE (engines) GE: 20mm turret system
Weight:	10,000 lbs (4,500 kg) all models
Height:	13 feet, 5 inches (4.06 meters)
Range:	345 miles (555 km)
Speed:	147 knots (169 miles, 270.4 km, per hour)
Length:	58 feet (17.67 meters)
Fuselage width:	3 feet (.91 meters)
Rotor:	48 feet (14.62 meters)

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

AH-64A APACHE ATTACK HELICOPTER

SERVICE: Army

DESCRIPTION:
Heavily armed attack helicopter

FEATURES:
The Apache is a state-of-the-art attack heli copter capable of defeating a wide range of targets, including all armored vehicles. This helicopter, which is capable of performing its mission at night and under adverse weather conditions, provides direct aerial fire as an integral element of ground units. Armed with laser-designated Hellfire missiles, 30mm cannon and Hydra 70 rockets, the Apache can direct highly mobile and effective firepower against the enemy. Its Target Acquisition Designation Sight (TADS) and Pilot Night Vision Sensor (PNVS) provide day and night laser designation of targets and infrared night vision for both the pilot and the copilot/gunner.

BACKGROUND:
The Apache was acquired by the Army in 1986. The Army has 28 battalions equipped with the Apache and expects to have a total of 37 battalions equipped by FY95. Of the 811 Apaches ordered, 729 have been delivered. The last delivery is expected in FY95.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS

Primary function:	Attack Helicopter
Contractors:	McDonnell Douglas (airframe) Martin Marietta (Target Acquisition Designation System/Pilot Night Vision System or TADS/PNVS) General Electric (engines)
Unit cost:	$14.5 million
Maximum weight:	17,650 pounds (7,942.5 kilograms)
Length:	57 feet, 8 inches (17.3 meters) from main rotor tip to tail rotor tip
Height:	11 feet, 10 inches (3.5 meters)
Width (of main rotor):	48 feet (14.4 meters)
Range:	260 nautical miles
Crew:	Two

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Payload:	1,200 rounds (30mm gun) 76 2.75 inch rockets 16 Hellfire missiles
Speed:	160 knots (cruise and level) 197 knots (maximum)
Power Train:	Two turbine engines
Ceiling:	21,000 feet
Armament:	30mm gun, Hydra 70 rockets, Hellfire missiles

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

CH-46E SEA KNIGHT HELICOPTER

SERVICE: Marine Corps

DESCRIPTION:
Medium lift assault helicopter, primarily used to move troops.

MISSION:
The CH-46E Sea Knight helicopter provides all-weather, day-or-night assault transport of combat troops, supplies and equipment. Troop assault is the primary function and the movement of supplies and equipment is secondary.

Additional tasks may be assigned, such as combat support, search and rescue, support for forward refueling and rearming points, aeromedic evacuation of casualties from the field and recovery of aircraft and personnel.

INVENTORY: 242

BACKGROUND:
The CH-46 Sea Knight was first procured in 1964 to meet the medium-lift requirements of the Marine Corps in Vietnam. The aircraft has served the Marine Corps in all combat and peacetime environments since that time. The Sea Knight fleet is currently being maintained until a suitable replacement is approved.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Medium lift assault helicopter
Contractor:	Boeing Vertol Company
Power plant:	Two GE-T58-16 engines
Thrust:	1,770 hp
Length:	45 feet, 7 inches (13.89 meters) with rotors folded
Width:	51 feet (15.54 meters with rotors folded
Height:	16 feet 8 inches (5.08 meters)
Maximum takeoff weight:	24,300 pounds (11,032 kg)
Range:	132 nautical miles (151.8 miles) for land assault mission
Speed:	145 knots (166.75 miles per hour)
Ceiling:	10,000 feet plus
Crew:	Four: pilot, copilot, crew chief, mechanic
Payload:	Combat: maximum of 22 troops and two aerial gunners
Medical evacuation:	15 litters, two attendants
Cargo:	5,000 pounds (2270 kg) maximum
Introduction date:	January 1978

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

CH-47 CHINOOK HELICOPTER

SERVICE: Army

DESCRIPTION:
The Army's only medium-lift helicopter

FEATURES:
The CH-47 Chinook is a twin-engine, tandem rotor, cargo helicopter. This helicopter's primary missions are movement of ammunition, repair parts, petroleum and tactical movement of artillery, troops, and special weapons on the battlefield.

BACKGROUND:
The Chinook was designed in the 1950's and fielded in 1962. In 1975 a modernization program was approved to upgrade the CH-47A, B, and C models into a new "D" model configuration. The modernization includes new fiberglass rotor blades, transmission and drive systems, modularized hydraulics, electrical systems, advanced flight controls, triple hook cargo system, and an auxillary power unit. These features greatly enhance reliability, maintainability, productivity, survivability, and safety of the medium-lift fleet.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS

Primary function:	Cargo helicopter
Contractors:	Boeing Vertol (Philadelphia, PA) AVCRO-Lycoming (Stratford, CT)
Maximum weight:	50,000 lbs (22,500 kilograms)
Cruise Speed:	162 knots (186 miles per hour)
Endurance:	2.2 hours
Maximum Range:	300 nautical miles (345 statute miles)
Armament:	Not applicable
Payload:	15,873 lbs (7143 kilograms) or (33 troops)
Crew:	2 pilots, 1 crew chief

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

CH-53E SUPER STALLION

SERVICE: Marine Corps and Navy

AIR FORCE VERSION: MH-53J Pave Low

DESCRIPTION:
The CH-53E Super Stallion is a larger version of the CH-53 Sea Stallion, and the largest helicopter in the U.S. military inventory. It is used to transport personnel and equipment, lift heavy loads and conduct minesweeping missions.

The Air Force version, equipped with sophisticated electronics countermeasures systems, is used for long-range delivery and resupply of special operations forces and combat rescue missions.

MISSION:
The primary mission of the CH-53 is to transport supplies and heavy equipment, and its secondary mission is to transport personnel. The Navy CH-53E's primary mission is the delivery of cargo to ships underway.

FEATURES:
The CH-53E Super Stallion is a shipboard helicopter configured for the lift and movement of cargo and personnel and the external lift of heavy oversized equipment.

The CH-53E is the only helicopter capable of lifting some of the new weapon systems in the Marine Corps, including the M-198 Howitzer and the variants of the new Light Armored Vehicle (LAV).

The MH-53E Sea Dragon is a multimission variant of the CH-53E with enhanced airborne mine countermeasures capability over the current Navy RH-53D Sea Stallion helicopter, including increased range and navigation capability.

The CH-53E is the largest helicopter in the western world, with a maximum gross weight of 73,500 pounds. Its increased military capabilities over the earlier CH-53 models include larger payloads, extended range and inflight refueling.

POINT OF CONTACT: Public Affairs Office, Naval Air Systems Command (AIR07D2), Washington, D.C. 20361-0701 (703)746-3791.

(more)

GENERAL CHARACTERISTICS

Primary function:	Heavy-duty helicopter
Contractor:	Sikorsky Aircraft Division of United Technologies Corp.
Unit cost:	$19 million
Propulsion:	Three General Electric T64-GE-416 turboshaft engines (4,380 shaft horsepower each)
Length:	79 feet 0.5 inches (25.2 meters) (with rotors turning); 73 feet 4 inches (22 meters) (fuselage)
Width:	79 feet (23.7 meters) (with rotors turning)
Height:	29 feet 5 inches (10.2 meters)
Weight:	73,500 pounds (33,000 kg)(max gross weight with external attachments)
Speed:	170 knots (195.5 miles per hour)
Crew:	Two pilots, one aircrewman
Capacity:	55 troops
Date Deployed:	First flight: Dec. 13, 1980 Operational: February 1981

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

CH-53A/D SEA STALLION
RH-53D SEA STALLION

SERVICE: Navy and Marine Corps

DESCRIPTION:
The CH-53A/D transports personnel, supplies and equipment in support of amphibious and shore operations. The RH-53D is used primarily for Airborne Mine Countermeasures (AMCM), with a secondary mission of shipboard delivery. The Navy CH-53E's primary mission is the delivery of cargo to ships underway.

BACKGROUND:
The CH-53A was ordered in the early 1960s to satisfy a Marine Corps requirement for a heavy lift helicopter. Other variants of the H-53 are the RH-53P and the MH-53E, which are used for mine countermeasures. The H-53s can operate from carriers and other warships.

FEATURES:
The CH-53E Super Stallion, first delivered in 1980, is larger and can carry greater loads than the Sea Stallion. It has a third engine and a seven-blade rotor in place of the two engines and six-blade rotor in the Sea Stallion. It also has an upgraded transmission and can transport an external cargo of 16 tons (14.4 metric tons) for 50 nautical miles (57.5 statute miles, 92 km.).

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS, A-D MODELS

Contractor:	Sikorsky Aircraft Division of United Technologies Corp.
Propulsion:	Two General Electric T64-GE413 turboshaft engines (3,925 shaft horsepower each)
Length:	Fuselage: 67.5 feet (20.3 meters); Rotors turning: 88 feet 3 inches (26.5 meters)
Height:	24 feet 11 inches (7.2 meters)
Weight:	21 tons (max gross) (18.9 metric tons)
Main Rotor Diameter:	72 feet 3 inches (21.7 meters)
Range:	578 nautical miles (665 statute miles, 1064 km.) 886 n.m. ferry range (266 statute miles, 361.6 km.)

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Ceiling:	12,450 feet
Speed:	160 knots (184 miles, 294.4 km per hour)
Load:	37 troops or 24 litter patients plus four attendants or 8,000 pounds (3,600 kg.) cargo
Crew:	2 pilots, 1 crewman (7 crewmen in RH-53D)
Armament:	None
Date Deployed:	First flight: Oct. 14, 1964 Operational: Nov. 1966

GENERAL CHARACTERISTICS, E MODEL

Contractor:	Sikorsky Aircraft Division of United Technologies Corporation
Propulsion:	Three General Electric T64-GE-416 turboshaft engines (4,380 shaft horsepower each)
Length:	78 feet 5 inches (23.89 m.)
Main Rotor Diameter:	79 feet (24.08 m.)
Height:	29 feet, 5 inches (8.96 m.)
Weight:	73,500 pounds (33,075 kg.)
Ceiling:	18,500 feet
Speed:	170 knots (195.5 miles, 312.8 km per hour)
Range:	1100 nautical miles (1,265 statute miles, 2,024 km.)
Crew:	Two pilots, one crewman, 55 troops
Armament:	None
Date Deployed:	First Flight: Dec. 13, 1980 Operational:Feb. 1981

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

HH-3E HELICOPTER

SERVICE: Air Force

DESCRIPTION:
Twin-engine, heavy lift helicopter, famed during the Vietnam War as the Jolly Green Giant.

FEATURES:
The HH-3E, the Jolly Green Giant, is a twin-engine, heavy-lift helicopter. It is used for search and recovery of personnel and aerospace hardware in support of global air and space operations. It is also used for combat and special operations.

With the ability to operate from land or water, the Jolly Green Giant boasts combat rescue-related equipment including titanium armor plating, jettisonable external fuel tanks, internal self-sealing bladder-type fuel tanks under the cabin floor, a retractable in-flight refueling probe, two 7.62mm machine guns, a forest penetrator and a high-speed rescue hoist with 240 feet of cable.

The long-range helicopter has a hydraulically operated rear ramp for straight-in-loading and a jettisonable sliding door on the starboard side at the front of the cabin. It has a gas turbine auxiliary power supply for independent field operations and built-in equipment for the removal and replacement of all major components in remote areas.

The Jolly Green Giant has an automatic flight-control system, instrumentation for all-weather operation, and Doppler navigation equipment. Twin turboshaft engines are mounted side-by-side on top of the cabin, immediately forward of the main transmission. The aircraft also has a retractable tricycle-type landing gear.

INVENTORY:
There are 12 remaining in the active duty force.

BACKGROUND:
The HH-3E helicopter is a modified version of the CH-3 transport helicopter. It was developed for aircrew rescue missions deep into North Vietnam during the Vietnam War. Many downed aircrews were rescued by Jolly Green Giants and their crews.

The first non-stop trans-Atlantic flight by a helicopter was made by two Jolly Green Giants between May 30 and June 1, 1967, when they flew from New York City to the Paris Air Show. During that 4,270--mile flight, which took 30 hours and 46 minutes, each aircraft was aerially refueled nine times. The Jolly Green Giant flew 251 combat missions during Operation Desert Storm.

POINT OF CONTACT:
Air Mobility Command, Building 1905, Room 115, 502 Scott Drive, Scott AFB, IL62225-5317; (618) 256-4502

(more)

GENERAL CHARACTERISTICS

Primary function:	Combat rescue and recovery, and special operations
Builder:	Sikorsky Aircraft Division, United Technologies Corp.
Power plant:	Two General Electric T58-GE-5 engines
Guidance system:	Doppler navigation equipment
Thrust:	1,500 pounds (675 kilograms) each engine
Length:	72 feet, 10 inches (22.08 meters)
Height:	18 feet, 1 inch (5.46 meters)
Diameter of main rotor:	62 feet (18.79 meters)
Diameter of tail rotor:	10 feet, 4 inches (3.13 meters)
Speed:	164 miles per hour (262.4 kilometers per hour)
Ceiling:	12,000 feet (3,636.36 meters)
Maximum takeoff weight:	22,050 pounds (9,922.50 kilograms)
Range:	600 miles (521.94 nautical miles/960 kilometers) (unlimited with aerial refueling)
Armament:	Two 7.62mm machine guns
Load options:	25 combat-equipped troops, 15 litter patients or 5,000 pounds (2,250 kilograms) of cargo
Unit cost:	$5.4 million
Crew:	4 (pilot, co-pilot, flight engineer and a pararescue specialist; a flight surgeon may be included)
Date deployed:	1966

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

HH-3F PELICAN

SERVICE: U.S. Coast Guard

DESCRIPTION:
Amphibious helicopter

MISSION:
The HH-3F is well suited for search and rescue, marine environmental protection, logistic and reconnaissance support, enforcement of laws and treaties, defense readiness and drug interdiction.

FEATURES:
The size of the aircraft, its navigational and communication equipment, and its range make it an efficient and reliable platform in all types of weather and over most terrains. The aircraft can seat 17 passengers and its side hoist can lift 600 pounds. Key features are its suspension hoist, hydraulically operated eight-foot ramp that may be opened during flight, in the water and on land; computerized navigation system; weather search color radar; and automatic flight control system.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-P, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS

Primary function:	Medium range multi-mission recovery helicopter
Builder:	Sikorsky
Cost:	$900,000 (1973)
Power plant:	Twin General Electric T-58-GE-5 engines 1500 shaft horse power per engine
Main Rotor Diameter:	62 feet (18.8 meters)

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HH-3F PELICAN

Length:	73 feet (22.1 meters)
Height:	18 feet (5.5 meters)
Width:	16 feet (4.9 meters)
Maximum Gross Weight:	22,050 lbs (9922.5 kg)
Empty Weight:	14,500 lbs (6525 kg)
Speed:	Cruise 120 knots (138 mph. 220.8 kmph) Maximum 142 knots (163.3 mph, 245.3 kmph)
Range:	Maximum 750 nautical miles (862.5 statute miles, 1,380 km) Radius of action 300 nautical miles (345 statute miles)
Fuel Capacity:	1,114 gallons (4,233.2 liters)
Endurance:	3½ hours
Maximum Endurance:	6 hours
Cargo Sling Load:	8,000 lbs (3,600 kg)
Crew:	Pilot, co-pilot, avionicsman and flight mechanic
Inventory:	The Coast Guard has 19 HH-3F Pelicans in service and 17 in storage. They were first fielded in 1969.

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

HH-65A DOLPHIN

SERVICE: U.S. Coast Guard

DESCRIPTION:
Short range helicopter

FEATURES:
The HH-65A is used to conduct search and rescue missions, drug interdiction, law enforcement and environmental protection, and to assist ice breaking operations. An HH-65A may be stationed aboard icebreakers and be used to scout the ice for passages through it, as well as extending the range of scientific experimentation. The HH-65A can land or be deployed aboard larger cutters.

The Dolphin has a Computerized Flight Management System that provides automatic flight control, allowing the pilot to hover at 50 feet and automatically fly selected search patterns while he scans the search area.

POINT OF CONTACT:
U.S. Coast Guard, Commandant G-P, Public Affairs, 2100 2nd St. SW; Washington DC; 20593; (202) 267-1933

GENERAL CHARACTERISTICS

Primary function:	Short range multi-mission recovery helicopter
Builder:	Aerospatiale Helicopter of Grand View, Texas
Cost:	$3,067,000 (1988)
Power plant:	Two LTS 101-750B-2 Turbo-shaft engines built by AVCO Lycoming
Main rotor diameter:	39 feet 2 inches (11.9 meters)
Length:	38 feet 2 inches (11.6 meters)
Height:	12 feet 9 inches (3.9 meters)
Width:	10 feet 6 inches (3.2 meters)
Maximum gross weight:	8,900 lbs (4005 kg)
Empty weight:	6216 lbs (2797.2 kg)
Speed:	Cruise 125 knots (143.8 mph, 230 kmph) Maximum 165 knots (189.8 mph, 303.7 kmph)
Range:	400 nautical miles (460 statute miles)
Fuel Capacity:	291 gallons (1,105.8 liters)
Endurance:	3½ hours
Cargo sling load:	2,000 lbs (900 kg)
Crew:	One or two pilots, one crewman
Inventory:	80 in service; 16 in storage
Operational date:	1984

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

OH-58D KIOWA WARRIOR HELICOPTER

SERVICE: Army

DESCRIPTION:
A reconnaissance and multipurpose helicopter

FEATURES:
The Kiowa is a two-seat, single engine, four-bladed main rotor, scout helicopter with a low-light television, a thermal imaging system and a laser rangefinder/designator incorporated into a mast-mounted sight. The helicopter, when armed, is used in aerial reconnaissance, aerial security, target acquisition, command and control, defensive air combat and multipurpose light helicopter contingency operations.

BACKGROUND:
The Army received the unarmed version of this helicopter in 1985 and the armed version in 1992. The Army presently has 238 OH-58Ds on hand, 47 armed and 191 unarmed. The procurement objective is 315.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS

Primary Function:	Armed reconnaissance helicopter
Additional function:	Scout helicopter, target acquisition/ designation helicopter
Contractors:	Bell Helicopter Textron Inc. (airframe/system integration), Fort Worth, Texas; McDonnell Douglas Electronics Systems Co. (Mast Mounted Sight), Monrovia, Calif.; Allison Gas Turbine Division of General Motors Corp. (engine), India napolis, Ind.; Honeywell Inc. (control display system soft ware), Albuquerque, N.M.

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Unit cost:	$6 million
Weight:	5,500 lbs. (2,475 kg) maximum gross
Length:	41 feet, 2 inches (12.5 meters)/ rotor diameter 35 feet (10.6 meters)
Height:	12 feet, 10 inches (3.9 meters)
Width:	6 feet, 5 inches (2 meters)
Endurance:	2.2 hours
Crew:	Two
Payload:	External cargo: 2,000 pounds (900 kg)
Troops:	six
Litters:	four
Sling load:	1,640 pounds (748 kg)
Cruising speed:	125 knots
Power train:	One 650 shp (shaft horsepower) turbine
Armament:	Two pylons, each with .50 cal. machine gun, 70mm rockets, Hellfire missiles, air-to-air Stinger missiles

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

SH-3H SEA KING

SERVICE: Navy

DESCRIPTION:
A ship-based anti-submarine helicopter.

FEATURES:
The SH-3H is a twin engine, all-weather, helicopter, equipped with variable depth sonar, sonobuoys, data link, chaff and a tactical navigation system. It is used to detect, classify, track and destroy enemy submarines. It also provides logistic support and search and rescue capability.

BACKGROUND:
The first version of this workhorse helicopter was flown more than 20 years ago. The present model is equipped with sonar, active and passive sonarbuoys and magnetic detection equipment.

The Sea King is being replaced by SH-60F helicopters. The transition will lastin into the late 1990s. It will then be converted to a search and rescue helicopter.

POINT OF CONTACT:
Public Affairs Office, Naval Air Systems Command (AIR07D2), Washington, D.C. 20361-0701 (703) 746-3791.

GENERAL CHARACTERISTICS

Primary function:	Carrier-based anti-submarine warfare helicopter
Contractor:	Sikorsky
Unit cost:	$6.4 million
Propulsion:	Two General Electric T58-GE-10 turboshaft engines
Length:	73 feet (21.9 meters)
fuselage length:	54 feet 9 inches (16.5 meters)
Height:	17 feet (5.1 meters)
Weight:	11,865 pounds (5,339 kg) empty
Maximum takeoff weight:	21,000 pounds (9,450 kg)
Range:	542 nautical miles (623.3 statute miles, 997 km)
Ceiling:	14,700 feet (4,410 meters)
Cruising Speed:	136 miles (217.6 km) per hour
Crew:	Four (including two sonar operators)
Armament:	2 MK-46 torpedoes
Date Deployed:	First flight: March 1959 Operational:June 1961

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

SH-2F SEASPRITE

SERVICE: Navy

DESCRIPTION:
Ship-based heicopter with anti-submarine, anti-surface threat capability.
Extend and increase shipboard sensor and weapon capabilities against several types of enemy threats, including submarines of all types, surface ships, and patrol craft that may be armed with anti-ship missiles.

FEATURES:
Seasprite is a ship-based anti-submarine (ASW) and anti-ship surveillance and targeting (ASST) helicopter. It extends sensor and weapon capabilities against surface and submerged vessels. The SH-2F is equipped with search radar, electronic support measures, magnetic anomaly detectors and an acoustic data link. The helicopter also carries active and passive sonobuoys.

BACKGROND:
The final production procurement of the SH-2F was in FY86.

POINT OF CONTACT:
Public Affairs Office (AIR-07D2), Naval Air Systems Command, Washington, DC 20361-0701 (703) 746-3793.

GENERAL CHARACTERISTICS

Primary Function:	ASW (Airborne platform for LAMPS Mk I)
Contractor:	Kaman
Unit cost:	$16 million
Propulsion:	Two T58-GE-8F turboshaft engines
Length:	53 feet (15.9 meters) Fuselage Length: 40 feet, 6 inches (12.2 meters)
Height:	15 feet (4.5 meters)
Weight:	9,110 pounds (4099.5 kg) empty
Maximum Takeoff Weight:	13,500 pounds (6075 kg) normal takeoff
Range:	over 340 nautical miles (391 statute miles, 625.6 km.) with maximum fuel
Ceiling:	11,850 feet at 13,500 pounds (6,075 kg.)
Speed:	133 knots maximum (152.95 mph, 244.72 kmph) 127 knots cruise (146.05 mph, 233.68 kmph)
Crew:	Three
Armament:	Two Mk 46 torpedoes
Date Deployed:	First flight: July 2, 1959 Operational: December 1962

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

UH-1 (HUEY) HELICOPTER

SERVICES: Army, Marine Corps, Navy

DESCRIPTION:
The Huey is a utility helicopter powered by two turbine engines.

FEATURES:
The UH-1 (Huey) is the oldest member of the helicopter fleet (the first one was delivered in 1958) in the Department of Defense inventory. The Huey transports troops and equipment into combat and flies combat resupply, aeromedical evacuation and command and control missions. It has a crew of three, two pilots and a crew chief, and can transport a 3,000 pound (1,350 kg) payload, eight combat troops or a 4,000 pound (1,800 kg) sling load. In the Marine Corps, the Huey provides utility combat helicopter support to the landing force commander during ship-to-shore movement.

BACKGROUND:
The first UH-1 was delivered in 1958, and the last production "H" model in 1977. The Huey is considered to be the most widely used helicopter in the world, with more than 9,000 produced in two decades. It is flown today by about 40 countries. The Army has 2,916 Hueys, and the Marine Corps has 115.

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marine Corps:** Headquarters, USMC, Division of Public Affairs, (703) 614-1492; **Navy:** Public Affairs Office, Naval Air Systems Command (AIR 07D2), Washington, DC 20361; (703) 746-3791.

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GENERAL CHARACTERISTICS

Primary function:	Utility helicopter
Contractors:	Bell Helicopter Textron (airframe) AVCO-Lycoming (engines)
Weight:	Empty 5,132 pounds (2309.4 kg); gross 9,500 pounds (4,275 kg)
Length:	57.3 feet (17.46 meters)
Height:	14.9 feet (4.54 meters)
Width:	9.4 feet (2.84 meters)
Rotor diameter:	48 feet (14.62 meters)
Maximum speed:	121 knots (139 mph)
Ceiling:	14,200 feet (limited to 10,000 by oxygen requirements)
Maximum takeoff weight:	10,000 pounds (4,540 kg)
Range:	172 nautical miles (197.8 miles)
Armament:	Army: two 7.62mm machine guns Marine Corps: two 7.62mm machine guns or one 7.62mm machine gun and one .50 caliber machine gun (The helicopter can also carry two 7-round or 19-round 2.75" (70mm) rocket pods.)
Crew:	Three

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

UH-60L BLACK HAWK HELICOPTER (ARMY)

[Other versions are the SH-60 Seahawk and HH-60H (Navy); MH-60G Pave Hawk (Air Force); HH-60J Jayhawk (Coast Guard).]

SERVICES: Army, Navy, Air Force, Coast Guard

DESCRIPTION:
A twin-engine, medium lift, utility or assault helicopter.

FEATURES:
The Army's UH-60L Black Hawk (and the versions of the other services) is a twin-engine, medium lift helicopter. It is used for troop transport, cargo lift, anti-submarine warfare, search and rescue, drug interdiction, anti-ship warfare and special operations. Each variation is equipped for the specific needs of its service. For example, the Navy's SH-60B Seahawk is an airborne platform for a weapon system that deploys sonobouys (sonic detectors) and torpedoes in an antisubmarine role.

Some versions, such as the Air Force's MH-60G Pave Hawk and the Coast Guard's HH-60J Jayhawk, are equipped with a rescue hoist with a 250 foot (75 meter) cable that has a 600 pound (270 kg) lift capability, and a retractable in-flight refueling probe. The Army's UH-60L Black Hawk can carry 11 soldiers or 2,600 pounds (1,170 kg) of cargo or sling load 9,000 pounds (4,050 kg) of cargo.

BACKGROUND:
The UH-60 Black Hawk was fielded by the Army in 1979. The Navy received the SH-60B Seahawk in 1983 and the HH-60H in 1988. The Air Force received the MH-60G Pave Hawk in 1982 while the Coast Guard received the HH-60J Jayhawk in 1992. The unit cost varies with the version. For example, the unit cost of the Army's UH-60L Black Hawk is $5.9 million while the unit cost of the Air Force MH-60G Pave Hawk is $10.2 million.

POINTS OF CONTACT:
Army: Army Public Affairs, (703)697-7589; **Navy:** Office of Navy Information (703)697-5320; **Air Force:** AF Special Operations Command Public Affairs Office, (904)884-5515; **Coast Guard:** Commandant, U.S. Coast Guard, ATTN: G-CP, (202)267-1933

(more)

GENERAL CHARACTERISTICS

Primary function:	Utility or assault helicopter; this varies with the version of a particular military service
Contractor:	Sikorsky Aircraft Corporation (airframe) General Electric Company (engines) IBM Corporation (avionics components)
Power plant:	Two General Electric T700-GE-700 or T700-GE-701C engines
Thrust:	Up to 1,940 shaft horsepower
Length:	64 feet 10 inches (19.6 meters)
Height:	Varies with the version; from 13 to 17 feet (3.9 to 5.1 meters)
Rotor diameter:	53 feet 8 inches (16.4 meters)
Weight:	Varies; 21,000 to 23,000 pounds (9,450 to 10,350 kg) 53 feet 8 inches (16.2 meters)
Speed:	180 knots maximum
Range:	Generally about 380 nautical miles (600 km); range becomes unlimited with air refueling capability.
Armament:	Usually two 7.62mm machine guns mounted in the windows; can also be equipped with three Mk46 or Mk50 torpedoes or additional .50-caliber machine guns mounted in the doors
Crew:	Usually three or four

CHAPTER 5

Tracked Vehicles

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-60A1 ARMORED VEHICLE LAUNCHED BRIDGE

SERVICE: Marine Corps

DESCRIPTION:
An armored vehicle used for launching and retrieving a 60-foot scissors-type bridge.

FEATURES:
The M-60A1 consists of three major sections: the launcher, the hull and bridge. The launcher is mounted as an integral part of the chassis. The bridge, when emplaced, is capable of supporting tracked and wheeled vehicles with a military load. The bridge can be retrieved from either end.

The roadway width of the AVLB is 12 feet. The bridge can be emplaced in two to five minutes, and retrieved in 10 minutes under armor protection. Currently there are 55 bridges and 37 launchers in the Marine Corps inventory. The AVLB was added to the inventory in the late 1980s.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps Division of Public Affairs, Washington, DC 20380-0001;(703) 614-1492.

GENERAL CHARACTERISTICS

Primary Function:	Armored vehicle used for launching and retrieving a 60-foot scissors-type bridge.
Contractor:	General Dynamics Land Systems Division
Contractor:	Anniston Army Depot (ANAD)
Power plant:	12 cylinder diesel engine AVOS-1790-20
Power train:	CD-850-6A 2 speed forward, 1 reverse

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M60A1 TANK CHASSIS

Weight, combat loaded:	56.6 tons (51.33 metric tons)
Ground clearance:	18 inches (.4572 meters)
Length:	31 feet (9.44 meters)
Width:	12 feet (3.66 meters)
Maximum speed (governed):	30 miles (48.3 km) per hour
Cross country speed:	8 to 12 miles (12.9-19.3 km) per hour
Trench crossing:	8.5 feet (2.59 meters)
Range:	290 miles (464 km)
Fuel capacity:	375 gallons (14.19 hectoliters)
Crew:	Two

BRIDGE

Length, extended:	63 feet (19.19 meters)
Length, folded:	32 feet (9.75 meters)
Bridge span:	60 feet (18.28 meters)
Width, overall:	13.1 feet (3.99 meters)
Width, roadway:	12.5 feet (3.81 meters)
Width, treadway:	5.75 feet (1.75 meters)
Height, unfolded:	3.1 feet (.94 meters)
Weight:	14.65 tons (13.28 metric tons)
Introduction Date:	February 1987

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

BRADLEY FIGHTING VEHICLE M-2/M-3

SERVICE: Army

DESCRIPTION:
A tracked vehicle with light armor and armament.

FEATURES:
The BFVS is a lightly armored, fully tracked fighting vehicle that provides cross-country mobility, mounted firepower and protection from artillery and small-arms fire. It is used in mechanized infantry and armored cavalry combat.

Infantry can fight from inside the vehicle by using modified M-16 rifles mounted in firing ports or may dismount from the M-2 version to fight on foot. The M-3 version is also used by armored cavalry units. The vehicle is armed with a 25mm cannon, effective against most armored targets, and with the TOW missile, effective against lightly armored targets out to its maximum range of 3,750 meters (2.3 miles).

BACKGROUND:
The Army received the Bradley Fighting Vehicle in 1981. At the end of the latest contract in FY94, the Army will have purchased 6,724 Bradleys.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Armored fighting vehicle
Contractors:	FMC Corp., San Jose, Calif.
Unit cost:	$1.3 million
Weight (combat loaded):	67,000 pounds (30,391 kilograms)
Length:	21.5 feet (6.5 meters)
Height:	9.92 feet (3 meters)
Width:	10.5 feet (3.2 meters)
Range:	330 miles (528 kilometers)
Crew:	Three plus infantry squad
Road speed:	38 miles (60.8 kilometers) per hour
Power train:	600 HP Cummins Turbo diesel engine
Armor:	Layered aluminum with interior anti-fragmentation lining
Main armament:	25mm cannon
Muzzle velocity:	1,500 meters (4,950 feet) per second)
Rate of fire:	120 rounds per minute
Secondary armament:	TOW missile (See TOW fact sheet), 7.62mm machine gun

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-113A2 ARMORED PERSONNEL CARRIER

SERVICE: Army

DESCRIPTION: Armored, tracked vehicle used to transport troops

FEATURES:
The M-113A2 personnel carrier is a lightly armored, full-tracked combat vehicle that provides protected transportation for troops or cargo in combat. The A2 model features improvements in the cooling, suspension and personnel heating systems. The vehicle can carry up to 12 combat-equipped troops or a payload of two tons.

BACKGROUND:
The M-113 entered production in 1959 and ended production in 1992. More than 80,000 M-113 vehicles have been produced in 40 different variants and in use by more than 50 countries. Substantial mobility improvements are being made through the conversion of the M-113A2 to the M-113A3. Improvements include engine and transmission upgrades, and improved suspension and armor.

POINT OF CONTACT: Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Protected transportation of troops
Contractor:	FMC Corp., San Jose, Calif.
Weight (combat loaded):	24,986 pounds (11,243 kg)
Length:	15.9 feet (4.8 meters)
Height:	8.2 feet (2.5 meters)
Width:	8.8 feet (2.7 meters)
Range:	300 miles (480 kg)
Crew:	Two (track commander and driver)
Road Speed:	38 miles (60.8 km) per hour
Power train:	212 HP Detroit diesel
Armor:	Aluminum
Main Armament:	.50 cal machine gun

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-1 ABRAMS MAIN BATTLE TANK

SERVICES: Army, Marine Corps

DESCRIPTION:
The M-1 main battle tank is called the Abrams, after Gen. Creighton Abrams, former Army Chief of Staff. It is a fully tracked, low-profile tank with shoot-on-the-move capability and a high degree of maneuverability. Special armor, fuel and ammunition compartmentalization and an automatic fire detection and suppression system provide the crew with a high level of protection. The principal version, the M-1A1, features a 120mm cannon with a thermal sight, allowing it to track on a target by the heat it produces, and a fire control stabilization system that tracks such variables as tank speed, target speed, wind speed, tilt and ammunition temperature.

The Abrams operates in all climate and lighting conditions.

BACKGROUND:
The Army began production of the M-1 tank in 1981 and equipped its first units with the M-1A1 in 1986. The tank was designed with modular internal components that eased maintenance. During the Persian Gulf War the operational readiness rate exceeded 90% in all Army units. The newest version, the M-1A2, is presently undergoing technical and operational testing and is in low-rate production. At the end of the latest procurement contract in FY93, the Army will have purchased 7,880 M-1A1 tanks. The Marine Corps has 221 M-1A1 tanks.

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492

GENERAL CHARACTERISTICS:

Primary function:	Main Battle Tank
Contractors:	Land Systems Division of General Dynamics, Sterling, Mich.
Unit cost:	$2.6 million
Weight (fully armed):	67.7 tons (64.1 metric tons)
Length (gun forward):	32.3 feet (9.8 meters)
Height:	8.0 feet (2.9 meters)

(more)

Width:	12.0 feet (3.7 meters)
Range:	289 miles (465.3 km)
Crew:	Four
Road speed:	42 miles (67.2 km) per hour (governed) 30 miles (48 km) per hour (cross country)
Power plant:	AGT 1,500 hp turbine engine
Power train:	Hydrokinetic, fully automatic with four forward and two reverse gear ratios
Propulsion:	1,500 hp multi-fuel turbine engine with a horsepower-to-weight ratio of 22.2 hp per ton of vehicle weight
Main armor:	Composite steel and fabricated materials
Main armament:	120mm (4.8 inch) cannon
Muzzle velocity:	More than 4,500 feet per second
Maximum range:	More than 2.5 km (1.6 miles)
Rate of fire:	Classified
Ammunition feed:	Manual load
Secondary armament:	50 cal. (approx. 12.2mm) machine gun (tank commander), two 7.62mm (.30 cal.) coaxial machine guns

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-551A1 SHERIDAN TANK

SERVICE: Army

DESCRIPTION:
A light tank with airdrop capability.

FEATURES:
The M-551A1 Sheridan is a lightly armored, tracked, air droppable, direct fire tank used in airdrop missions by the 82nd Airborne Division, Fort Bragg, N.C., and by the Opposing Forces Regiment, National Training Center at Fort Irwin, Calif. It uses a Laser Range Finder and Tank Thermal Sight.

BACKGROUND:
The Army received the Sheridan in 1967. It has been out of production since 1970 and is only in service in limited numbers. The 82nd Airborne Division has 57, using them instead of the M-1A1, which cannot be parachuted from an aircraft). 300 Sheridans are used by the Opposing Forces Regiment at the National Training Center as "enemy" tanks in combat training.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Armor support for 82d Airborne Division and training support at the National Training Center
Contractor:	General Motors Corp., Detroit, Mich.
Weight (combat loaded):	36,000 pounds (16,200 kg)
Length:	20.67 feet (6.26 meters)
Height:	9.67 feet (2.9 meters)
Width:	9.18 feet (2.8 meters)
Range:	373 miles (596.8 km)
Crew:	Four
Road speed:	43 miles (68.8 km) per hour
Power train:	300 hp diesel
Armor:	Aluminum
Main armament:	152mm gun
Muzzle velocity:	689 meters (2,774 feet) per second
Maximum range:	3,000 meters (1.9 miles)
Lethality:	Effective against vehicles, bunkers, armored targets
Rate of fire:	Two missiles per minute
Ammunition feed:	Manually loaded
Secondary Armament:	7.62mm (.30 cal.) machine gun and a .50-cal. machine gun

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-60A1 TANK

SERVICE: Marine Corps

DESCRIPTION: Main battle tank

FEATURES:
The M-60A1 Main Battle Tank is a fully tracked, armored, combat vehicle operated by a crew consisting of a driver, gunner, loader, and tank commander. The vehicle is powered by a 750 horsepower V-12 air cooled compression ignition engine. It has a 105mm main gun system, and carries 63 rounds for the main gun on board. The vehicle is further equipped with a deep water fording kit.

The tank's suspension system, with six road wheels per side, is torsion bar sprung. The main armament, the 105mm gun, is mounted on a 360-degree turret. Secondary armament includes a .50 caliber machine gun in the commander's cupola, a coaxially mounted 7.62mm machine gun, and an M-239 smoke grenade launcher. The M-60 Tank is equipped with three night vision periscopes.

INVENTORY: 716 tanks

BACKGROUND:
The M-60A1 Tank has been in the Marine Corps inventory since 1974. Applique armor has been added to the M-60A1 to enhance survivability against antitank threats.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

Primary function:	Main battle tank
Builder:	Chrysler Defense Systems
Cost:	$872,745
Power plant:	12 cylinder reciprocating diesel engine
Length:	27 feet (8.23 meters)
Width:	12 feet (3.66 meters)
Height:	11 feet (3.35 meters)
Weight:	54 tons (48.97 metric tons)
Weight fully armed:	Without applique armor: 57.3 tons (51.97 metric tons) With applique armor: 59 tons (53.51 metric tons)

(more)

Caliber main gun:	105mm
Speed:	30 miles (48.3 km) / hour (maximum)
Cruising range:	240 miles (386.4 km)
Ground clearance:	18 inches (.4572 meters)
Obstacle clearance:	Vertical:3 feet (.915 meters) Trench:8.5 feet (2.5925 meters)
Fording depth:	4 feet (1.22 meters); w/DWFK: 6 feet (1.83 meters) Units: One Marine Reserve tank battalion retains the M60. The M-60 is being replaced by the M-1A1. Crew:Tank commander, driver, gunner and loader
Armament:	Main:105mm rifle cannon Secondary: .50 caliber machine gun 7.62mm machine gun
Weight of main gun:	7,377 pounds (3,349.15 kg)
Magazine capacity:	63 rounds for main gun 6,000 rounds for 7.62mm machine gun 940 rounds for .50 caliber machine gun
Rate of fire:	8 main gun rounds/minute
Introduction date:	June 1975

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-88A1 RECOVERY VEHICLE

SERVICES: Army and Marine Corps

DESCRIPTION:
An armored vehicle used as a wrecker for disabled tanks

FEATURES:
The M-88A1 is an armor-protected recovery vehicle used to tow, winch, and lift disabled armored combat vehicles. The system is most effective in recovering vehicles of 60 tons (54 metric tons) or less. In addition to towing, the M-88A1 mounts a winch that can pull up to 45 tons (40.5 metric tons), and a boom capable of lifting up to 25 tons (22.5 metric tons). It is also used to support critical maintenance operations such as engine replacement of vehicles undergoing battlefield maintenance.

BACKGROUND:
The M-88A1 was introduced to the Army and the Marine Corps in 1977.

POINTS OF CONTACT:
Army: Army Public Affairs, (703)697-7589:
Marine Corps: Headquarters, U.S. Marine Corps, Division of Public Affairs, (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Armored recovery vehicle
Contractor:	BMY Combat Systems, York, Pennsylvania
Weight:	112,000 lbs (50,858 kgms)
Length:	27.1 feet (8.27 meters)
Width:	11.25 feet (3.43 meters)
Height:	10.25 feet (3.12 meters)
Speed:	26 miles per hour (41.86 km per hour) without a towed load
Range:	300 miles (483 km)
Armament:	M-2 .50 caliber machine gun
Grade ascending:	60%
Inventory:	The Army has 2,458 M-88A1s in its inventory. The Marine Corps has 79.
Unit cost:	$1.2 million

M-9 ARMORED COMBAT EARTHMOVER

SERVICES: Army and Marine Corps

DESCRIPTION:
The M-9 ACE is an armored earthmover used to dig firing positions for various weapons systems.

FEATURES:
The M-9 Armored Combat Earthmover is an amphibious, fully tracked vehicle used to prepare firing positions for artillery, tanks and other weapon systems. It is equipped with an aluminum structure, which protects against small arms fire and artillery fragments. It has two smoke grenade launchers for its own protection and also provides chemical-biological protection for the operator. It features an 8.7 cubic yard scraper bowl and bulldozer blade. The hydro-pneumatic suspension allows the front of the vehicle to be raised, lowered or tilted to permit dozing, excavating, rough grading and ditching. It has a two-speed winch with a 25,000 pound pull.

BACKGROUND:
The ACE was used during the Persian Gulf War before and in the early stages of the ground war to breach Iraqi fortifaction.

INVENTORY:
At the end of the current (and last) contract in late 1992, the Army will have purchased 448 M-9 ACEs.

FIRST DELIVERY DATE: June 1990

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703) 614-1492

GENERAL CHARACTERISTICS

Primary function:	Combat fast-moving earthmover
Contractor:	BMY Corporation, York, Pa.
Unit cost:	$720,000
Weight:	Net: 36,000 pounds (16,200 kg) Gross: 54,000 pounds (24,300 kg)
Length:	20 feet 5 inches (6.2 meters)
Height:	8 feet 9 inches (2.7 meters)
Width:	With extensions: 10 feet 4 inches (3.1 meters) Without extensions: 9 feet 1 inch (2.8 meters)
Speed:	Road: 30 miles (48 km) per hour Afloat: 3 miles (4.8 km) per hour
Range:	200 miles (320 km)

CHAPTER 6

Wheeled Vehicles

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

M-939A2 5-TON TRUCK

SERVICE: Army

DESCRIPTION:
240-horsepower cargo truck

FEATURES:
The M-939A2 tactical truck is a five-ton capacity, six-wheel drive cargo truck used for transportation of all types of supplies. The M-939 series comes in six body styles: cargo, dump, wrecker, van and long-wheel-base cargo. Its central tire inflation system enables the crew to increase or decrease the air pressure in the tires to improve mobility on or off roads. It can tow 21,000 pounds.

BACKGROUND:
The M-939A2 is a fitting replacement for the famed Army "deuce-and-a-half" truck. The Army received the M-939A2 in 1989.

INVENTORY:
There are presently 10,807 in the Army's inventory.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary Function:	Tactical truck
Contractor:	BMY Corp., Marysville, Ohio
Unit Cost:	$80,548
Weight:	31,740 pounds (14,283 kilograms)
Length:	26.1 feet (7.9 meters)
Height:	10.19 feet (3.1 meters)
Width:	8.08 feet (2.5 meters)
Range:	550 miles (880 kilometers)
Crew:	Three
Power:	240 Horsepower Cummins diesel
Road Speed:	55 miles (88 kilometers) per hour
Armor:	None
Armament:	None

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-923 5-TON TRUCK

Service: Marine Corps

DESCRIPTION:
Five-ton diesel-powered truck

MISSION:
Marine Corps five-ton trucks provide transportation, hauling and towing of just about everything in the equipment inventory. These trucks transport troops, supplies, ammunition, materials, construction items, etc. These trucks also tow many types of trailers, artillery guns and vans.

Almost all Marine Corps units are equipped with five-ton trucks. The primary truck transport asset of the Marine Corps, it is available in cargo, dump, tractor and wrecker configurations.

INVENTORY: 8,300

Photo unavailable at press time

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Personnel and cargo transport
Unit cost:	$105,000
Length:	25.6 feet (7.81 meters)
Width:	8.17 feet (2.5 meters)
Weight:	21,600 pounds (9806.4 kg) empty
Height:	9.73 feet (2.97 meters) reducible to 7.6 feet (2.32 meters)
Engine:	6-cylinder, in-line, liquid cooled, compression ignition
Horsepower:	250 at 2,100 RPM
Transmission:	five-speed automatic
Transfer Case:	two-speed synchronous
Electrical System:	24 volt, negative ground, 60 amps
Brakes:	Air hydraulic, drum
Fording depth:	Standard: 2½ feet (.76 meters) With deep water fording kit installed: 6½ feet (1.98 meters)
Fuel type:	Diesel
Fuel capacity:	81 gallons (306.6 liters)
Range:	350 miles (563.15 km) highway

KLR 2250-D8 MOTORCYCLE

SERVICE: Marine Corps

DESCRIPTION:
A lightweight cross-country motorcycle, primarily used for message delivery.

FEATURES:
The KLR is a lightweight, rugged, commercial, cross-country motorcycle that has been modified for military use. It provides an alternate means of transporting messages, documents, and light cargo between units. The KLR 250 may also be used by forward observers, military police and reconnaissance personnel. The size and construction make it highly mobile on all roads and cross-country terrain. The 1991 model KLR replaces the 1984 model.

INVENTORY: 265

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Cross-country motorcycle
Unit cost:	$4,500
Length:	7 feet (2.13 meters)
Width:	2.8 feet (.86 meters)
Weight:	258 pounds (117.13 kg)
Engine:	One-cylinder, liquid cooled, overhead cam, 250 cc
Horsepower:	23 horsepower
Transmission:	6-speed, manual chain drive
Fuel capacity:	2.8 gallons
Range:	210 miles (338 km) on highway

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

HEAVY EQUIPMENT TRANSPORT SYSTEM

SERVICE: Army

DESCRIPTION:
Heavy duty flatbed tractor-trailer

FEATURES:
The HETS is required to transport, deploy and evacuate 70-ton payloads, primarily M-1 tanks, on highways and unimproved roads and cross-country. The HETS consists of the M-1070 truck tractor and M-1000 semi-trailer. HETS has automatically steerable axles and load leveling hydraulic suspension. The tractor has front and rear axle steering with central tire inflation system and cab space for five crewmembers.

BACKGROUND:
HETS, which was not available for service during the Persian Gulf War, is currently in low-rate initial production. At the comple-- tion of the current contract in FY 92, the Army will have purchased 1,179 trucks, and trailers. Army units are expected to receive this vehicle in mid-1993.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Tactical wheeled vehicle
Contractors:	Oshkosh Truck Corp., Oshkosh, Wis., (tractor); Southwest Mobile Systems, St. Louis, Mo. (trailer)
Unit Cost:	$330,000
Weight:	Gross weight loaded, 231,400 pounds (104,130 kg)
Length:	Truck/trailer, 29.8 feet/43.3 feet (9 meters/13.1 meters)
Height:	Truck/trailer, 11.8 feet/25 feet (3.6 meters/7.6 meters)
Width:	Truck/trailer, 8.5 feet/10 feet (2.57 meters/3.0 3 meters)
Range:	450 miles (720 km)
Crew:	Two

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

HIGH MOBILITY MULTI-PURPOSE WHEELED VEHICLE (HMMWV)

(The Marine Corps designates this vehicle as M-998 Truck)

SERVICES: Army and Marine Corps

DESCRIPTION:
In the 1980s, the HMMWV replaced the famed Jeep as the Army's basic utility vehicle. Generally, it is the workhorse of the wheeled vehicle fleet. It is used as a weapons carrier to tow light howitzers or carry mortars. Variants of the "Humvee" are also used as ambulances, military police tactical vehicles and for battlefield reconnaissance. The HMMWV has a cargo capacity of 1¼ to 2¼ tons, depending on the configuration. It is a highly mobile tactical vehicle with a common chassis for various configurations, including: Cargo/troop carrier, armament carrier, TOW missile carrier, ambulance and shelter carrier.

BACKGROUND:
The Army received the HMMWV in 1985. At the end of FY 93, the Army will have 89,486 HMMWVs. There are 19,598 HMMWVs in the Marine Corps inventory. The average unit cost of the HMMWV (based upon an average of all configurations) is $31,571.

POINT OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps Division of Public Affairs, (703) 614-1492

GENERAL CHARACTERISTICS

Primary function:	General purpose vehicle
Contractor:	AM General Corp., South Bend, Ind.
Weight:	7,700 to 10,000 pounds (3,465 to 4,500 kg) depending on configuration
Length:	180 to 203 inches (4.55 to 5.1 meters)
Height:	72 to 105 inches (2 to 2.7 meters)
Width:	85 inches (2.1 meters)
Range:	300 miles (480 km)
Power train:	150 horsepower 6.2-liter diesel engine, three-speed automatic transmission, 4-wheel drive
Crew:	Driver plus three passengers
Armor:	None
Road speed:	60 mph (96 kmph)
Armament:	Can be equipped with a .50-caliber machine gun, a Mark 19-3 40mm Grenade Launcher, a 7.62mm machine gun, Stinger anti-aircraft or TOW antitank missiles.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

LIGHT ARMORED VEHICLE (LAV-25)

SERVICE: Marine Corps

DESCRIPTION:
An armored, amphibious and highly versatile battle vehicle.

COMMON FEATURES:
The LAV is an all-terrain, all-weather vehicle with night capabilities. All versions carry an M-60 7.62mm (.30 cal.) machine gun and other armament depending on their configuration, plus 16 smoke grenades. It can be transported by large cargo aircraft and helicopters, and requires a maximum of three minutes to make it fully amphibious.

The LAV is made in six configurations: battle vehicle, anti-tank, mortar, logistics, recovery and command/control.

SPECIFIC FEATURES:

LAV-25: Battlefield vehicle, with a 25mm (one-inch) chain gun, capable of defeating soft and armored targets and carrying six troops to and from combat areas.

LAV-AT: Anti-tank vehicle, capable of defeating heavy armored targets at long ranges. It is equipped with the M-901 TOW heavy anti-tank missile in addition to the M-60 machine gun.

LAV-C2: The command and control version is used as a mobile command post in the field. It carries an array of HF, VHF and UHF radios and other communication equipment and can accomodate a unit commander, two staff members and two radio operators in addition to the driver and vehicle commander.

LAV-L: The logistics version of the LAV is designed to transport supplies, fuel and ammunition to the battlefield. Its payload capability is 5,240 pounds (2,380 kg).

LAV-M: Used as a battlefield mortar platform to provide indirect fire support in combat. It carries an M-252 81mm mortar.

LAV-R: The recovery unit, equipped with a 9,000-pound boom crane and a 30,000-pound winch, can reach and recover disabled vehicles on the battlefield.

INVENTORY:
The Marine Corps has on hand 401 -25s, 95 ATs, 50 C2s, 94 L models, 50 M models and 45 R models.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703)614-1492.

(more)

GENERAL CHARACTERISTICS

Primary function:	Fire power to defeat soft and armored targets
Contractor:	LAV Corporation
Unit Cost:	LAV-25: $900,000; LAV-AT: $1.52 million
Power source:	Detroit diesel 6V53T engine
Length:	21 feet (6.38 meters)
Height:	106 to 110 inches (2.8 meters); 123 inches (3.12 meters) with the anti-tank model in firing position Width:98.4 inches (2.5 meters). The recovery unit is 109 inches (2.77 meters) wide.
Weight/combat weight:	-25: 24,100/28/200 pounds (10,845/12690 kg) -AT: 24,850/27,650 pounds (11,182/12,442 kg) -C2: 24,840/27,060 pounds (11,178/12,177 kg) -L: 22,960/28,200 pounds (10,332/1,2690 kg) -M: 22,750/26,700 pounds (10.237/12,015 kg) -R: 26,200/28,320 pounds (11,790/12,744 kg)
Range:	410 miles
Speed:	62 miles (99.2 km) per hour
Swim speed:	6 mph (9.6 km)
Crew:	Three to seven
Armament, all configurations:	M-60 7.62mm machine gun; 16 smoke grenades
Armament, unique:	-25: M-242 machine gun can be mounted in the commander's turret -AT: TOW missile launcher and 16 missiles -C2: None -L: None -M: M-252 81mm mortar, 99 mortar rounds -R: None

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

LOGISTICS VEHICLE SYSTEM

SERVICE: Marine Corps

DESCRIPTION:
Heavy-duty trailer-truck system

MISSION:
The MK-48 Front Power Unit (FPU) and its associated trailers (MK-14, MK-15, MK-16, MK-17, MK-18) known as the Rear Power Units (RPU) form the Logistics Vehicle System. The LVS is primarily used by the combat service support motor transport units to transport large quantities of supplies, containers, equipment items, armored vehicles, ammunition, etc. from beachheads, airfields, ports and railheads to combat service support areas or support units.

FEATURES:
The MK-48 is a 4-wheel drive, rubber-tired, tactical truck designed to power the LVS trailer/Rear Body Units. It can be attached to any one of the trailer units through a fifth wheel joint to form a dual body vehicle.

INVENTORY:
Front Power Unit (MK-48): 1584
Rear Power Units: 1304

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380--1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Transports supplies, ammunition, heavy equipment and armored vehicles
Unit cost:	$104,641
Front Power Unit (FPU):	MK-48
Length:	19.88 feet (6.1 meters)
Width:	8 feet (2.44 meters)
Weight:	12.65 tons (11.47 metric tons)
Height:	8.5 feet (2.59 meters)
Engine:	V8 liquid cooled, compression ignition, turbocharged
Horsepower:	445 at 2,100 RPM
Transmission:	4 Speed, automatic
Transfer Case:	2 Speed, manual
Electrical System:	24 Volt
Brakes:	Air
Fording Depth:	5 feet (1.53 meters) (no fording kit)
Fuel type:	diesel
Fuel capacity:	150 gallons (567.75 liters)

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Range: 450 miles (724.05 kilometers)
Crew: two

Rear Power Units (RPU)

MK-14: cargo trailer
MK-15: vehicle wrecker
MK-16: fifth wheel
MK-17: cargo trailer with crane
MK-18: ribbon bridge/container trailer

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

PALLETIZED LOAD SYSTEM

SERVICE: Army

DESCRIPTION:
A tactical vehicle for transporting palletized ammunition.

FEATURES:
The Palletized Load System (PLS) is composed of a prime mover truck with integral self-loading and unloading transport capability, a 16.5-ton payload trailer, and demountable cargo beds (flatracks). The vehicle can also be equipped with materiel handling equipment and/or a winch.

PLS is a key transportation component of the ammunition distribution system and will perform long range hauling, local hauling and unit resupply of ammunition.

BACKGROUND:
PLS is currently in low rate initial production. At the completion of the current contract in FY 94, the Army will have purchased 2,691 trucks, 1,264 trailers and 28,500 flatracks. The Army expects to begin providing this vehicle to its units in 1993. The unit cost of the truck portion is $253,707.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Tactical wheeled vehicle
Contractor:	Oshkosh Truck Corporation, Oshkosh, Wisc.
Weight:	Gross Cargo, 136,970 pounds (61,636.5 kg)
Length:	Truck and trailer, 59 feet (17.89 meters)
Height:	9.5 feet (2.88 meters)
Width:	8 feet (2.4 meters)
Range:	336 miles (537.6 km)
Crew:	One
Power train:	Detroit diesel 500 HP
Road speed:	55 miles (88 km) per hour
Armor:	None
Armament:	None

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

XM-93 FOX, NUCLEAR, BIOLOGICAL AND CHEMICAL RECONNAISSANCE SYSTEM

SERVICE: Army

DESCRIPTION:
Vehicle equipped to detect nuclear, biological and chemical hazards

FEATURES:
The XM-93 Fox NBC Reconnaisance System is a dedicated system of NBC detection, warning and sampling equipment integrated into a high speed, high mobility armored carrier. The system contains a chemical agent monitor, chemical agent detector alarm, radiation detection device, navigation system, secure communications, area marking system and collective protection. The system provides combat information on the presence of NBC hazards. The Fox can operate in all areas, in adverse weather and under all types of battlefield conditions.

BACKGROUND:
The Army received the XM-93 Fox in 1990. It has 55 systems. The Army also has 48 more systems on order, eight of which are in production qualification testing. Total inventory currently anticipated is 103 systems. In development is the XM-93E1 System Improvement Fox. It will add a standoff chemical detector, a meteorological sensor, fully integrated sensors using a central data processor, and secure digital communications. The XM-93E1 will reduce the crew from four to three. The hardware unit cost of this system is $2.1 million.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Mobile nuclear and chemical agent detection
Contractors:	Prime: General Dynamics Land Systems, Warren, Mich.; Subcontractor: Thyssen Henschel, Kassel, GE
Weight:	18.7 tons (16.8 metric tons)
Length:	23.9 feet (7.24 meters)
Width:	9.8 feet (3 meters)
Range:	450 miles (720 km)
Crew:	Four
Power Train:	320 HP Daimler Benz turbodiesel
Road Speed:	55 miles (88 km) per hour
Water Speed:	6 miles (9.6 km) per hour
Armor:	Light armor, effective against small arms fire
Armament:	7.62mm (.30 cal.) M-240 machine gun

CHAPTER 7

Missiles, Rockets and Torpedoes

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AEGIS WEAPONS SYSTEM

SERVICE: Navy

DESCRIPTION:
Surface-launched missile

FEATURES:
The Aegis missile can defeat a wide range of targets from wave top to directly overhead. It is effective against anti-ship cruise missiles and manned aircraft in all environmental conditions. It has all-weather capability and outstanding abilities in chaff and jamming environments.

BACKGROUND:
Modern anti-ship missiles can be launched several hundred miles away in coordinated attacks, combining air, surface and subsurface launches, so that the missiles arrive on target almost simultaneously.

The Navy defends against this threat with a number of different systems. In a carrier battle group, fighter aircraft provide the outer layer of defense; Aegis coordinates and protects the inner layer.

In the late 1960s, the Navy developed an Advanced Surface Missile System (ASMS). ASMS was renamed Aegis (after the mythological shield of Zeus) in December 1969. The Navy's Aegis system provides area defense for the battle group as well as a clear air picture for more effective deployment of air assets. Aegis enables fighter aircraft to concentrate more on the outer air battle while cruisers and destroyers assume a greater responsibility for battle group area defense. Twenty-five percent of the Tomahawk missiles fired into Iraq came from Aegis cruisers.

Aegis Missile Cruiser Vincennes

FEATURES:
The Aegis system was designed as a total weapon system, from detection to kill. The heart of the system is an advanced, automatic detect and track, multi-function phased-array radar, the AN/SPY-1. This high powered (four megawatt) radar is able to perform search, track and missile guidance functions simultaneously with a track capacity of well over 100 targets. The first Engineering Development Model (EDM-1) was installed in the test ship, USS Norton Sound (AVM 1) in 1973.

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The computer-based command and decision element is the core of the Aegis combat system. This interface makes the Aegis combat system capable of simultaneous operation against a multi-mission threat: anti-air, anti-surface and anti-submarine warfare.

The Navy built the first Aegis cruisers using the hull and machinery designs of Spruance class destroyers. The commissioning of USS Bunker Hill (CG 52) opened a new era in surface warfare as the first Aegis ship outfitted with the Vertical Launching System (VLS), allowing greater missile selection, firepower and survivability. The improved AN/SPY-1B radar went to sea in USS Princeton (CG 59), ushering in another advance in Aegis capabilities. USS Chosin (CG 65) introduced the AN/UYK-43/44 computers, which provide increased processing capabilities. The 27th and final CG 47 class cruiser will be commissioned in 1994.

In 1980, a smaller ship was designed using an improved sea-keeping hull form, reduced infra-red and radar cross section and upgrades to the Aegis Weapon System. The first ship of the DDG 51 class, Arleigh Burke, was commissioned on the Fourth of July, 1991. Twenty-six DDG 51 class destroyers have been appropriated through fiscal year 1993. Twenty-two destroyers are currently in various stages of construction and contracts for the four ships appropriated in fiscal year 1993 will be awarded in early 1993. Forty-nine destroyers are planned.

The DDG 51 class was named after a living person, the legendary Adm. Arleigh Burke, the most famous destroyerman of World War II. The second destroyer, Barry (DDG 52), was commissioned on Dec. 12, 1992. The next destroyer, John Paul Jones (DDG 53) will be commissioned in December 1993.

DDG 51s are constructed in flights, allowing technological advances during construction. Flight II, introduced in FY 1992, incorporates improvements to the SPY radar and the Standard missile, active electronic countermeasures and communications. Flight IIA, to be introduced in Fiscal Year 1994, will add a helicopter hangar with one anti-submarine helicopter and one armed attack helicopter. The Aegis program has also projected reducing the cost of each Flight IIA ship by at least $30 million.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (00D); Washington, DC 20362; (703) 692-6920

AGM-130A MISSILE

SERVICE: Air Force

DESCRIPTION:
The AGM-130A is a powered air-to-surface missile designed for high- and low-altitude strikes at standoff ranges.

FEATURES:
The AGM-130A employs a rocket motor for extended range and an altimeter for altitude control.

The AGM-130A is equipped with a television or imaging infrared seeker and data link. The seeker provides a visual presentation of the target as seen from the weapon, transmitted by a data link system to the aircraft cockpit monitor. The seeker can be locked onto the target before or after launch for automatic weapon guidance, or it can be manually steered by the weapon system officer.

BACKGROUND:
The AGM-130A is designed to be used with F-111 and F-15E aircraft. Development of the AGM-130A began in 1984 as a product

improvement of the GBU-15 guided glide bomb.

The AGM-130A may be used in a direct or indirect attack mode, the primary method of operation.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

GENERAL CHARACTERISTICS

Primary function:	Air-to-surface guided and powered bomb
Contractor:	Rockwell International Corp.
Thrust:	classified
Length:	12 feet, 10.5 inches (3.9 meters)
Launch weight:	2,917 pounds (1,312.6 kg)
Diameter:	18 inches (45.72 cm)
Wing span:	59 inches (149.86 cm)
Range and speed:	Classified
Ceiling:	30,000-plus feet (9,091 meters)
Guidance system:	Television or imaging infrared seeker
Date deployed:	In production at present

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AGM-69A SHORT-RANGE ATTACK MISSILE (SRAM)

SERVICE: Air Force

DESCRIPTION:
The AGM-69 Short-Range Attack Missile (SRAM) is a supersonic air-to-surface missile used by bombers to neutralize enemy air defenses, such as surface-to-air missile sites, and to strike heavily defended and mobile targets.

FEATURES:
The AGM-69 SRAM can be launched without the bomber aircraft being exposed to target-area defense systems. Its range, speed, and small radar image provide excellent penetration against advanced enemy air defense systems.

The SRAM has an inertial guidance system with terrain-avoidance capability designed so that it cannot be jammed. It can fly sharply curved courses, can be targeted aboard the aircraft immediately prior to launch, and has flexibility in missile speeds and trajectories. It is carried by B-52G/H and B-1B aircraft.

The B-52 can carry eight SRAMs on a rotary launcher in the rear bomb bay. The B-1B can carry up to three rotary launchers of eight SRAMs each, or a total of 24 missiles per aircraft. The first SRAM-capable B-1B unit, located at Dyess Air Force Base, Texas, achieved initial operational capability in September 1986.

BACKGROUND:
The SRAM's initial 38 test launches were conducted between 1969 and 1971 from FB-111s and B-52 aircraft. The development test program was completed in July 1971, with the missile exceeding specification requirements in terms of range, accuracy, radar cross section and reliability. Since 1971, 123 more SRAMs were successfully tested during the follow-on test and evaluation program.

Production of the AGM-69A began in 1971, and the Strategic Air Command received them in March 1972. First to receive them for operational use were the FB-111s of the 509th Bombardment Wing, Pease Air Force Base, N.H. Delivery of the 1,500 AGM-69s to the Air Force was complete in 1975.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

(more)

GENERAL CHARACTERISTICS

Primary function:	Air-to-surface strategic missile
Unit cost:	$300,000
Builder:	Boeing Aerospace Co.
Power plant:	Lockheed Propulsion Co. LPC-415 solid-propellant, two-pulse rocket motor
Length:	14 feet (4.24 meters)
Diameter:	17 inches (43.18 centimeters)
Speed and range:	classified
Launch weight:	2,208 pounds (993.6 kilograms)
Warhead:	Nuclear capable
Date deployed:	March 1972

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AGM-86B/C AIR LAUNCHED CRUISE MISSILES

SERVICE: Air Force

DESCRIPTION:
The AGM-86B/C is a guided air-launched surface attack missile.

FEATURES:
The small, winged AGM-86B is powered by a turbofan jet engine that propels it at sustained subsonic speeds. It is able to fly complicated routes to a target through use of a terrain contour-matching guidance system. During flight, this system compares surface characteristics with maps stored in on-board computers to determine the missile's location. As the missile nears its target, comparisons become more specific, guiding the missile to target with pinpoint accuracy.

AGM-86B missiles can be air-launched in large numbers by the bomber force. The AGM-86C differs from the B model in that it is a conventional warhead air-launched cruise missile.

BACKGROUND:
The AGM-86B ALCM was developed to increase the effectiveness of B-52 bombers.

In February 1974, the Air Force entered into contracts to develop and test-fly the prototype AGM-86A air-launched cruise missile, which was slightly smaller than the later B and C models. The 86A model did not go into production. Instead, in January 1977, the Air Force began full-scale development of the AGM-86B.

Production of the initial 225 AGM-86B missiles began in 1980 and production of a total 1,715 of the missiles was completed in October 1986. The air-launched cruise missile had become operational four years earlier, in December 1982, in the 416th

Bombardment Wing, Griffiss Air Force Base, N.Y.

In June 1986 a limited number of AGM-86B missiles were converted to carry a high-explosive blast/fragmentation warhead. This modification also replaced the missile's terrain contour-matching guidance system by integration of a Global Positioning System capability with the missiles' existing inertial navigation computer system. The C model became operational in January 1991 at the onset of Operation Desert Storm. B-52s, flying round-robin missions from Barksdale AFB, La., at designated launch points in the Central Command's area of responsibility, attacked high-priority targets in Iraq. These missions marked the beginning of the air campaign in Desert Storm and represented the longest known aircraft combat sorties in history, more than 14,000 miles and 35 hours of flight.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

(more)

GENERAL CHARACTERISTICS

Primary function:	Air-to-surface strategic missile
Contractor:	Boeing Aerospace Co.
Unit cost:	$1 million
Guidance Contractors:	Litton Guidance and Control, and Rockwell-Collins Avionics (AGM-86C)
Power plant:	Williams Research Corp. AGM 86B: F-107-WR-10 turbofan engine; AGM 86C: F-107-WR-101 turbofan engine
Thrust:	600 pounds (270 kilograms)
Length:	20 feet, 9 inches (6.29 meters)
Weight:	3,150 pounds (1,417.5 kilograms)
Diameter:	24.5 inches (62.23 centimeter)
Wing span:	12 feet (3.64 meters)
Range:	AGM-86B - 1,500-plus miles (1,305 nautical miles);
Speed:	About 550 miles per hour (Mach 0.73/880 kilometers per hour)
Guidance system:	Litton inertial navigation element with terrain contour-matching updates
Warheads:	AGM 86B nuclear capable; AGM 86C conventional
Sensors:	A terrain contour-matching guidance system that allows the missile to fly complicated routes to a target through use of maps of the planned flight route stored in on-board computers
Date deployed:	December 1982

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIM-7 SPARROW MISSILE

SERVICES: Air Force, Marine Corps, Navy

DESCRIPTION:
A highly maneuverable air-to-air missile with surface-to-air capability.

FEATURES:
The AIM 7 Sparrow and RIM-7M Sea Sparrow are radar-guided, air-to-air missiles with high explosive warheads. It has a cylindrical body with four wings at mid-body and four tail fins.

The Navy uses the Sea Sparrow version aboard ships as a surface-to-air anti-missile defense.

The versatile Sparrow has all-weather, all-altitude operational capability and can attack high-performance aircraft and missiles from any direction. It is widely deployed by U.S. and NATO forces, and the Sea Sparrow is found aboard many U. S. and NATO surface warships.

BACKGROUND:
Originally developed by Sperry and the U. S. Navy, Sparrow's later versions were developed and produced by Raytheon Co. and General Dynamics.

Subsequent versions were dubbed the "dog-fight modification" because its increased maneuverability at short range made

it better suited for close-in visual engagements.

The AIM/RIM-7M, the only current operational version, entered service in 1982. It boasts improved low-altitude performance and a significantly more lethal warhead.

In the Persian Gulf war, the radar-guided AIM-7 Sparrow proved to be the most potent air-to-air weapon used by Air Force fighter pilots.

POINT OF CONTACT:
AIR FORCE: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007;
NAVY: Public Affairs Office, Naval Air Systems Command (AIR 07D2), Washington, DC 20361-0701; (202) 746-3791;
MARINE CORPS: Headquarters, U.S. Marine Corps, Public Affairs, Washington, DC 20380-1775; (703) 614-1492

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GENERAL CHARACTERISTICS

Primary function:	Air-to-air and surface-to-air radar-guided missile.
Contractors:	Raytheon Co., General Dynamics
Power plant:	Hercules Mk-58 solid-propellant rocket motor
Thrust:	Classified
Speed:	More than 2,660 miles (4,256 km) per hour
Range:	More than 30 nautical miles (approx 55 km)
Length:	12 feet (3.64 meters)
Diameter:	8 inches (20.3 cm)
Wingspan:	3 feet, 4 inches (1 meter)
Warhead:	Annular blast fragmentation warhead, 90 pounds (40.5 kg)
Launch weight:	Approx. 500 pounds (225 kg)
Guidance system:	Raytheon semi-active on continuous wave or pulsed Doppler radar energy
Date deployed:	1976
Unit cost:	$165,400
Inventory:	Classified
Aircraft platforms:	Air Force: F-4, F-15 and F-16 Marine Corps: F/A-18 and F-4 Navy: F-14 and F/A-18

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIM-9 SIDEWINDER MISSILE

SERVICES: Air Force, Navy, Marine Corps

DESCRIPTION:
The AIM-9 Sidewinder is a heat-seeking, short-range, air-to-air missile carried by fighter aircraft.

FEATURES:
The Sidewinder has a high-explosive warhead and an infrared heat-seeking guidance system. Its main components are an infrared homing guidance section, an active optical target detector, a high-explosive warhead and a rocket motor.

The guidance section enables the missile to home in on the engine exhaust of target aircraft. An infrared unit costs less than other types of guidance systems, and can be used day or night and in all weather conditions. The infrared seeker also permits the pilot to launch the missile, then leave the area or take evasive action while the missile guides itself to the target.

BACKGROUND:
A prototype of the Sidewinder, the AIM 9A, was first fired successfully in September 1953. The initial production version, designated AIM-9B, entered the Air Force inventory in 1956 and has been improved upon steadily since.

The L model was the first Sidewinder with the ability to attack from all angles, including head-on. The AIM-9M, currently the only one operational, has the all-aspect capability of the L model while providing all-around higher performance. The M model has improved defense against infrared countermeasures, enhanced background discrimination capability, and a reduced-smoke rocket motor. These modifications increase its ability to locate and lock on a target and decrease the missile's chances for detection. Deliveries began in 1983.

The AIM-9M-7 was a specific modifition to AIM-9M in response to threats expected in the Persian Gulf War zone. The AIM-9M and AIM-9X are future variants presently under development.

The Sidewinder is the most widely used air-to-air missile in the West, with more than 110,000 missiles produced for 27 nations excluding the United States. The AIM-9 is one of the oldest, least expensive and most successful missiles in the entire U. S. weapons inventory.

POINTS OF CONTACT:
Air Force: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804)764-5007; **Navy:** Public Affairs Office, Naval Air Systems Command (AIR 07D2), Washington, D.C. 20361-0701; (202)746-3791; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-1775; (703) 614-1492.

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GENERAL CHARACTERISTICS

Primary function:	Air-to-air missile
Contractor:	Raytheon Company; Ford Aerospace and Communications Corp.; Loral
Power plant:	Thiokol Hercules and Bermite Mk 36 Mod 11; single-stage, solid-propellant rocket motor
Length:	9 feet, 6 inches (2.89 meters)
Diameter:	5 inches (0.13 meters)
Fin span:	2 feet, 1 inch (0.63 meters)
Speed:	Supersonic
Warhead:	Blast fragmentation warhead (conventional) weighing 20.8 pounds (9.36 kg)
Launch weight:	190 pounds (85.5 kg)
Range:	10 miles-plus (8.7 nautical miles; 16 km)
Guidance system:	Solid-state infrared homing system
Unit cost:	$41,300
Date deployed:	1956
Aircraft platforms:	Air Force: F-4, F-15, F-16, F-111, A-7, A-10 Navy: All Navy fighters and attack aircraft Marine Corps: F/A-18, F-4, A-4, A-6, OV-10, and AH-1

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

AIM-120 AMRAAM

SERVICES: Air Force and Navy

DESCRIPTION:
The AIM-120 Advanced Medium-Range, Air-to-Air Missile is a new generation air-to--air missile, developed as the result of a joint agreement among the United States and its major allies.

FEATURES:
It has an all-weather, beyond-visual-range capability and is scheduled to be operational from 1989 to beyond the year 2000.

The AMRAAM program will improve the aerial combat capabilities of U.S. and allied aircraft to meet the future threat of enemy air-to-air weapons.

AMRAAM will serve as a follow-on to the current AIM-7 Sparrow missile series. The new missile is faster, smaller and lighter, and has improved capabilities against low-altitude targets. It also incorporates an active radar in conjunction with an inertial reference unit and micro-computer system, which makes the missile less dependent upon the fire-control system of the aircraft. Once the missile closes in on the target, its active radar guides it to intercept. This enables the pilot to aim and fire several missiles simultaneously at multiple targets and perform evasive maneuvers while the missiles guide themselves to the targets.

BACKGROUND:
The AIM-120 grew out of a joint agreement, no longer in effect, among the United States and several NATO nations to develop air-to-air missiles and to share the production technology.

POINTS OF CONTACT:
Air Force: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007; **Navy:** Public Affairs Office, Naval Air Systems Command (AIR-07D), Washington, DC 20361-0701; (703) 746-3785.

GENERAL CHARACTERISTICS

Primary function:	Medium-range, air-to-air tactical missile
Contractor:	Hughes/Raytheon
Power plant:	High performance, directed rocket motor
Length:	12 feet (3.6 meters)
Launch weight:	335 pounds (150.75 kg)

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AIM-120A MISSILE

Diameter:	Seven inches (17.78 cm)
Wing span:	21 inches (53.3 cm)
Speed:	Supersonic
Warhead:	Blast fragmentation; high explosive
Date deployed:	September 1991
Unit cost:	$386,000
Aircraft platforms:	Air Force: F-15 and F-16 Navy: F-14D and F/A-18 NATO: German F-4, British Tornado and Sea Harrier

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

AVENGER MISSILE SYSTEM

SERVICES: Army and Marine Corps

DESCRIPTION:
A mobile battery of eight Stinger missiles in two reloadable pods.

FEATURES:
The Avenger is an air defense missile system consisting of a pedestal mounted "Stinger" missile battery that operates from a High Mobility Multi-purpose Wheeled Vehicle (HMMWV) chassis (See HMMWV Fact Sheet). The system consists of eight heat-seeking Stinger missiles in two quickly reloadable pods and a .50-caliber machine gun for self-defense. Avenger provides protection to rear echelon units and command posts against low-altitude and high-speed airplanes and helicopters.

BACKGROUND:
The first Army unit was equipped with the Avenger in FY89. The Army has 281 systems in its inventory and has been authorized an additional 1,498.

Avenger battery mounted on HMMWV

POINTS OF CONTACT:
Army: Army Public Affairs, (703)697-7589;
Marine Corps: Headquarters, Marine Corps, Division of Public Affairs, (703)614-1492

GENERAL CHARACTERISTICS

Primary function:	Air Defense Missile System
Contractors:	Boeing; AM General; General Dynamics; Raytheon
System Weight:	8,660 pounds(3,897 kg)
Length:	16.25 feet (4.92 meters)
Height:	8.66 feet (2.62 meters)
Width:	7.25 feet(2.19 meters)
Range:	225 miles(360 km)
Crew:	Two
Power train:	V8 6.2 liter, 150 horsepower diesel engine
Road speed:	65 miles (104 km) per hour
Missile information:	See Stinger Fact Sheet
Unit cost:	$1.09 million (not including missiles)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

CHAPARRAL GUIDED MISSILE

SERVICE: Army

DEFINITION:
Short-range air defense missile

FEATURES:
Chaparral consists of an infrared heat seeking missile, a launcher with a Forward Looking Infrared (FLIR) sight, and a tracked vehicle. The Chaparral Fire Unit may be used either carrier mounted or unmounted. The launcher contains a rotating mount that includes four missile launch rails and provides the gunner the means to aim and fire using automatic or manual tracking. Eight additional missiles are stowed in the vehicle.

The missile is lightweight, supersonic, fire-and-forget, with an infrared homing guidance system capable of engaging fixed-wing and helicopter targets. To enhance missile acquisition range and capability the Rosette Scan Seeker (RSS) guidance section has been developed and is effective against infra-red jammers.

The missile is carried and handled as an assembled single round of ammunition. The system uses an M-730A2 cargo carrying, self-propelled tracked vehicle "9a" variant of the M-113 Armored Personnel Carrier, which can be made amphibious by adding an existing swim kit. A towed configuration is also available.

BACKGROUND:
The Chaparral provides mobile short-range air defense to defeat low-altitude aircraft. The system is designed to be mobile, self-contained and air transportable.

The Army has a total of 596 Fire Units with 5,358 missiles on hand.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

(more)

GENERAL CHARACTERISTICS

Primary function:	Short Range Air Defense Missile
Contractor:	Fire Unit, Loral Aerospace Corp.; missile, Loral Aerospace Corp., Hughes Aircraft Co.
Unit Cost:	Fire unit: $2.5 million Missile: $90,000
Weight:	28,664 pounds (12,890 kilograms) including launcher and
Length:	M-730 Tracked Vehicle
Height:	19.88 feet (596.4 cm)
Width:	8.8 feet (264 cm)
Range:	Cruising Range 300 miles (480 km)
Crew:	Four
Power Train:	Turbocharged diesel engine
Road Speed:	38 miles (60.8 km) per hour highway; 20 miles (32 km) per hour cross-country
MISSILE:	
Propulsion:	Single stage solid propellant
Length:	9.5 feet (285 cm)
Diameter:	5 inches (12.7 cm)
Weight:	190 pounds (85.5 kg)
Range:	More than 9,000 meters (5.6 miles)
Guidance:	Passive Infrared Homing, Proportional Navigation
Speed:	Supersonic
Warhead:	High explosive fragmentation

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

DELTA II MEDIUM-LAUNCH VEHICLE

SERVICE: Air Force

DESCRIPTION:
The Delta II is an expendable launch vehicle used to launch Navstar Global Positioning System satellites into orbit. These satellites provide navigational data to military and civilian users. The Delta II also launches civil and commercial payloads into low-earth, polar, geo-transfer and geosynchronous orbits.

FEATURES:
The Delta II has a 12-foot longer first stage than previous Deltas. The nine solid rocket motors that encircle the first stage contain a more powerful propellant mixture than did its predecessor and are made of a composite material called graphite-epoxy. The motor cases are lighter, but as strong as the steel cases they replaced.

The new motors are six feet longer and provide 40 percent more thrust. Thrust is aided by the nine Hercules unsegmented solid-rocket motors. Six ignite at lift off and the remaining three are ignited in flight.

INVENTORY:
Two, with more on order. (Figures represent only Deltas used for military purposes)

BACKGROUND:
In January 1987, Air Force Systems Command's Space Systems Division awarded a contract to for construction of 18 Delta IIs to launch Navstar Global Positioning System satellites, originally programmed for launch on the space shuttle. Since then, the order expanded to accommodate 28 Global Positioning System satellites dedicated launch vehicles. To date, 15 of these launches have taken place. There are two complete boosters in storage at Cape Canaveral Air Force Station, Fla. (Note: figures represent only Deltas used for military purposes.)

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DELTA II MISSILE

The Delta launch vehicle family began in 1959 when NASA's Goddard Space FlightDeltas used for military purposes.)

The Delta launch vehicle family began in 1959 when NASA's Goddard Space Flight Center awarded a contract to Douglas Aircraft Company (now McDonnell Douglas Corporation) to produce and integrate 12 space-launch vehicles. The Delta used components from the U.S. Air Force's Thor Intermediate-Range Ballistic Missile program as its first stage and the U.S. Navy's Vanguard launch-vehicle program as its second. The first Delta, with an Echo I communications satellite on board, was launched from Cape Canaveral Air Force Station on May 13, 1960.

POINT OF CONTACT:
Air Force Space Command, Public Affairs Office, 150 Vandenberg St., Suite 1105, Peterson AFB, Colo. 80914-4500; (719) 554-3731

GENERAL CHARACTERISTICS

Primary function:	Space lift vehicle
Contractor:	McDonnell Douglas Space Systems Co.
Unit cost:	Not available
Power plant:	First stage: one Rocketdyne RS-27 and two LR-101-NA-11 vernier engines; both use RP-1 (refined kerosene) and L02 (liquid oxygen) as its propellants; thrust, 225,000 pounds (101,250 kg). Second stage: restartable Aerojet AJ10-110K motor; uses N204 (nitrogen tetroxide) and A50 (Aerozine 50) propellants; thrust, 9,000 pounds (4,050 kg).
Payload assist module:	If used, Star-48B Solid-fuel rocket; 15,000 pounds (6,750 kg). Nine Hercules Aerospace strap-on graphite epoxy motors (GEMs) surround the first stage for augmented lift-off; thrust 100,000 pounds (45,000 kg).
Launch Sites:	Cape Canaveral Air Force Station, Fla.; Vandenberg Air Force Base, Calif. (NASA)
Height:	(in position) 125 feet (37.5 meters)
Diameter:	8 feet (2.4 meters)
Gross liftoff weight:	506,000 pounds (227,700 kg)
Lift capability:	The Delta II can carry payloads of varying sizes into space, ranging from approximately 11,000 pounds (4,995 kg) into a near-earth orbit about 100 miles (160 km) high to 2,000 pounds (900 kg) into geosynchronous orbit, approximately 22,000 miles (35,200 km) high.
Payloads:	Department of Defense's Navstar Global Positioning System as well as NASA's MELV, Radarsat and Lageos, and commercial loads such as Inmarsat, Palapa, ASC-2 and NATO communications satellites.
Guidance system:	Delta redundant inertial measurement system and a Delco guidance computer.
Date deployed:	Nov. 26, 1990

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

FLEET BALLISTIC MISSILES

(Also called Submarine-Launched Ballistic Missiles)

SERVICE: Navy

DESCRIPTION:
Nuclear warhead missiles launched from submarines.

BACKGROUND:
The Trident II (D-5) is the sixth generation member of the U.S. Navy's Fleet Ballistic Missile (FBM) program that started in 1956. Since then the Polaris (A1), Polaris (A2), Polaris (A3), Poseidon (C3), and Trident I (C4) have provided a significant deterrent to nuclear aggression. At present the U.S. Navy deploys Poseidon (C3) and Trident I (C4), having retired the Polaris family of missiles. The first deployment of Trident II was in 1990 on the USS Tennessee (SSBN 734).

Trident I (C-4) was first deployed in 1979 and will remain on patrol until phased out in the late 1990s. This missile was designed to the same dimensions as the Poseidon missile, which allows it to be carried in existing Poseidon submarines, as well as the new Trident submarines.

Trident I has a range almost double that of the Poseidon missile it replaces. It will be deployed in the first eight submarines of the Ohio Class and in 12 of the remaining 31 Layfayette Class fleet ballistic missile submarines in the fleet.

FEATURES:
The Trident II (D-5) is a three stage, solid propellant, inertially guided FBM with a range of more than 4,000 nautical miles (4,600 statute miles). Trident II is more sophisticated with a significantly greater

payload capability. All three stages of the Trident II are made of lighter, stronger, stiffer graphite epoxy, whose integrated structure mean considerable weight saving. The missile's range is increased by the aerospike, a telescoping outward extension that reduces frontal drag by about 50 percent. The new Trident/Ohio class submarines will each carry 24 Trident II missiles that can be launched under water or on the surface.

Trident II is fired by the pressure of expanding gas within the launch tube. When the missile attains sufficient distance from the submarine, the first stage motor ignites, the aerospike extends and the boost stage

(more)

begins. Within about two minutes, after the third stage motor kicks in, the missile is traveling inexcess of 20,000 feet (6,096 meters) per second.

POINT OF CONTACT:
Department of the Navy, Strategic Systems Programs; Washington, DC 20376-5002 (703) 695-2034

GENERAL CHARACTERISTICS, TRIDENT I

Primary Function:	Strategic Nuclear Deterrence
Contractor:	Lockheed Missiles and Space Co., Inc., Sunnyvale, Calif.
Propulsion:	Three-stage solid-fuel rocket, with inertial guidance
Length:	34 feet (10.2 meters)
Weight:	73,000 pounds (32,850 kg.)
Diameter:	74 inches (1.8 meters)
Range:	4,000 nautical miles (4,600 statute miles, 7,360 km)
Guidance System:	Inertial
Warhead:	Thermonuclear MIRV (Multiple Independtly Targeted re-entry Vehicle) and (Maneuverable Re-entry Vehicle)
Date Deployed:	1979

GENERAL CHARACTERISTICS, TRIDENT II

Primary Function:	Strategic Nuclear Deterrence
Contractor:	Lockheed Missiles and Space Co., Inc., Sunnyvale, CA
Unit Cost:	$29.1 million
Propulsion:	Three-stage solid-propellant rocket
Length:	44 feet (13.41 m.)
Diameter:	83 inches (2.11 m.)
Weight:	130,000 pounds (58,500 kg.)
Diameter:	74 inches (1.85 meters)
Range:	Greater than 4,000 nautical miles (4,600 statute miles)
Guidance System:	Intertial
Warhead:	Thermonuclear MIRV (Multiple Independently Targetable re-entry Vehicle); Maneuverable Re-entry Vehicle)
Date Deployed:	1990

GENERAL CHARACTERISTICS, POSEIDON

Primary Function:	Strategic Nuclear Deterrence
Contractor:	Lockheed Missiles and Space Co., Inc., Sunnyvale, CA
Propulsion:	Two-stage, solid-fuel rocket with inertial guidance
Length:	34 feet (10.2 meters)
Weight:	65,000 pounds (29,250 kg.)
Diameter:	74 inches (1.8 meters)
Range:	2,500 nautical miles (2,875 statute miles)
Guidance System:	Inertial
Warhead:	Thermonuclear MIRV (Multiple Independently Targeted Re-entry Vehicle)
Date Deployed:	1971

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AGM-88 HARM MISSILE

SERVICES: Air Force and Navy

DESCRIPTION:
The AGM-88 High-Speed Anti-radiation Missile (HARM) is an air-to-surface tactical missile designed to seek out and destroy enemy radar-equipped air defense systems.

FEATURES:
The AGM-88 can detect, attack, and destroy a target with minimum aircrew input. The proportional guidance system that homes in on enemy radar emissions has a fixed antenna and seeker head in the missile's nose. A smokeless, solid-propellant, dual-thrust rocket motor propels the missile.

The Air Force has equipped the F-4G Wild Weasel with the AGM-88 to increase the F-4G's lethality in electronic combat. The missile works in conjunction with the radar attack and warning system on the F-4G Wild Weasel. The AGM-88 can also be employed on the F-16C.

BACKGROUND:
The HARM missile was approved for full production in March 1983. It is operationally deployed throughout the Air Force and in full production as a joint U.S. Air Force and U.S. Navy project.

The missile proved effective against Libyan targets in the Gulf of Sidra in 1986, and was used extensively by both services in Operation Desert Storm in 1991.

POINT OF CONTACT:
Air Force: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007; **Navy:** Public Affairs Office, Naval Air Systems Command (AIR-07D2), Washington, DC 20361-0701; (703) 746-3791

(more)

GENERAL CHARACTERISTICS

Primary function:	Air-to-surface anti-radiation missile; attack and destroy hostile radar installations
Contractor:	Texas Instruments
Power plant:	Thiokol dual-thrust, solid propellent, rocket motor
Length:	13 feet, 8 inches (4.1 meters)
Launch weight	800 pounds (360 kg)
Diameter:	10 inches (25.4 cm)
Wingspan:	3 feet, 8 inches (1.1 meters)
Range:	80+ nautical miles (57+ miles/91 km)
Speed:	760+ mph (1,216 kmph)
Aircraft:	Air Force, F-4G and F-16C; Navy, F-18, A-6E, A-18 and EA-6B
Guidance system:	Proportional/radar homing
Warheads:	Blast fragmentation; warhead weight 146 pounds (65 kg)
Unit cost:	$284,000
Date deployed:	1985

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AGM-84D HARPOON

SERVICES: Navy, Air Force, and Coast Guard

DESCRIPTION:
The AGM-84D Harpoon is an all-weather, over-the-horizon, anti-ship missile system.

FEATURES:
The Harpoon's active radar guidance, warhead design, and low-level, sea-skimming cruise trajectory assure high survivability and effectiveness.

The missile is capable of being launched from surface ships, submarines, or (without the booster) from aircraft. The AGM-84D has been adapted for use on B-52G bombers, which can carry from eight to 12 of the missiles.

INVENTORY: Classified

BACKGROUND:
Originally developed for the Navy to serve as its basic anti-ship missile for fleetwide use, the AGM-84D also has been adapted for use on the Air Force's B-52G bombers. The AGM-84D was first introduced on ships and submarines in 1977, and on Navy P-3 aircraft in 1979.

The 42nd Bombardment Wing, Loring Air Force Base, Maine, was first Air Force unit tasked to perform the AGM-84D mission in 1985. The wing refined tactics and doctrine to merge the long-range, heavy-payload capability of the B-52 with the proven reliability of this superior stand-off attack weapon. This combines to provide the war-fighting capability to interdict ships at ranges well beyond those of other aircraft.

POINTS OF CONTACT:
Navy: Public Affairs Office, Naval Sea Systems Command (00D), Washington, DC 20362, (202) 692-6920; **Air Force:** Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191, (804) 764-5007; **Coast Guard:** U.S. Coast Guard, Commandant G-CP, Public Affairs, (202) 267-1933

GENERAL CHARACTERISTICS

Primary function:	Air, surface, or submarine launched anti-surface (anti-ship) cruise missile
Contractor:	McDonnell Douglas
Power plant:	Teledyne Turbojet and solid propellant booster for surface and submarine launch
Thrust:	660 pounds (approx. 594 kilograms)

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HARPOON MISSILE

Length:	12 feet, 7 inches (3.79 meters) - air launched; 15 feet (4.55 meters) - surface and submarine launched
Weight:	1,145 pounds (515.25 kilograms) - air launched; 1,470 pounds (661.5 kilograms) - launched from railed launcher on ship); 1,530 pounds (688.5 kilograms) - submarine or ship launched from box or cannister launcher
Diameter:	13.5 inches (34.29 centimeters)
Wing span:	3 feet (91.44 centimeters) with booster fins and wings
Range:	Over-the-horizon, in excess of 60 nautical miles
Speed:	High subsonic
Guidance system:	Sea-skimming cruise monitored by radar altimeter, active radar terminal homing
Warheads:	Penetration high-explosive blast (488 pounds/224 kilograms)
Unit Cost:	$720,000
Date deployed:	1985

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

HAWK MISSILE SYSTEM

SERVICES: Army, Marine Corps

FEATURES:
The Hawk is a surface-to-air guided missile system designed for air defense protection. It is transportable by vehicles, fixed wing aircraft and helicopters. The Hawk is employed as a platoon consisting of an acquisition radar, a tracking radar, an identification-friend-or-foe system, and up to six launchers with three missiles each. The missile is highly reliable, accurate and lethal.

BACKGROUND:
The Hawk Missile System was first fielded in 1960 and has been continually upgraded. Postwar reports stated that the Hawk downed several enemy aircraft during the Persian Gulf War.

POINTS OF CONTACT:
ARMY: Army Public Affairs, (703)697-7589
MARINE CORPS: Headquarters, U.S. Marine Corps, Division of Public Affairs, (703) 614-1492

GENERAL CHARACTERISTICS

Primary function:	Surface-to-air missile defense
Contractor:	Raytheon Corp.
Power plant:	Solid propellant rocket motor
Propulsion:	Solid propellant rocket
Length:	12.5 feet (3.81 meters)
Diameter:	13.5 inches (4.11 meters)
Weight fully armed:	1,400 pounds (635.6 kg)
Range:	24.9 miles (40 km)
	Speed:SupersonicGuidance system:Radar directed semi-active homing
	Warhead:One 300 pound (136.2 kg) high explosive missile
Type of fire:	Operator directed/automatic modes
Magazine capacity:	48 missiles/battery
Missile guidance:	Semi-active homing
Target detecting:	Continuous wave radar and pulse acquisition radars
	Target tracking:High power illuminating continuous wave radar, passive optical radar
Rate of fire:	1 missile every 3 seconds
Sensors:	High power continuous wave radar (HIPIR)
	Continuous wave acquisition radar (CWAR)
	Pulse Acquisition Radar (PAR) and passive optical scan

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

HELLFIRE GUIDED MISSILES, 114A, 114C, 114F AND 114K

SERVICE: Army

DESCRIPTION:
Air-to-ground attack missile

FEATURES:
The Hellfire Modular Missile System is a multi-mission anti-armor and precision attack missile that is effective against tanks, bunkers, structures, and helicopters. The Hellfire is employed on the U.S. Army's AH-64 Apache helicopter as the primary point-target weapon and is planned to be employed on the OH-58D Kiowa Warrior helicopter.

The missile's simple control connections make it compatible with a variety of launch platforms including helicopters, fixed-wing aircraft, trucks and ships. The missile homes on a laser spot that can be projected on the target by ground observers, other aircraft or the launching aircraft's own designator.

BACKGROUND:
The Army received the HELLFIRE in 1987.

As of July 1992, there are 30,309 HELLFIRE missiles in the inventory. The procurement objective is 39,418. The unit cost of the HELLFIRE is $47,904.

POINT OF CONTACT: Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Air-to-ground missile
Contractor:	Rockwell International Corp. and Martin Marietta Corp.
Propulsion:	2.5 second-burn single stage rocket
Length:	A, C and K models, 64 inches (1.6 meters); F model, 71 inches (1.7 meters)
Diameter:	7 inches (17.8 cm)
Weight:	114A & 114C, 99.8 pounds (44.91 kg); 114F, 107 pounds (48.25 kg); 114K, 100 pounds (45 kg)
Range:	Greater than 4.5 km (2.8 miles)
Guidance:	Laser seeker
Warhead:	Shaped charge

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

HYDRA 70 ROCKET AMMUNITION

SERVICE: Army

DESCRIPTION:
A 2.75-inch rocket with a variety of warheads.

FEATURES:
Hydra 70 Rocket ammunition is fired from the Apache and Cobra helicopters against light armored vehicles, enemy helicopters and personnel. Hydra 70 also provides anti-helicopter capabilities. The ammunition consists of a rocket motor and a warhead.

Warheads include high explosive, illumination, white phosphorous smoke, red phosphorous, and multipurpose submunition and a flechette-filled warhead (a flechette is a needle-like projectile with fins, used against personnel).

BACKGROUND:
The Hydra 70 replaced the Vietnam-era 2.75 inch rocket. The Army has 189,000 high-explosive rockets and 41,000 multipurpose submunition rockets in its inventory.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Rocket ammunition used on attack helicopters
Contractor:	BEI Defense Corp., Holston Army Ammunition Plant, Louisiana Army Ammunition Plant, Radford Army Ammunition Plant, Thiokol Corp., and Naval Ordnance Station, Indianhead, Md.
Cost:	High explosive rockets: $365 each Multipurpose submunition: $1,424 each
Weight:	22.3 pounds (10 kg)
Length:	54.6 inches (1.4 meters)
Diameter:	2.75 inches (6.9 cm)
Range:	High explosive: 10,400 meters (6.5 miles) Multipurpose submunition: 8,080 meters (5.05 miles)
Power:	Rocket motor
Velocity:	High explosive: 2,425 feet (1,516.6 meters) per second Multipurpose Submunition: 5,000 feet (1,500 meters) per second
Lethality:	Effective against personnel, emplacements and light armor
Rate of fire:	Single and multiple firing, 19 rockets per pod

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

JOINT DIRECT ATTACK MUNITIONS (JDAM)

(Formerly the advanced bomb family)

SERVICE: Navy

Photo unavailable at press time

DESCRIPTION:
Provide two affordable All-Up Round (AUR) weapons to meet the general purpose bombing requirements for increased blast, fragmentation, and penetration effects against a broad target spectrum.

BACKGROUND:
JDAM is a joint Navy-Air Force program with the Air Force as the lead service. Phase I of JDAM will provide a kit to upgrade MK-84 and BLU-109 munitions with better delivery accuracy in adverse weather. Phase 2 will provide an affordable 500 pound (225 kg.) round with increased blast and fragmentation capability against a broad spectrum of targets. Phase three will develop a seeker for precise terminal guidance in adverse weather. JDAM will meet the requirements for insensitive munitions of all services.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS

Aircraft Interface:	Single MIL-STD-1760 connection
Guidance System:	Phase 1: All-weather Global Positioning System Aided Inertial Guidance System Phase 2: Fin assembly, stabilizer/retarder (high/low drag options)
Warhead	Phase 1: 2,000 pound (900 kg.) MK-84 and BLU-109 Phase 2: 500 pound (225 kg.) blast/fragmentation
Fusing:	New fuse with multiple arming and delay times

JOINT STANDOFF WEAPON (JSOW)

(Formerly the Advanced Interdiction Weapon System [AIMS])

SERVICE: Navy, Marine Corps, Air Force

DESCRIPTION:
A low cost, air launched weapon system for tactical aircraft to attack targets day or night and marginal weather conditions while remaining outside the range of enemy target defenses.

BACKGROUND:
A joint Navy/Marine Corps/Air Force program. When deployed, JSOW will provide a single-point weapon system capable of attacking both point and area targets. It replaces disparate weapon systems with limited capabilities. The Navy and Marine Corps will deploy JSOW on the F/A-18, AV-8B, A-6 and the AX aircraft. The Air Force will also deploy JSOW.

Photo unavailable at press time

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS

Length:	168 inches (50.4 meters)
Width:	24 inches (7.2 meters)
Height:	21 inches (6.3 meters)
Weight:	1,065 pounds (479.25 kg)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

LGM-118A PEACEKEEPER

SERVICE: Air Force

DESCRIPTION:
The Peacekeeper missile is America's primary intercontinental ballistic missile that forms the core of the ICBM modernization program.

FEATURES:
The Peacekeeper is capable of delivering 10 independently targeted warheads with greater accuracy than any other ballistic missile.

The Peacekeeper is a four-rocket stage ICBM system consisting of the boost system, the post-boost vehicle system and the re-entry system.

The boost system consists of three rocket stages that launch the missile into space. These rocket stages are mounted atop one another and fire successively.

Following burnout and separation of the boost system's third rocket stage, the post-boost vehicle system in space maneuvers the missile as its re-entry vehicles are deployed in sequence.

The post-boost vehicle system is made up of a fourth rocket stage and a guidance and control system. The vehicle rides atop the boost system, weighs about 3,000 pounds (1,363 kilograms) and is 4 feet (1.21 meters) long.

The top section of the Peacekeeper is the re-entry system. It consists of the deployment module, up to 10 cone-shaped re-entry vehicles and a protective shroud to protect the re-entry vehicles during ascent. The deployment module provides structural support for the re-entry vehicles and carries the electronics needed to activate and deploy them. Each deployed re-entry vehicle follows a ballistic path to its target.

(more)

BACKGROUND:
The Air Force successfully conducted the first test flight of the Peacekeeper June 17, 1983, from Vandenberg Air Force Base, Calif. The missile traveled 4,190 miles (6,704 kilometers) before dropping six unarmed test re-entry vehicles on planned target sites in the Kwajalein Missile Test Range in the Pacific Ocean.

The first two test phases consisted of 12 test flights to ensure the Peacekeeper's subsystems performed as planned, and to make final assessments of its range and payload capability.

The missile was fired from above-ground canisters in its first eight tests. Thereafter, test flights were conducted from Minuteman test silos reconfigured to simulate operational Peacekeeper sites.

The Air Force achieved initial operational capability of 10 deployed Peacekeepers at F.E. Warren Air Force Base, Wyo. in December 1986. Full operational capability was achieved in December 1988 with the establishment of a squadron of 50 missiles.

Air Force Systems Command's Ballistic Missile Organization (BMO) at Norton AFB, Calif., began full-scale development of the Peacekeeper in 1979.

POINT OF CONTACT: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007.

GENERAL CHARACTERISTICS

Primary function:	Intercontinental ballistic missile (ICBM)
Contractor:	Basing, Boeing Aerospace and Electronics; assembly and test, Martin Marietta and Denver Aerospace
Unit Cost:	$70 million
Power plant:	First three stages, solid-propellant; fourth stage, storable liquid (by Thiokol, Aerojet, Hercules, and Rocketdyne)
Length:	71 feet (21.8 meters)
Weight:	195,000 pounds (87,750 kg) including re-entry vehicles
Diameter:	7 feet, 8 inches (2.3 meters)
Range:	Greater than 6,000 miles (5,217 nautical miles, 9,600 km)
Speed:	More than 15,000 miles per hour at burnout (Mach 20 at sea level/24,000 kilometers per hour)
Guidance system:	inertial
Warheads:	10 Avco MK 21 re-entry vehicles
Date deployed:	December 1986

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

LGM-30 MINUTEMAN

SERVICE: Air Force

DESCRIPTION:
The LGM-30 Minuteman intercontinental ballistic missile is an element of the nation's strategic deterrent forces.

FEATURES:
The Minuteman missiles are dispersed in hardened silos to protect against attack and connected to an underground launch control center through a system of hardened cables. Launch crews consisting of two officers perform around-the-clock alert in the launch control center. A variety of communication systems provide the National Command Authorities (NCA) with highly reliable, virtually instantaneous direct contact with each launch crew.

Should communication be lost between the launch control center and the remote missile launch facilities, airborne missile combat crews aboard specially configured airborne launch control aircraft automatically assume command and control to execute the National Command Authorities' orders.

BACKGROUND:
The Minuteman weapons systems have been on alert since October 1962. The Minuteman I became operational with Strategic Air Command in October 1962. Replacement of Minuteman I with Minuteman II started in 1965.

The current Minuteman force consists of 500 Minuteman IIIs located at F.E. Warren AFB, Wyo.; Minot AFB, N.D.; and Grand Forks AFB, N.D.:P 450 Minuteman IIs are undergoing deactivation at Whiteman AFB, Mo.; Ellsworth AFB, S.D.; and Malmstrom AFB, Mont.

The basic Minuteman unit, the squadron, consists of five launch control facilities and 50 missile launch facilities.

As a result of presidential initiatives to cancel development programs for new ICBMs and to retire the Peacekeeper ICBM, Minuteman will become the nation's only land-based ICBM. DoD plans a life extension program to keep Minuteman missiles viable beyond the turn of the century.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

(more)

GENERAL CHARACTERISTICS (Minuteman III)

Primary function:	Intercontinental ballistic missile
Contractor:	Boeing Co.
Power plant:	Three solid-propellant rocket motors; first stage, Thiokol; second stage, Aerojet-General; third stage, Aerojet-General/Thiokol
Unit cost:	$7 million
Thrust:	First stage, 202,600 pounds (91,170 kg)
Length:	60 feet (18.18 meters)
Weight:	78,000 pounds (31,500 kg)
Diameter:	5.5 feet (1.67 meters)
Range:	6,000-plus miles (5,218 nautical miles, 9,600 km)
Speed:	15,000 miles per hour (24,000 km per hour) at burnout
Ceiling:	700 miles (1,120 km)
Load:	Re-entry vehicle, General Electric Mk 12 or 12A
Guidance system:	Inertial system, Autonetics Division of Rockwell International; ground electronic/security system, Sylvania Electronics Systems and Boeing Co.
Warheads:	Three (will be downloaded to one in accordance with the Washington Summit Agreement of June 1992)
Date deployed:	June 1970
Production ended:	December 1978

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

MAVERICK GUIDED MISSILE

SERVICES: Air Force, Marine Corps, Navy

DESCRIPTION:
An air-to-surface laser-guided missile

FEATURES:
The AGM-65 Maverick is a tactical, air-to-surface guided missile designed for close air support, interdiction, and defense suppression. It is effective against a wide range of tactical targets, including armor, air defenses, ships, ground transportation and fuel storage facilities.

The AGM-65E (infrared targeting) version of the Maverick is being adopted for use from Marine Corps aircraft. The Navy uses the F model, with a larger improved warhead, and infrared guidance system optimized for ship tracking.

The AGM-65 has two types of warheads, one with a contact fuse in the nose, the other, a heavyweight warhead with a delayed fuse, which penetrates the target with its kinetic energy before firing. The latter is very effective against large, hard targets. The propulsion system for both types is a solid-rocket motor behind the warhead.

Since as many as six Mavericks can be carried by an aircraft, usually in three-round underwing clusters, the pilot can engage several targets on one mission. The missile also has "launch-and-leave" capability that enables a pilot to fire it and take immediate evasive action or attack another target as the missile guides itself to the first target.

The AGM-65 can be launched from high altitudes or tree-top level and can hit targets from a few thousand feet to many miles.

An electro-optical television guidance system projects the target scene on a cockpit television screen. The pilot selects the target, locks on and fires the missile.

Later models feature a heat-tracking guidance system that also projects the target scene on a cockpit video screen, allowing it to operate at night or in bad weather.

BACKGROUND:
The Air Force accepted the first AGM-65A in August 1972 and has purchased a total of 25,750 A and B models.

The Air Force took delivery of the first D models in October 1983, and G models in 1989.

AGM-65 missiles were employed by F-16s and A-10s in 1991 to attack armored targets in the Persian Gulf area during Operation Desert Storm. Mavericks played a large part in the destruction of Iraq's significant military force.

POINTS OF CONTACT:
Air Force: Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007; Marine Corps: Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492; Navy: Public Affairs Office (AIR-07D), Naval Air Systems, Washington, DC 20361-0701; (703) 746-3785

(more)

GENERAL CHARACTERISTICS

Primary function:	Air-to-surface guided missile
Contractors:	Hughes Aircraft Co; Raytheon Co.
Power plant:	Thiokol TX-481 two-stage solid-propellant rocket motor
Launch weight:	From 462 pounds (207.90 kg) to 670 pounds (301.50 kg) depending upon model and warhead weight
Diameter:	One foot (30.48 centimeters)
Wingspan:	2 feet, 4 inches (71.12 centimeters)
Range:	85,000 ft max
Speed:	Classified
Air Force aircraft:	A-7, A-10, F-4, F-15E, F-16 and F-111
Navy/USMC aircraft:	F-18, A-4, A-6, A-18 and AV-8B
Guidance system:	Electro-optical television in A and B models; infrared imaging, D and G models; d; AGM-65E - laser-guided in E models; ; Infrared-homing in F models
Warheads:	Contact fuse, 300 pounds (135 kg); delayed-fuse penetrator,heavyweight, 300 pounds (135 kg)
Unit cost:	$22,387
First deployed:	August 1972

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

MULTIPLE LAUNCH ROCKET SYSTEM (MLRS)

SERVICE: Army

DESCRIPTION: Artillery rocket system mounted on a tracked vehicle.

FEATURES:
The Multiple Launch Rocket System (MLRS) is a free-flight artillery rocket system that delivers large volumes of firepower in a short time. The system is used to attack enemy artillery, materiel and personnel targets and suppress enemy air defenses. It consists of a launcher, two disposable pods, each containing six rockets or one missile, a fire control system, and an aiming device. The carrier is a derivative of the Bradley Fighting Vehicle.

BACKGROUND:
The Army received the MLRS in 1983. There are currently 528 launchers and 373,668 rockets in the Army inventory. At the completion of the planned buy, the Army will have 1,623 launchers and 481,110 rockets. The basic warhead carries dual-purpose improved conventional submunitions (bomblets).

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Artillery rocket system
Contractor:	LTV Aerospace and Defense, Dallas, Texas
Unit cost:	$5.407 million
Weight:	54,463 pounds (24,508 kilograms)
Length:	22.8 feet (6.9 meters)
Height:	8.6 feet (2.6 meters)
Width:	9.9 feet (3 meters)
Range:	483 kilometers (302 miles)
Crew:	Three
Power train:	Turbodiesel Engine
Road speed:	Cruise, 25 miles (40 km); maximum, 35 miles (56 km)/hr
Rocket Propulsion:	Solid Rocket Motor
Rocket length:	13.1 feet (3.9 meters)
Diameter:	Nine inches (22.86 centimeters)
Weight:	677 pounds (304.65 kilograms)
Range:	20 miles (32 km)
Guidance:	None
Speed:	1,950 miles (3,120 kilometers) per hour at rocket motor burnout (approx. 2.5 seconds after launch)
Warhead:	Armor-piercing/fragmentation bomblet, 688 per rocket

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

PATRIOT MISSILE

SERVICE: Army

DESCRIPTION:
An air defense guided missile system that gained fame in the Persian Gulf War as the "Scud killer."

FEATURES:
The Patriot is an air defense guided missile system designed to cope with an air threat which includes saturation, maneuver and electronic countermeasures by both aircraft and tactical ballistic missiles. The system uses a single multifunction phased array radar, Command and Track-Via-Missile guidance, and automated operations with capability for human override. A Patriot battery includes the engagement control station, radar, electric power plant, eight launchers and 64 missiles.

BACKGROUND:
The Army received the Patriot Air Defense System in 1985. The Army presently has 78 launchers in its inventory.

POINTS OF CONTACT: Army Public Affairs, (703) 697-7589

(more)

GENERAL CHARACTERISTICS

Primary function: Air defense
Contractor: Raytheon Corp. Missile Systems Div., Boston
Unit cost: $102 million per battery

	Engagement Control Station	Radar Set	Launcher Station	Electric Power Plant	Information Coordination Central
Weight	37,398 lbs.	79,008 lbs	79,380 lbs.	30,745 lbs.	36,389 lbs.
Length	31.67 ft.	56.08 ft.	56.08 ft.	32.78 ft.	31.67 ft.
Height	11.58 ft.	11.83 ft.	13.10 ft.	8.62 ft.	11.58 ft.
Width	8.58 ft.	9.42 ft.	9.42	8.89 ft.	8.17 ft.
Range	N/A	N/A	N/A	N/A	N/A
Crew	three	Unmanned after emplacement	Unmanned after setup	Unmanned after setup	three
Power Train	two 150 kW 400 Hz generators	two 150kW 400 Hz Generators	Onboard 15 W 400 Hz generator	N/A	Electric power unit 60 W. 400 Hz generator
Road Speed	N/A	N/A	N/A	N/A	N/A

MISSILE CHARACTERISTICS

Propulsion: Solid propellant
Length: 20 feet (6.06 meters)
Diameter: 1.33 feet (39.9 cm)
Weight: 2,003 pounds (901.35 kg)
Guidance: Command guidance and track-via-missile
Speed: Supersonic
Warhead: Proximity fuzed high explosive in a high-fragmentation casing

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

PHOENIX MISSILE (AIM-54)

SERVICE: Navy

DESCRIPTION:
Long-range air-to-air missile, carried in clusters of up to six missiles on the F-14.

BACKGROUND:
The Phoenix missile is the Navy's only long-range air-to-air missile. It is an airborne weapons control system with multiple-target handling capabilities, used to kill mutiple air targets with conventional warheads. Near simultaneous launch is possible against up to six targets in all weather and heavy jamming environments.

The improved Phoenix, the AIM-54C, can better counter projected threats from tactical aircraft and cruise missiles.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

GENERAL CHARACTERISTICS

Primary Function:	Long-range air-launched air intercept missile
Contractor:	Hughes Aircraft Co. and Raytheon Co.
Unit cost:	$477,131 Unit cost: $477,131
Power Plant:	Solid propellant rocket motor built by Hercules
Length:	13 feet (3.9 meters)
Weight:	1,024 pounds (460.8 kg)
Diameter:	15 inches (38.1 cm)
Wing Span:	3 feet (.9 meters)
Range:	In excess of 100 nautical miles (115 statute miles, 184 km.)
Speed:	In excess of 3,000 miles (4,800 km) per hour
Guidance System:	Semi-active and active radar homing
Warheads:	Proximity fuse, high explosive
Weight:	135 pounds (60.75 kg)
Date Deployed:	1974

AGM-45 SHRIKE MISSILE

SERVICE: Marine Corps

DESCRIPTION: Anti-radar missile

FEATURES:
The Shrike was developed by the Naval Weapons Center at China Lake, Cal. in 1963. It is an anti-radiation missile designed to home in on hostile anti-aircraft radars. It is currently used by U.S. and Israeli aircraft.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Anti-radiation missile that homes in on anti-aircraft radars
Unit cost:	$32,000
Propulsion:	Solid-fuel rocket
Length:	10 feet (3.05 meters)
Weight:	390 pounds (177.06 kg)
Diameter:	8 inches (20.32 cm)
Warhead:	Conventional
Span:	3 feet (.914 meters)
Guidance:	Passive radar homing
Platforms:	A-4 Skyhawk, A-6 Intruder

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

STANDARD MISSILE

SERVICE: Navy

DESCRIPTION:
Surface-to-air and surface-to-surface missile, mounted on surface ships.

BACKGROUND:
The Standard Missile is produced in two major types, the SM-1 MR/SM-2 (medium range) and the SM-2 (extended range). It is one of the most reliable in the Navy's inventory. Used against missiles, aircraft and ships, it first came into the fleet more than a decade ago. It replaces Terrier and Tartar missiles and is part of the weapons suit of more than 100 Navy ships.

The SM-2 (MR) is a medium range defense weapon for Ticonderoga class AEGIS cruisers, Arleigh Burke class AEGIS destroyers, California and Virginia class nuclear cruisers and Kidd class destroyers with NTU conversions. The nuclear-powered cruisers USS Bainbridge, USS Truxton, and USS Long Beach also use the SM-2 MR. Oliver Hazard Perry class frigates use the SM-1 MR.

The SM-2 (ER) is an extended-range

area defense weapon for Leahy and Belknap class Terrier cruisers with NTU (new threat upgrade) conversions. The added length of the booster section requires the Mk 10 missile launcher to fire this weapon.

The increased range and upgrades to the SM-2 MR give significant firepower to ships which cannot handle the SM-2 ER.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (00D); Washington, DC 20362; (202) 692-6920

(more)

GENERAL CHARACTERISTICS, SM-1, SM-2 MEDIUM RANGE

Primary function:	Surface to air missile
Contractor:	Hughes Missile Systems Company (formerly General Dynamics' Pomona Division, sold to Hughes in 1992) Pomona Division; Raytheon Motorola; Morton-Thiokol; Aerojet General and others
Unit cost:	SM-1 MR $402,500, SM-2 MR $421,400
Power plant:	Dual thrust, solid fuel rocket
Length:	14 feet, 7 inches (4.41 meters)
Weight:	SM-1, 1,100 pounds (495 kg.); SM-2, 1,380 pounds (621 kg.)
Diameter:	13.5 inches (34.3 centimeters)
Wing span:	3 feet, 6 inches (1.08 meter)
Range:	15-20 nautical miles (17-23 statute miles)(SM-1 MR) 40-90 nautical miles (46-104 statute miles)(SM-2 MR)
Guidance system:	Semi-active radar homing
Warhead:	Proximity fuse, high explosive
Date deployed:	1970 (SM-1 MR) 1981 (SM-2 MR)

GENERAL CHARACTERISTICS. SM-1, SM-2, EXTENDED RANGE

Primary function:	Surface to air missile
Contractor:	Hughes Missile Systems Company (formerly General Dynamics' Pomona Division); Raytheon Motorola; Morton-Thiokol; Atlantic Research and others
Unit cost:	$409,000
Power plant:	Two-stage, solid-fuel rocket; sustainer motor and booster motor
Length:	26.2 feet (7.9 meters)
Weight:	2,980 pounds (1341 kg)
Diameter:	13.5 inches (4 meters)
Wing span:	5 feet 2 inches (1.6 meters)
Range:	65-100 nautical miles (75-115 statute miles)
Guidance system:	Inertial/semi-active radar homing
Warhead:	Proximity fuse, high explosive
Date deployed:	1981

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

STINGER MISSILE

SERVICES: Army, Marine Corps

DESCRIPTION:
Shoulder-fired antiaircraft missile

FEATURES:
The Stinger is a shoulder-fired, "fire and forget" surface-to-air guided missile that enables the soldier or Marine to find, track and intercept low-altitude jets, propeller-driven fixed-wing aircraft or helicopters. This passive infrared missile system homes in on the heat emitted by those aircraft. Stinger features an ability to find and track its target rapidly, and to destroy aircraft attacking from any direction. A dual detector seeker allows the missile to override certain infrared countermeasures to evade detection. The missile is packaged within its disposable launch tube. It is delivered from the manufacturer ready to operate and requires no field testing or direct support maintenance.

BACKGROUND:
The Stinger was developed by the U.S. Army Missile Command, which first fielded the basic version in 1982 as the successor to the Redeye Weapon System. This high-explosive missile has adjustable fuzing, allowing it to explode on impact, penetrate the target before exploding, or self-destruct.

The Stinger missile has been adapted for use on the Avenger System by the Army and the Marine Corps (See Avenger fact sheet) and the Army's Air-to-Air Helicopter System. Efforts are underway to mount Stingers on the Army's Bradley Fighting Vehicle and the Marine Corps' Light Armored Vehicle, Air Defense Variant (LAV-AD).

POINTS OF CONTACT:
Army: Army Public Affairs, (703)697-7598;
Marine Corps: Headquarters, U.S. Marine Corps, Division of Public Affairs, (703) 614-1492

(more)

GENERAL CHARACTERISTICS

Primary function:	Low altitude air defense missile system for defense of forward combat areas, vital areas and installations.
Contractors:	General Dynamics Valley Systems Division, Rancho Cucamonga, Calif.; Raytheon Company, Missile Systems Division, Lowell, Mass.
Propulsion:	Solid propellant
Length:	5 feet (1.5 meters)
Weight:	34.5 pounds (15.66 kg)
Range:	More than three kilometers
Speed:	Supersonic
Guidance:	Fire-and-forget passive infrared and ultraviolet homing
Crew:	Two
Unit cost:	$52,000
Inventory:	The Army has 19,241 Stingers (of all three versions) on hand and expects to have 33,368 at the end of the present procurement cycle

ARMY TACTICAL MISSILE SYSTEM (TACMS)

SERVICE: Army

DESCRIPTION:
Long-range ground-launched missile system

FEATURES:
The Army TACMS missile system consists of a surface-to-surface guided missile with an anti-personnel/anti-materiel warhead. TACMS missiles are fired from a modified Multiple Launch Rocket System (MLRS) launcher.

BACKGROUND:
TACMS is a corps commander's primary deep attack weapon system, capable of performing day or night, near-all-weather, precision attacks at long ranges. The Army TACMS was fielded in 1990. The Army had 446 missiles on hand as of August 1992. The Army TACMS inventory at the completion of FY 94 will be 1,586. The unit cost of the ATACMS is $554,000.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

(more)

GENERAL CHARACTERISTICS:

Primary function: Ground-to-ground artillery missile
Contractor: LTV Aerospace and Defense Company, Dallas
Unit cost: $554,000

SYSTEM INFORMATION (MODIFIED M270 MLRS LAUNCHER)

Weight: 44,508 pounds (20,028 kg) empty; 53,948 pounds (24,276.5 kg) loaded
Length: 274.5 inches (6.9 meters)
Height: 103 inches (2.6 meters) stowed; 233 inches (5.9 meters) in firing position
Width: 108.8 inches (2.75 meters)
Range: 186 miles (300 km)
Crew: Three
Power train: 500 HP Turbo Diesel
Road speed: 40 miles (64 km) per hour

MISSILE / ROCKET CHARACTERISTICS

Propulsion: Solid hydroxyl terminated polybutadiene (HTPB) propellant
Length: 156.5 inches (465 cm)
Diameter: 23.9 inches (717 cm)
Weight: 3,661 lbs (1,647 kg)
Guidance: Inertial
Speed: Supersonic
Warhead: 950 bomblets

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

TITAN IV

SERVICE: Air Force

DESCRIPTION:
The Titan IV is a heavy-lift space launch vehicle used to carry satellites into space.

FEATURES:
The Titan IV is the newest and largest unmanned space booster used by the Air Force. The Titan IV provides assured capability for launch of space shuttle-class payloads. The vehicle can be launched with one of two optional upper stages for greater and varied carrying ability.

Titan IV's first stage is a liquid propellant rocket that features structurally independent tanks for its fuel (Aerozine 50) and oxidizer (Nitrogen Tetroxide). This minimizes the hazard of the two mixing if a leak should develop in either tank.

INVENTORY:
There are 14 in the active duty force.

BACKGROUND:
The Titan family was established in October 1955 when the Air Force awarded a contract for Titan I, the nations's first two-stage intercontinental ballistic missile. Titan IV came aboard in 1989 to launch the space shuttle and other military payloads.

POINT OF CONTACT:
Air Force Space Command, Public Affairs Offices, 150 Vandenberg St., Suite 1150, Colorado Springs, CO., 80914-4500; (719) 554-3731

(more)

GENERAL CHARACTERISTICS

Primary Function:	Launch vehicle used to lift heavy satellites into space
Builder:	Martin Marietta Astronautics Group, Marietta, Ga.
Power Plant:	Stage 0 currently consists of two solid-rocket motors; stage 1 uses an LR87 liquid propellant rocket engine; Stage 2 uses the LR91 liquid propellant engine; optional upper stages include the General Dynamics Centaur and Boeing Aerospace inertial upper stages. A solid rocket motor upgrade manufactured by Hercules will be available by fiscal year 1994.
Cost:	Approximately $177 million; $230 million with Centaur upper stage
Launch Sites:	Cape Canaveral Air Force Station, Fla. and Vandenberg Air Force Base, Calif.
Guidance System:	Delco inertial guidance system; a ring laser gyro guidance system manufactured by Honeywell will be incorporated into the Titan IV by fiscal year 1995
Thrust:	Solid rocket motors provide 1.5 million pounds (675,000 kg) per motor at liftoff. First stage provides an average of 548,000 pounds (246,600 kg) and second stage provides an average of 105,000 pounds (47,250 kg). Optional Centaur upper stage provides 33,100 pounds (14,895 kg) and inertial upper stage provides up to 41,500 pounds (18,675 kg).
Length:	Up to 204 feet (61.2 meters)
Lift Capability:	Titan IV can currently carry up to 39,000 pounds (17,550 kg) into a 90-mile (144 km) high orbit; up to 10,000 pounds (4,500 km) into geosynchronous orbit (22,000 miles, 35,200 km, in space) when launched from Cape Canaveral; and up to 31,000 pounds (13,950 kg) into a 100-mile (160 km) high polar orbit when launched from Vandenberg. Using an inertial upper stage, the Titan IV can transport up to 5,250 pounds (2,362.5 kg) into geosynchronous orbit. The solid rocket motor upgrade, due in fiscal year 1994, will add 25 percent carrying capability.
Maximum Takeoff Weight:	Approximately 1,900 pounds (2,855 kg)
Date deployed:	June 1989

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

TOMAHAWK CRUISE MISSILE

SERVICE: Navy

DESCRIPTION:
Long range, subsonic cruise missile, conventionally armed for anti-surface warfare, and conventionally and nuclear armed for land attack versions.

BACKGROUND:
Tomahawk is an all-weather submarine or ship-launched anti-ship or land-attack cruise missile. After launch, a solid propellant propels the missile until a small turbofan engine takes over for the cruise portion of flight.

Tomahawk is a highly survivable weapon. Radar detection is difficult because of the missile's small cross-section, low altitude flight. Similarly, infrared detection is difficult because the turbofan engine emits little heat. The anti-ship variant of Tomahawk uses a combined active radar seeker and passive system to seek out, engage and destroy a hostile ship at long range.

Upgrades include: a Global Positioning System (GPS) receiver; an upgrade of the Digital Scene Matching Area Correlation (DSMAC) system; and increases in range, Time of Arrival (TOA) control, and improved 402 turbo engines.

The Block III variant will provide a significant increase in range and greater accuracy to the Tomahawk cruise missile family. The Block III variant is scheduled for FY 93.

FEATURES:
The land attack version of Tomahawk has inertial and terrain contour matching (TERCOM) guidance. TERCOM uses a stored map reference to compare with the actual terrain to determine the missile's position. If necessary, a course correction is then made to place the missile on course to the target. The anti-ship version has a modified Harpoon cruise missile guidance system. This permits Tomahawk to be launched and fly at low altitudes in the general direction of an enemy warship to avoid radar detection. At a programmed distance, the missile begins an active radar search to seek out, acquire and hit the target ship.

POINT OF CONTACT:
DOD Public Affairs Office; Program Executive Office for the Cruise Missiles Project and Unmanned Aerial Vehicles Joint Project; Washington DC 20361-1014; (202) 692-0565

(more)

GENERAL CHARACTERISTICS

Primary Function:	Long-range subsonic cruise missile for anti-surface (anti-ship) warfare and conventional or nuclear land attack
Contractors:	General Dynamics, Convair Division; McDonnell Douglas
Unit cost:	$1.1 to 1.2 million
Power Plant:	Williams International F107-W-R-400 cruise turbo-fan engine; solid-fuel booster
Length:	18 feet, three inches (5.56 m.); with booster, 20 feet, six inches (6.25 m.)
Weight:	2,650 pounds (1192.5 kg.); 3,200 pounds (1440 kg.) with booster
Diameter:	20.4 inches (51.81 cm.)
Wing Span:	Eight feet, nine inches (2.67 m.)
Range:	Land attack, nuclear warhead, 1,350 nautical miles (1552.5 statute miles, 2484 km.) Land attack, conventional warhead, 600 nautical miles 690 statute miles, 1104 km.) Anti-ship configuration, over 250 nautical miles (287.5 statute miles, 460 km.)
Speed:	Subsonic - about 550 mph (880 kmph)
Guidance System:	Active Radar Homing (anti-ship) Inertial and TERCOM (Terrain Contour Matching) (land attack)
Warheads:	Conventional-1,000 pounds bullpup or conventional submunitions dispenser with combined effect bomblets Nuclear - W-80 warhead
Date Deployed:	1983

DEPARTMENT OF DEFENSE
THE UNITED STATES FACT FILE

TORPEDOES

SERVICE: Navy

DESCRIPTION:
Self-propelled guided projectile that operates underwater and is designed to detonate on contact or in proximity to a target.

FEATURES:
Torpedoes may be launched from submarines, surface ships, helicopters and fixed-wing aircraft. They are also used as parts of other weapons; the Mark 46 torpedo becomes the warhead section of the ASROC (Anti-submarine rocket) and the Captor mine uses a submerged sensor platform that releases a torpedo when a hostile contact is detected.

The three major torpedoes in the Navy inventory are the Mark 48 heavyweight torpedo, the Mark 46 lightweight and the Mark 50 advanced lightweight.

The MK-48 is designed to combat fast, deep-diving nuclear submarines and high performance surface ships. It is carried by all Navy submarines. The improved version, MK-48 ADCAP, is carried by SSN 688 and SSN 637 class attack submarines and will be carried by the Seawolf class attack and Ohio class ballistic missile submarines. The MK-48 replaced both the MK-37 and MK-14 torpedoes.

The MK-48 has been operational in the U.S. Navy since 1972. MK-48 ADCAP became operational in 1988 and was approved for full production in 1989.

The MK-46 torpedo is designed to attack high performance submarines, and is presently identified as the NATO standard. The MK-46 Mod 5 torpedo is the backbone of the Navy's lightweight ASW torpedo inventory and is expected to remain in service until the year 2015.

The MK-50 is an advanced lightweight

torpedo for use against the faster, deeper-diving and more sophisticated submarines. The MK-50 can be launched from all ASW aircraft, and from torpedo tubes aboard surface combatant ships. The MK-50 will eventually replace the MK-46 as the fleet's lightweight torpedo, with fleet introduction in the early 1990s.

FEATURES:
MK-48 and MK-48 ADCAP torpedoes can operate with or without wire guidance and use active and/or passive homing. When launched they execute programmed target search, acquisition and attack procedures. Both can conduct multiple reattacks if they miss the target.

The MK-46 torpedo (presently available in Mods 1, 2, and 5) is designed to be launched from surface combatant torpedo tubes, ASROC missiles and fixed and rotary wing aircraft. In 1989, a major upgrade program began to enhance the performance of the MK-46 Mod 5 in shallow water. Weapons incorporating these improvements are identified as Mod 5A and Mod 5A(S).

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20362; (703) 692-6920)

(more)

GENERAL CHARACTERISTICS, MK-48, MK-48(ADCAP)

Primary Function:	Heavyweight torpedo for submarines
Contractor:	Gould
Power Plant:	Piston engine; pump jet
Length:	19 feet (5.79 meters)
Weight:	3,434 lbs (1545.3 kg)(MK-48) 3,695 lbs (1662.75 kg)(MK-48 ADCAP)
Diameter:	21 inches (53.34 cm)
Range:	Greater than five miles (eight km)
Depth:	Greater than 1,200 ft (365.76 meters)
Speed:	Greater than 28 knots (32.2 mph, 51.52 kmph)
Guidance System:	Wire guided and passive/active accoustic homing
Warhead:	650 lbs (292.5 kg.) high explosive
Date Deployed:	1972

GENERAL CHARACTERISTICS, MK-46 MOD 5

Primary Function:	Air- and ship-launched lightweight torpedo
Contractor:	Honeywell Inc.
Propulsion:	Two-speed, reciprocating external combustion; Mono-propellant (Otto fuel II) fueled
Length:	102.36 in. tube launch configuration (from ship)
Weight:	517.65 lbs. (warshot configuration)
Diameter:	12.75 in.
Range:	8,000 yards
Speed:	Greater than 28 knots
Guidance System:	Homing mode: Active or passive/active acoustic homing Launch/search mode: Snake or circle search
Warhead:	98 lbs of PBXN-103 high explosive (bulk charge)
Date Deployed:	1966 (Mod 0) 1979 (Mod 5)

GENERAL CHARACTERISTICS, MK-50

Primary Function:	Air- and ship-launched lightweight torpedo
Contractors:	Honeywell, Westinghouse
Power Plant:	Stored Chemical Energy Propulsion System
Length:	112 inches
Weight:	750 pounds
Diameter:	12.75 inches
Speed:	40+ knots
Guidance System:	Active/passive acoustic homing
Warheads:	Approximately 100 pounds high explosive (shaped charge)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

TOW MISSILE

SERVICE: Army, Marine Corps

DESCRIPTION:
The Tube Launched, Optically Tracked, Wire-Guided (TOW) Weapon System is an anti-armor missile.

FEATURES:
The TOW system can track targets in poor visibility and all weather conditions. Once the missile is fired, the gunner need only keep his crosshairs on the target. Guidance of the missile to its target is controlled by a thin wire. A computer in the launcher corrects any deviation from the aim point on the target and sends corrections to the missile via wires that deploy in flight.

The system is composed of a reusable launcher, a missile guidance set and sight system. It can be mounted on a tripod.

BACKGROUND:
The basic TOW was fielded by the Army in 1970. The latest version is the TOW 2B, first issued in October 1992. This system is mounted on the Army's Bradley Fighting Vehicle, the Army's AH-1S Cobra Attack Helicopter, the Marine Corps' Light Armored Vehicle (Anti-Tank and the High Mobility Multipurpose Wheeled Vehicle (Hum-vee). The Army has 101,446 TOWs in its inventory.

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7598; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492

GENERAL CHARACTERISTICS

Primary Function:	Heavy Anti-tank Missile
Contractors:	Hughes Aircraft Corporation (Missile, Launcher and Night Sight); Kollsman (Night Sight); Electro-Design Manufacturing Inc. (TOW 2 Launcher)
Unit cost:	$20,800
Length:	46 inches (116.8 centimeters)
Diameter:	5.8 inches (14.9 centimeters)
Weight:	49.8 pounds (22.60 kilograms)
Maximum range:	2.33 miles (3.75 km)
Speed:	589 feet (178.5 meters) per second
Guidance:	Wire-guided from launcher by the gunner

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

GBU-15

SERVICE: Air Force

DESCRIPTION:
The GBU-15 is an unpowered, glide weapon used to destroy high-value enemy targets. It is designed to be used with F-15E and F-111F aircraft.

FEATURES:
The weapon consists of modular components that are attached to either an MK-84 or a BLU-109 penetrating warhead.

Each weapon has five components—a forward guidance section, warhead adapter section, control module, airfoil components and weapon-data link.

This highly maneuverable weapon has an optimal, low-to-medium altitude delivery capability with pinpoint accuracy. It also has a standoff capability.

BACKGROUND:
Air Force Systems Command's Armament Division, at Eglin Air Force Base, Fla., began developing the GBU-15 in 1974. It was a product improvement of the early guided bombs used during the Southeast Asia conflict. Flight testing of the weapon began in 1975. The GBU-15 with television guidance completed full-scale operational test and evaluation in November 1983, and in February 1985 initial operational test and evaluations were completed on the imaging infrared guidance seeker.

Desert Storm F-111F pilots used GBU-15 glide bombs to seal flaming oil pipeline manifolds sabotaged by Saddam Hussein's troops.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5007

GENERAL CHARACTERISTICS

Primary function:	Air-to-surface guided glide bomb
Contractor:	Rockwell International Corp.
Unit cost:	TV - $195,000; IIR - $300,000
Length:	12 feet, 10.5 inches (3.91 meters)
Launch weight:	2,500 pounds (1,125 kilograms)
Diameter:	18 inches (.45 meters)
Wing span:	4 feet, 11 inches (1.49 meters)
Range:	Classified
Ceiling:	30,000-plus feet (9,091 meters)
Speed:	Classified
Guidance system:	Television or imaging infrared seeker via Data Link
Warheads:	MK-84 general purpose or BLU-109 penetrating bombs
Date deployed:	1983

CHAPTER 8

Artillery and Mortars

BUSHMASTER 25mm GUN

SERVICES: Army, Marine Corps

DESCRIPTION:
A 25mm (one inch) cannon, used against lightly armored targets.

FEATURES:
The 25mm Vehicle Rapid Fire Weapon System, better known as the Bushmaster, is the primary armament for the Army's Bradley Fighting Vehicle. The Marine Corps carries this weapon on the Light Armored Vehicle (LAV) while the Navy carries it on many of its ocean-going vessels to deal with small attack craft. The gun is chain driven and allows single shot or automatic fire. It fires both European and U.S. 25mm ammunition and provides dual-feed instantaneous selection of either armor piercing or high explosive ammunition.

INVENTORY:
At the end of FY93, the Army will have on hand 7,324 Bushmasters, Marine Corps 401.

Photo unavailable at press time

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492; **Navy:** Office of Navy Information, (703)697-5320

GENERAL CHARACTERISTICS

Primary function:	To engage and defeat lightly armored targets
Contractor:	McDonnell Douglas Helicopter Corp, Mesa, Ariz.
Unit Cost:	$58,000
Weight:	235 pounds (105.8 kg)
Length:	108 inches (2.7 meters)
Height:	14.7 inches (37.3 cm)
Ammunition:	Armor piercing and high explosive incendiary
Muzzle velocity:	5,000 feet (approx. 1,500 meters) per second
Armor penetration:	2.5 inches (6.4 cm)
Ammunition feed:	Belt feed
Rate of fire:	Single shot or 120 rounds per minute

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

5 INCH-54 CALIBER LIGHTWEIGHT GUN

SERVICE: Navy

DESCRIPTION:
The 54 caliber (Mk 45) lightweight gun provides surface combatants accurate naval gunfire against fast, highly maneuverable surface targets, air threats and shore targets during amphibious operations.

BACKGROUND:
This lightweight gun system offers significant improvements in reliability and maintainability over the 54-caliber Mk 42 gun systems. The Mk 45 is controlled by either the Mk 86 Gun Fire Control System or the Mk 160 Gun Computing System. Deliveries began in 1971 and will continue through the 1990s for CG 47 and the DDG 51 classes.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20360; (202) 692-6920

GENERAL CHARACTERISTICS

Primary Function:	Fully automatic, lightweight gun mount
Range:	13 nautical miles (14.9 statute miles)
Type of Fire:	16 to 20 rounds per minute automatic
Magazine Capacity:	475-500 rounds per magazine
Size:	5 inch (12.7 cm)
Date Deployed:	1971 (Mark 45)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-101A1 105 mm HOWITZER

SERVICE: Marine Corps

DESCRIPTION:
The M-101A1 is a light, towed cannon that fires a 105mm (4.2-inch diameter) projectile. It is deployed in the field when the use of the 155mm howitzer is not practical.

FEATURES:
The M-101A1 105mm Light Howitzer can be used for direct (line of sight) or indirect fire. The cannon consists of a tube assembly, breech ring and locking ring, and is mounted on the recoil sleigh assembly. The firing mechanism is activated by pulling a lanyard. The cannon is single-loaded and air-cooled, and it uses semi-fixed ammunition, which can be adjusted for distance and target. The carriage has a single axle and split trail. The trails are divided when the weapon is positioned and set up, drawn together and locked during travel. The recoil mechanism is a constant hydro-pneumatic type shock absorber, installed in the cradle of the carriage.

INVENTORY: 248

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380--1775; (703) 614-1492.

(more)

GENERAL CHARACTERISTICS

Primary function:	Light, towed, general purpose field artillery weapon used to provide indirect fire support.
Builder:	Rock Island
Contractor:	AMCCOM
Unit cost:	$196,341
Length:	19.5 feet (5.94 meters)
Width:	7.25 feet (2.21 meters)
Height:	5.66 feet (1.73 meters)
Weight:	4,980 pounds (2,260 kg)
Bore diameter:	105 mm
Maximum effective range:	Seven miles (11.27 km)
Rates of fire:	Maximum: 10 rounds per minute Sustained: 3 rounds per minute
Crew:	Seven

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-102 105mm TOWED HOWITZER

SERVICE: Army

DESCRIPTION:
A lightweight, highly mobile cannon.

FEATURES:
The M-102 105mm howitzer is used in airmobile (helicopter) and light infantry operations. The weapon carriage is lightweight welded aluminum, mounted on a variable recoil mechanism. The weaponis manually loaded and positioned, and can be towed by a 2½ ton truck or High Mobility Multipurpose Wheeled Vehicle (HMMWV), can be transported by UH-60 Black Hawk helicopters, or can be dropped by parachute with airborne units.

When emplaced, the howitzer's high volume of fire compensates in large measure for the lower explosive weight of the projectile compared to the Army's 155mm and 8-inch howitzers.

BACKGROUND:
Since 1964, the Army has acquired 1,150 M-102 towed howitzers. This weapon is being replaced by the M-119-series 105mm howitzer (See M-119 series Howitzer Fact Sheet).

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

(more)

GENERAL CHARACTERISTICS

Primary function:	Field artillery cannon
Contractor:	Rock Island Arsenal, Ill.
Caliber:	105mm (4.2 inch)
Length:	21.875 feet (6.6 meters)
Width:	6.25 feet (1.9 meters)
Weight:	3,340 pounds (1,503 kg)
Maximum range:	15,100 meters (9.4 miles), high explosive rocket assisted projectile; 11,500 meters (7.2 miles) standard projectile
Maximum rate of fire:	30 rounds in three minutes
Projectile Weight:	Approx. 33 pounds (14.9 kg)
Ammunition:	High Explosive (HE), HE rocket assisted, HE improved conventional munition (bomblet), smoke, illumination, anti-personnel ("Beehive," or flechette), leaflet
Crew:	Nine

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-109A3 155mm SELF-PROPELLED HOWITZER

SERVICE: Marine Corps

DESCRIPTION:
The M-109A3 is an armored self-propelled medium howitzer firing a 155mm (about 6.2 inch diameter) shell. It is used to provide indirect fire support.

FEATURES:
The 155mm M-109A3 can be transported by C-5 aircraft. It has an amphibious capability when equipped with a flotation kit. Components of the weapon include a periscope, cannon, firing mechanism, howitzer cannon, elbow telescope and panoramic telescope.

BACKGROUND:
The M-109A3 has been in the Marine Corps inventory since the mid-1970s. All 36 howitzers are in the Reserves inventory.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Provides artillery support for armored and mechanized infantry forces.
Contractor:	ARRCOM (Turret); TACOM (Chassis); CECOM (Communications)
Unit cost:	$958,956
Power plant:	8V71T Detroit Diesel Engine
Power train:	XTG-411-2A Allison
Length:	29.66 feet (9.04 meters)
Width:	10.75 feet (3.27 meters)
Height:	9.17 feet (2.79 meters)
Weight:	53,060 pounds (24,089 kg)
Weight fully armed:	55,000 pounds (24,970 kg)
Bore diameter:	155mm (6.2 inches)
Maximum effective range:	14.5 miles (23.5 km) (with rocket-assisted projectile)
Rate of fire:	Maximum:4 rounds per minute for 3 minutes Sustained:1 round per minute
Travel Range:	220 miles (354.2 km) at cruising speed
Speed:	35 miles (56.32 km) per hour, maximum
Crew:	6 enlisted
Armament:	Main:M-185 155mm cannon Secondary: M-2 .50 caliber machine gun

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-110A2 SELF-PROPELLED HOWITZER

SERVICE: Army

DESCRIPTION:
Self-propelled heavy artillery cannon with a crew of 12.

FEATURES:
The M-110A2 is a full-tracked, self-propelled artillery weapon that fires a 200-pound, eight-inch diameter projectile. Ammunition includes standard high explosives, bomblets and high explosive rockets. It is found in some corps artillery units. This howitzer system was designed to provide medium-range, general support artillery fire. It is not armored and can travel at about 34 miles (54.4 km) per hour.

BACKGROUND:
The Army received this howitzer in 1963. There are 1,023 M-110A2s in the Army inventory.

POINT OF CONTACT:
Army Public Affairs, The Pentagon, Washington DC, 22302; (703) 697-7589

(more)

GENERAL CHARACTERISTICS:

Primary function:	Heavy artillery weapon
Contractor:	BMY Corp., Marysville, Ohio
Unit cost:	$433,830
Main Armament:	8-inch cannon
Weight:	62,500 pounds (28,125 kg)
Length:	35.3 feet (10.7 meters)
Width:	10.4 feet (3.15 meters)
Cruising Range:	325 miles (520 km)
Maximum Range:	30,000 meters (18.8 miles) with rocket assisted projectile, 23,000 meters (14.4 miles) with standard projectile
Muzzle Velocity:	Varies with projectile and charge; typically about 1,200 feet per second
Sustained rate of fire:	One round every two minutes
Lethality:	80 meter (264 feet) burst radius with high explosive projectiles

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-119A1 105mm HOWITZER

SERVICE: Army

DESCRIPTION:
The M-119A1 is a lightweight 105mm artillery piece that can be positioned quickly by ground vehicle or helicopter.

FEATURES:
The M-119A1, usually towed by a Humvee battle vehicle, is airmobile (can be sling loaded) by helicopter, and air transportable by C-130 and larger transport aircraft. It fires all U.S. and NATO standard 105mm projectiles.

BACKGROUND:
This howitzer provides direct support artillery fire in support of the Army's airborne, air assault and infantry units. The Army received its first deliveries in 1989. At completion of procurement in FY96, the Army will have 498 M-119A1 Howitzers.

POINT OF CONTACT: Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS

Primary function:	Artillery support for light divisions and brigades
Contractors:	Rock Island Arsenal, Ill., and Watervliet Arsenal, N.Y.
Unit cost:	$569,000
Caliber:	105mm (about 4.2 inches)
Weight:	4,000 lbs (1,800 kilograms)
Width:	70 inches (1.8 meters)
Length:	241.5 inches (6.1 meters)

(more)

Height:	54 inches (1.4 meters)
Crew:	Seven
Muzzle velocity:	Varies with projectile and charge, typically about 1,200 feet per second
Rate of fire:	12 rounds per minute for the first three minutes, then five rounds perminute indefinitely
Maximum range:	12.2 miles (about 19.5 km) with rocket assisted projectile; 8.9 miles (14.3 km) with conventional projectile
Ammunition used:	High explosive, cluster bomblets, smoke, illumination, white phosphorous and rocket assisted (small rocket motor in the base of the projectile for additional range)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-198 155mm HOWITZER

SERVICES: Army and Marine Corps

DESCRIPTION:
The M-198 is a 155mm (6.2 inches) field cannon.

FEATURES:
The M-198 is a helicopter transportable 155mm towed howitzer used in a general support role for Army light infantry divisions or Marine Corps Air Ground task forces. The M-198 has a conventional split trail carriage and utilizes a hydropneumatic recoil mechanism. In firing position, the split trails are spread and locked, the wheels are raised off the ground, and the weapon rests on a firing base. The cannon is designed in accordance with a quadrilateral agreement among Germany, the United Kingdom, Italy and the United States.

BACKGROUND:
The M-198 provides significant improvement over its predecessor, a World War II-era howitzer, in lethality, range, reliability, emplacement ease and movement. The weapon began as an advanced development project in 1968. Firing tests began in 1970. The M-198 was developed under the auspices of the Project Manager for Cannon Artillery Weapons System. Initial limited pro

duction of the weapon was completed at the Rock Island Arsenal in March 1979. The Marine Corps received the M-198 in 1982. Rock Island Arsenal manufactures the recoil mechanism and carriage and also performs final integration and assembly. Watervliet Arsenal produces the cannon. There are 653 M-198s in the Army inventory. The Marine Corps has 541 M-198s in its inventory with a procurement objective of 566. The unit cost of this howitzer is $640,000.

POINTS OF CONTACT:
Army: Army Public Affairs office, (703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703) 614-1492

(more)

GENERAL CHARACTERISTICS

Primary function:	Field artillery fire support
Contractor:	Rock Island Arsenal, Ill., Watervliet Arsenal, N.Y.
Weight:	15,740 pounds (6,961.5 kilograms)
Length:	40 feet 3 inches (12.2 meters)
Maximum towing speed:	45 miles (72 kilometers) per hour
Caliber:	155mm
Range:	30,000 meters (18.8 miles) with rocket assisted projectile or 22,400 meters (13.9 miles) with conventional ammunition
Maximum rate of fire:	Four rounds per minute
Traverse ability:	400 mils (22.5 degrees) right and left of center
Muzzle velocity:	Varies with projectile and charge; typically, about 1,500 feet (455 meters) per second.
Lethal range:	50 meter (165 feet) burst radius with high explosive projectiles.
Ammunition:	155mm artillery munitions, including high explosive, dual-purpose improved conventional munitions or DPICM (which contains 88 bomblets per projectile), smoke, illumination, and antipersonnel and anti-armor mines dispersed from the base of the projectile as it nears the ground.
Armor:	None
Crew:	Nine

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-221 60mm MORTAR

SERVICE: Army, Marine Corps

DEFINITION:
An infantry weapon that can lob shells onto out-of-sight targets.

FEATURES:
The M-221 60mm mortar is a smooth-bore, muzzle loaded weapon that can lob a projectile at a high-angle without benefit of line of sight aiming. The mortar has four main components: barrel, sight, bipod and baseplate. The mortar may also be used for direct fire missions (direct line of sight) by eliminating the bipod and substituting the small baseplate for the conventional baseplate. When this is done one man can operate the mortar, and it is then referred to as a hand-held mortar, but its accuracy is greatly reduced.

The 60mm mortar has filled the requirement for a small, lightweight, simple indirect fire weapon since its reintroduction to the Marine Corps in 1966.

POINT OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marines:** Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	High-angle indirect fire weapon.
Unit cost:	$12,822
Weight:	Total:45.2 pounds (20.52 kilograms) Mortar with M1 baseplate:20.5 pounds (9.31 kilograms) Barrel:16 pounds (7.26 kilograms) Bipod:16.4 pounds (7.45 kilograms) M-5 baseplate:12.8 pounds (5.81 kilograms) M-1 Baseplate:4.5 pounds (2.04 kilograms)

(more)

Elevation: With M-5 mount (conventional):40 to 85 degrees
With M1 baseplate:0 to 85 degrees
High Explosive:5,905.8 feet (1,800 meters)
Smoke (White phosphorous):4,920 feet (1,500 meters)
Illumination:3,281 feet (1,000 meters)

Rate of fire: Maximum:30 rounds per minute
Sustained:18 rounds per minute

Types of ammunition:

High Explosive:
The HE round breaks up into small fragments when it explodes. Its purpose is to produce casualties. One mortar firing one round will neutralize an area 20 meters (65.62 feet) across by 10 meters (32.81 feet) deep. One mortar firing three rounds will neutralize an area 35 meters (114.84 feet) wide and 35 meters (114.84 feet) deep.

White Phosphorous:
The WP round's main purpose is to screen friendly troops from enemy observation. It also has a secondary effect of producing casualties by burning. When the WP round breaks on the ground, white phosphorous particles spread over an area 10 meters (32.81 feet) across by 10 meters (32.81 feet) deep. The smoke produced by this round will normally billow out, depending on the weather, and will produce a screening effect.

Illuminating:
The illumination round produces 330,000 candle power and will illuminate an area 500 meters (1,640.5 feet) in radius. It is used at night to illuminate a given area. With a range of 1,000 meters (3,281 feet) and an illumination radius of 500 meters (1,640.5 feet) a round will illuminate out to approximately 1,500 meters (4,921.5 feet). The parachute flare of the illumination round will burn in the air for about 30 seconds.

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-224 60MM MORTAR

SERVICE: Army, Marine Corps

DESCRIPTION:
The M-224 60mm Lightweight Mortar is a smooth bore, muzzle-loading weapon. It is fired by dropping a projectile into the firing tube.

FEATURES:
The high explosive round used in the M-224 has snap-off propellant segments, allowing the gunner to adjust the range by changing the amount of propellant, and a variable fuse, adjusted by rotating the fuse head. The fuse setting allows the projectile to burst before impact, on impact or after impact.

BACKGROUND:
The M-224 60mm Mortar replaced the 81mm mortar for Army infantry companies. The Army has 1,116 of these weapons.

POINT OF CONTACT: Army: Army Public Affairs, (703) 697-7589; Marine Corps: Headquarters, U.S. Marine Corps Division of Public Affairs, (703) 614-1492

GENERAL CHARACTERISTICS

Primary function:	Infantry mortar
Contractor:	Watervliet Arsenal, New York
Unit cost:	$21,531
Maximum range:	2.2 miles (3.5 km)
Weight:	46.5 pounds (21.1 kg)
Rate of fire:	30 rounds per minute
Length:	40 inches (approx. 1 meter)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-29 81mm MORTAR

SERVICE: Marine Corps

DESCRIPTION:
A high-angle heavy mortar, designed for indirect fire.

FEATURES:
The M-29 81mm mortar, like the 60mm mortar, is a smooth-bore, muzzle-loaded, high-angle, indirect fire weapon. It consists of a barrel, sight, bipod, and baseplate. Unlike the 60mm mortar, there is no provision or need for the hand-held method. The M-29 has a greater range, and its circular baseplate allows for firing in any direction.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	High angle, indirect fire weapon.
Unit cost:	$26,942
Weight:	Barrel: 28 pounds (12.71 kg)
	Mount, M-23A1: 31 pounds (14.07 kg)
	Baseplate M-23A1: 48 pounds (21.79 kg)
	Baseplate M-3: 28.5 pounds (12.94 kg)
	M-34A2 sight unit: 4 pounds (1.82 kg)
	M-63 sight unit: 5.25 pounds (2.38 kg)
Range:	High Explosive: 2.8 miles (4.5 km)
	White Phosphorous: 2.8 miles (4.5 km)
	Illumination: 2.1 miles (3.35 km)

(more)

Types of Ammunition:

High Explosive: The HE round breaks up into small fragments when it explodes. Its purpose is to produce casualties. The standard HE round is the M-374 which weighs approximately 9.5 pounds (4.3 kg). It has a total of nine increments and a maximum range 2.8 miles (4.5 km). The filler is Composition B explosive, and the shell has a bursting area in excess of 98.43 by 65.62 feet (30 by 20 meters).

White Phosphorous: The WP round's main purpose is to screen friendly troops from enemy observation. It also has a secondary effect of producing casualties by burning. The standard WP round is the M-375. The shell is similar to the M-374 except that it is loaded with approximately 1.6 pounds (.73 kg) of white phosphorous. It weighs approximately 9.5 pounds (4.3 kg) and contains nine increments. The bursting area and effectiveness against personnel is approximately half that of the high explosive shell.

Illuminating: The purpose of illumination rounds is to light up an area at night. The standard illumination round is the M-301A3. It weighs approximately 11 pounds (4.99 kg) and has a maximum range to burst of 2.1 miles (3,350 meters). The filler is a magnesium flare attached to a parachute. When expelled, the flare produces a light of approximately 500,000 candlepower and will illuminate an area of about 10,764 square feet (1,000 square meters). The flare burns for approximately 75 seconds.

Rate of fire:

Maximum: 12 rounds per minute
Sustained: Three to five rounds per minute

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-252 81mm MORTAR

SERVICE: Marine Corps

DESCRIPTION:
A medium weight, extended range mortar

FEATURES:
The M-252 81mm Medium Extended Range Mortar is a medium weight mortar that is highly accurate and has a greater range (4,500 meters to 5,650 meters) and lethality than the previous 81mm mortar. The muzzle end has a short tapered lead-in that acts as a blast reducing device. The breech end is finned for better cooling. This mortar uses the standard M-64 mortar sight of the 60mm mortar, M-224.

BACKGROUND:
This mortar replaced the previous Marine Corps 81mm mortar in 1986. The M-252 is an adaptation of the standard British 81mm mortar developed in the 1970s. It is most commonly found in the mortar platoon of an infantry battalion.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Heavy mortar for over-horizon fire
Unit cost:	$26,942
Length:	56 inches (142.24 cm)
Weight:	Mortar Assembly: 35 pounds (15.89 kg) Bipod: 26 pounds (11.80 kg) Baseplate: 25.5 pounds (11.58 kg) Sight Unit: 2.5 pounds (1.14 kg) Total: 89 pounds (40.41 kg)
Bore diameter:	81mm
Maximum effective range:	3.51 miles (5.65 km)
Rates of fire:	Maximum: 33 rounds per minute Sustained: 16 rounds per minute
Elevation:	45 to 85 degrees

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-120 / M-121 MORTAR

SERVICE: Army

DESCRIPTION:
A muzzle-loaded, 120mm (4.7 inch) mortar

FEATURES:
The 120mm Mortar is smoothbored, muzzle-loaded and provides indirect fire support, for light battalions, replacing the M-30, 4.2 inch (105mm) mortar. The M-120 is towed on a two-wheeled carriage and the M-121 is mounted on the M1064 Mortar Carrier.

BACKGROUND:
The 120mm Mortar was acquired from Israel. The Army received the M-120 mortar in 1991, and expects to put its first M-121s in the field in 1994. The Army presently has 63 M-120 mortars and expects to have 1,662 M-121 mortars in its inventory at the end of FY98.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7989

GENERAL CHARACTERISTICS:

Primary function:	Mortar fire for armored, mechanized, and motorized battalions
Contractor:	Watervliet Arsenal, NY
Unit cost:	$136,000
Caliber:	120mm (4.72 inches)
Weight:	318 lbs (143.1 kg)
Crew:	Five (Towed); Four (Carrier)
Muzzle velocity:	Varies with projectile type and charge, typically about 1,000 feet (303.3 meters) per second
Sustained rate of fire:	Four rounds per minute
Maximum range:	7,240 meters (4.5 miles)
Lethality:	30 meter (100 feet) bursting radius for high explosive shell
Ammunition used:	High explosive, smoke, illumination

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

76MM/62 CALIBER GUN SYSTEM

SERVICE: Navy

DESCRIPTION:
A lightweight, rapid-fire three-inch gun mounted on small combat vessels.

BACKGROUND:
Because of performance, lightweight and low manning requirements, the MK 75 is suited for installation on small combat vessels. Current usage includes one gun mount each for some Navy frigates and hydrofoils, and for one gun mount each for the larger Coast Guard cutters. The Mark 75 was provisionally approved for service use in September 1975.

The Naval Systems Division (NSD) of FMC Corporation and General Electric Co. (Ordnance Systems Division) were both licensed by the gun's designer, OTO Melara of La Spezia, Italy, and competed for the right to manufacture the MK-75 in the United States. In 1975, FMC/NSD won the competition. Since 1981, however, all MK 75 buys have been competed for by FMC/-NSD and OTO Melara.

The first United States produced gun mount was delivered in August 1978.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20360; (202) 602-6920

GENERAL CHARACTERISTICS

Primary Function:	Single barrel, lightweight, water-cooled, rapid fire, remote controlled, dual purpose automatic enclosed naval gun
Contractor:	Designed by OTO Melara, Italy Mfg by FMC Naval Systems Division and OTO Melara
Range:	10 nautical miles (11.5 statute miles, 18.4 km.)
Guidance System:	Remotely controlled
Type of Fire:	80 rounds per minute automatic
Caliber:	76 mm (three inch)
Date Deployed:	1977 (USS Oliver Hazard Perry)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

MARK 15 PHALANX CLOSE-IN WEAPONS SYSTEM

SERVICE: Navy

DESCRIPTION:
Fast-reaction, rapid-fire 20-millimeter gun system.

FEATURES:
Phalanx provides U.S. Navy ships with a terminal defense against anti-ship missiles that have penetrated outer fleet defenses. Designed to engage anti-ship cruise missiles and fixed wing aircraft at short range, Phalanx automatically engages functions usually performed by separate, independent systems such as search, detection, threat evaluation, acquisition, track, firing, target destruction, kill assessment and cease fire.

BACKGROUND:
The Phalanx Close-In Weapons System (CIWS) underwent operational tests and evaluation onboard the USS Bigelow in 1977, and exceeded maintainance and reliability specifications. PHALANX production started in 1978 with orders for 23 USN and 14 Foreign Military Sales (FMS) systems. As of November 1992 more than 750 systems have been manufactured. The upgrade

program includes these improvements. FY86: increased elevation coverage and magazine capacity; FY88: increased search sensitivity and rate of fire; FY90: increased reliability.

POINT OF CONTACT:
Public Affairs Office, Naval Sea Systems Command (OOD); Washington, DC 20360; (202) 602-6920

(more)

GENERAL CHARACTERISTICS

Primary Function:	Anti-ship missile defense
Contractor:	Hughes Missile Systems Company (formerly General Dynamics' Pomona Division, sold to Hughes in 1992)
Weight:	12,500 pounds (5,625 kg.) Later models: 13,600 pounds (6,120 kg.)
Range:	Classified
Gun type:	M-61A1 Gatling
Type of Fire:	3,000 rounds per minute Later models: 4,500 rounds/min (starting 1988 production, Pneumatic Gun Drive)
Magazine Capacity:	989 rounds Later models: 1,550 rounds
Caliber:	20mm
Ammunition:	Armor Piercing Discarding Sabot (APDS), Depleted Uranium sub-caliber penetrator. Penetrator changed to Tungsten 1988.
Sensors:	Self-contained search and track radar
Date Deployed:	1980 (aboard USS Coral Sea) Later models: 1988 (aboard USS Wisconsin)

CHAPTER 9

Small Arms

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

12 GAUGE SHOTGUN

Service: Marine Corps

FEATURES:
The 12-gauge shotgun is a manually operated (pump), repeating shotgun with a seven-round tubular magazine and a modified choke barrel. It is equipped with a bayonet stud, sling swivels and a standard length military stock. This special-purpose weapon is used for guard duty, prisoner supervision, local security, riot control and any situation that might require the use of weapons of limited range and penetration but maximum stopping power.

BACKGROUND:
Various models of shotguns have been in service use since 1901. The current inventory consists of three different 12 gauge shotgun models: the Remington 870, Winchester 1200 and Mossberg 590. Weight and length of the weapon depend on the manufacturer.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Manually operated (pump), repeating shotgun.
Unit cost:	$395
Length:	41.75 inches (106.05 centimeters)
Weight:	8 pounds (3.63 kilograms)
Bore diameter:	12 gauge
Maximum effective range:	50 yards (45.7 meters) with "00" buckshot load

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

REVOLVER, .38 CALIBER

SERVICE: Marine Corps, Army

FEATURES:
The .38 caliber revolver is a six-shot handgun, made with two- and four-inch barrels, manufactured by Colt, Ruger, and Smith & Wesson. The two-inch barrel weapons are used by Criminal Investigation Division and counterintelligence personnel.

This weapon can be fired by cocking the hammer (single-action) or with a trigger pull that brings the hammer back before releasing it (double-action).

BACKGROUND:
Modern .38 caliber revolvers have been in service since World War II (Colt and Smith & Wesson). Ruger revolvers entered service in the 1970s. During the mid-1980s, the M-9 9mm (Beretta) semiautomatic pistol began replacing revolvers.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380--0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Personal sidearm
Unit cost:	$325
Length:	9.25 inches (23.50cm)
Barrel length:	4 inches (10.16 cm)
Weight:	1.9 pounds (.86 kg)
Bore diameter:	.38 caliber
Maximum effective range:	82.02 feet (25 meters)

Current: April 1993

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

M-9 PISTOL

SERVICES: All

DESCRIPTION:
The M-9 is a 9mm double-action semi-automatic pistol, with a 15-shot magazine.

FEATURES:
Designed to replace the M-1911A1 .45 caliber pistol and the .38 caliber revolver in the military inventory, the M-9 Beretta pistol is carried by service members who do not carry rifles, such as law enforcement personnel, tankers and aviators. It can be fired effectively by right-handed or left-handed shooters.

BACKGROUND:
The adoption of the M-9 pistol was the result of a congressional mandate to equip all U.S. services with a standard handgun. Beretta USA has a contract to produce 315,930 weapons. As of January 1992, 262,932 M-9 pistols had been delivered.

POINTS OF CONTACT:
Army: Army Public Affairs,(703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703) 614-1492; **Navy:** Office of Navy Information (703) 697-5320; **Air Force:** Secretary of the Air Force Public Affairs/Media Relations, (703) 695-0640; Coast Guard: Commandant, U.S. Coast Guard, Attn: G-CP, (202) 267-1933.

GENERAL CHARACTERISTICS

Primary function:	Personal protection
Contractor:	Beretta USA, Accokeek, Md.
Caliber:	9mm
Weight:(loaded):	2.16 lbs (1.17 kg)
Length:	8.5 inches (21.6 cm)
Ammunition:	NATO standard 9mm ball
Ammunition feed:	Magazine
Maximum effective range:	50 meters (165 feet)
Magazine capacity:	15 rounds

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

.45 CAL. PISTOL, M-1911A1

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SERVICE: Marine Corps

DESCRIPTION:
The M-1911A1 Colt .45 is arguably the most famous semiautomatic handgun in the world. As its name implies, it was adopted by the U.S. armed forces in 1911.

FEATURES:
The M-911A1 is a .45 caliber (11 mm) semiautomatic, recoil-operated, magazine-fed pistol. It fires one round each time the trigger is squeezed after the hammer has been cocked once. This design is referred to as "single action only."

The M-1911A1 was widely respected for its reliability and lethality. However, its single action, cock-and-lock design requires the user to be well trained and very familiar with it to allow carrying the pistol in the "ready-to-fire" mode. M-1911A1s were often required to be carried without a round in the chamber. Even with this restriction, numerous unintentional discharges were documented yearly. The Marine Corps is replacing the M-1911A1 with the M-9 9mm pistol.

BACKGROUND:
The M-1911A1 had been the standard handgun issued to Marines since its adoption before World War I.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Personal sidearm
Unit cost:	$428
Length:	8.625 inches (21.91 cm)
Length of barrel:	5.03 inches (12.78 cms)
Weight:	Magazine empty:2.5 pounds (1.14 kg) Magazine loaded:3.0 pounds (1.36 kg)
Bore diameter:	.45 caliber (11 mm)
Maximum effective range:	82.02 feet (25 meters)
Muzzle velocity:	830 feet (253 meters) per second
Magazine capacity:	7 rounds

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-14 RIFLE

SERVICE: Marine Corps

FEATURES:
The M-14 7.62mm (.30 cal.) automatic rifle is a magazine-fed shoulder weapon, designed primarily for semi-automatic fire. It was replaced in the late 1960s by the 5.56mm M-161A1 rifle.

BACKGROUND:
At one time the standard issued rifle for Marines, the M-14 is now used primarily in the Competition in Arms program, or for drill and ceremonial purposes. The M-16 replaced the M-14 as the Table of Organization rifle for the Marine Corps during the Vietnam War.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Infantry sidearm
Unit cost:	$576
Length:	44.14 inches (112.12 cm)
Length of Barrel:	22 inches (55.88 cm)
Weight:	Empty magazine:8.7 pounds (3.95 kg) Full magazine and sling:10.0 pounds (4.54 kg)
Bore diameter:	7.62mm (.30 caliber)
Maximum effective range:	1509.26 feet (460 meters)
Muzzle velocity:	2,800 feet (853 meters) per second
Cyclic rate of fire:	750 rounds per minute
Magazine capacity:	20 rounds

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-16 RIFLE

SERVICES: All

FEATURES:
The M-16A2 is a lightweight 5.56mm (approx .22 caliber) rifle with a 30-shot magazine. The weapon was designed for either automatic (three-round bursts) or semiautomatic (single shot) fire. The bottom of the trigger guard opens to provide access to the trigger when the shooter is wearing gloves or mittens. A compensator helps keep the muzzle down during firing.

BACKGROUND:
The M-16A2 is a product improvement of the M-16A1 rifle, with these features:
- a heavier, stiffer barrel that can fire a NATO standard 5.56mm cartridge;
- a muzzle compensator that curbs "riding up" of the barrel;
- a burst control that limits the number of rounds fired in automatic mode to three per trigger pull;
- an improved rear sight;
- a new buttstock and pistol grip made of a tougher plastic;
- a redesigned handguard that provides a better grip; and
- a modified upper receiver, designed to prevent an ejected cartridge from hitting the face of a left-handed shooter.

INVENTORY:
The Army was issued the M16A2 in 1987, and has more than 380,000 M16A2s, with an objective to procure 620,000. Of these, 130,000 will be modified M-16A1s. The Air Force has more than 200,000 M-16A2 rifles.

POINTS OF CONTACT:
Army: Army Public Affairs, (703)697-7589; **Marine Corps:** Headquarters, USMC, Division of Public Affairs, (703)614-1492; **Navy:** Office of Navy Information (703)697-5320; **Air Force:** Secretary of the Air Force Public Affairs/Media Relations (703) 695-0640; **Coast Guard:**Commandant, U.S. Coast Guard, Attn: G-CP, (202) 267-1933

(more)

Current: April 1993

GENERAL CHARACTERISTICS

Primary function:	Combat Rifle
Contractors:	FN Mfg., Columbia, S.C.; Colt Mfg. Co., Hartford, Conn.
Unit cost:	$420
Caliber:	5.56mm
Weight:	8.8 pounds (3.99 kg)
Range:	1,800 feet (550 meters)
Magazine capacity:	30 rounds

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-249 SQUAD AUTOMATIC WEAPON (SAW)

SERVICES: Army and Marine Corps

DESCRIPTION:
The SAW is a lightweight 5.56mm machine gun carried by infantry squads.

FEATURES AND BACKGROUND:
The SAW is a magazine or belt-fed automatic rifle capable of hitting targets at more than 800 yards. It can be carried and operated by an individual soldier or Marine. It provides infantry squads and fire teams with the ability to fire at targets at greater distances than with a rifle and for longer periods of time without stopping. Gunners have the option of using a 30-round magazine or a 200-round magazine.

The Army first issued this weapon in 1984 and intends to have 28,000 SAWs at the end of the planned procurement in FY 93. The unit cost of the SAW is $2,300.

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492

GENERAL CHARACTERISTICS

Primary function:	Light machine gun for an infantry squad.
Contractors:	FN Manufacturing Inc., Columbia, S.C.
Caliber:	5.56mm (.22 cal.)
Weight:	16.3 pounds (7.33 kilograms)
Maximum effective range:	880 yards (800 meters) for point (individual) targets and 1,100 yards (1,000 meters) for area targets
Rates of fire:	Cyclic: 725 rounds per minute Sustained: 85 rounds per minute

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-24 SNIPER RIFLE

SERVICE: Army

DESCRIPTION: A 7.62mm (.30 caliber) rifle with 10-power telescope sight.

FEATURES:
The M-24 Sniper Rifle is the Army's first complete sniper system. The unit consists of a six-shot bolt-action rifle, daylight telescopic sight, an optional bipod, cleaning kit, and carrying cases. Its scope magnification is 10 power with one-half minute of angle windage.

BACKGROUND:
This system was acquired as a modified non-developmental item, based on an existing civilian market rifle. The contract was awarded to Remington Arms, based on testing of samples submitted by several contractors.

The Army was issued this weapon in 1988. It is used by Special Operations Forces and regular Army infantry units. There are 1,602 in the inventory.

POINT OF CONTACT:
Army Public Affairs, (703) 697-7589

GENERAL CHARACTERISTICS:

Primary function:	Sniper rifle
Contractor:	Remington Arms Co., Ilion, N.Y.
Cost:	$5,145
Weight:	Rifle, 12.1 pounds (5.4 kg); scope, 1.75 pounds (.79 kg), bipod .7 pounds (.3 kg)
Length:	43 inches
Caliber:	7.62mm (.30 cal.) Special Ball
Barrel rifling:	5 radial grooves with one turn per 11.2 inches
Muzzle velocity:	2,600 feet (792.5 meters)per second
Maximum effective range:	800 meters (half mile)

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-82A1A .50 CAL. RIFLE

SERVICE: Marine Corps

DESCRIPTION:
Heavy caliber, long-range sniper rifle

FEATURES:
The M-82A1A is a semiautomatic, magazine-fed .50 caliber (12.7mm) rifle. The rifle is issued with a 10-power scope and an additional magazine.

The rifle is equipped with bipod, muzzle brake to reduce recoil, carrying handle, metallic sights, 10-round magazine and a backpack for cross-country transport.

BACKGROUND:
The M-82A1A is designed to provide commanders the tactical option of employing snipers with a heavier caliber weapon to augment the M-40A1 7.62mm (.30 cal.) sniper rifle.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Sniper rifle
Unit cost:	$5,329
Contractor:	Barrett Firearms Mfg. Inc.; Unertl
Length:	57 inches (144.78 cm)
Barrel length:	29 inches (73.67 cm)
Weight:	32.5 pounds (14.75 kg) (unloaded)
Bore diameter:	.50 caliber (12.7mm)
Maximum effective range:	1,800 meters
Muzzle velocity:	2,800 feet (854 meters) per second
Magazine capacity:	10 rounds

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

INFRARED AIMING LIGHT

SERVICE: Marine Corps

DESCRIPTION:
An infrared laser light used to mark targets for small-arms fire.

FEATURES:
The AN/PAQ-4A Infrared Aiming Light is a lightweight, battery powered, pulsating infrared target marker that produces a beam invisible to the naked eye. It allows the user to engage targets at night while wearing night vision goggles.

This light can be used with the M-16 rifle, the M-60 machine gun, the M-2 heavy machine gun and the M-249 SAW. It is versatile and adaptable to a wide variety of missions throughout the Marine Corps.

The AN/PAQ-4A emits a small, pulsing infrared beam to the aiming point. It marks targets from 100 meters to 300 meters depending on the ambient light available. The system can be powered by one standard lithium battery that will operate the aiming light for 40 hours continuously, or two standard AA batteries.

The light is designed to operate in a temperature range from -54 degrees centigrade (-129 degrees farenheit) to +65 degrees centigrade (149 degrees farenheit).

BACKGROUND:
The AN/PAQ-4A is in the third year of its production. It is used in conjunction with AN/PVS-7B Night Vision Goggles. The Infrared Aiming Light is intended for employment with all Marine Corps units equipped with night vision goggles.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Builder:	Insight Technology, Manchester, N.H.
Unit cost:	$250
Length:	6.1 inches (15.49 centimeters)
Width:	1.7 inches (4.32 centimeters)
Height:	2.1 inches (5.33 centimeters)
Weight:	Without batteries: 2.7 oz. (76.68 grams) With batteries: 9 oz. (255.15 grams)
Range:	100 meters minimum
Beam divergence:	Less than 2 milliradians
Power source:	One BA-5567 lithiumn battery or 2 AA batteries

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

AT-4 ANTI-TANK WEAPON

SERVICE: Army, Marine Corps

FEATURES:
The AT-4 anti-tank weapon is a lightweight, expendable, self-contained rocket launcher that fires a single rocket. It consists of an 84mm (3.36 inch) cone-shaped warhead designed to penetrate armor plate. Both the warhead and its rocket motor are housed in an expendable reinforced fiberglass launch tube. It is fired by an individual soldier from the shoulder position. It is designed to allow individual gunners to destroy such targets as enemy tanks and armored vehicles.

BACKGROUND:
The unit cost of this weapon is $1,060. It was developed in Sweden in the 1970s and approved for the U.S. Army in 1985.

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589
Marine Corps: Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492

(more)

Current: April 1993

GENERAL CHARACTERISTICS

Primary function:	Light anti-armor weapon
Contractor:	FFV of Sweden with U.S. production licensed to Alliant Techsystems Inc.
Weight:	14.75 lbs.(6.70 kg)
Range:	990 feet (300 meters)
Muzzle velocity:	950 feet (285 meters) per second
Length:	40 inches (101.6 cm)
Caliber:	84 mm (3.36 inches)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

DRAGON ASSAULT MISSILE

SERVICE: Army, Marine Corps

DESCRIPTION:
One-man anti-tank missile weapon.

FEATURES:
The Dragon is a medium range, wire-guided (guidance of the missile to target is controlled by a thin wire), line-of-sight anti-tank/assault missile weapon capable of defeating armored vehicles, fortified bunkers, concrete gun emplacements and other hard targets. The system contains a launcher, tracker and missile. The launcher is an expendable, smooth bore, fiberglass tube with tracker and support bipod, battery, sling and front and back shock absorbers. It is designed to be carried and fired by an individual gunner.

BACKGROUND:
The Dragon was developed for the U.S. Army in 1970. It uses a cone-shaped charge for maximum penetration. The wire guidance allows the gunner to hit his target by keeping the crosshairs on the target until detonation. The launcher is expendable. The day and night tracker sights can be reused.

The missile is installed in the launcher during final assembly by the manufacturer and is received in a ready-to-fire condition. The launch tube serves as the storage and carrying case for the missile.

The Army has 7,000 systems in its inventory with approximately 33,000 Dragon missiles. The Marine Corps has 17,000 Dragon missiles in its inventory.

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589; **Marine Corps:** Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492

GENERAL CHARACTERISTICS

Primary function:	Portable Anti-armor/Assault Weapon System
Contractor:	McDonnell Douglas, Raytheon
Launcher length:	45.5 inches (115.32 cm)
Weight:	(ready to fire, without night tracker): 32.5 pounds (16.8 kg)
Missile length:	33.3 inches (84.58 cm)
Effective range:	1,000 meters (3,281 feet)
Speed:	220 miles (352 km) per hour
Missile weight:	27.2 pounds (12.24 kg)

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

25MM MK-38 MACHINE GUN SYSTEM (MGS)

SERVICE: Navy

DESCRIPTION:
The MK-38 is a 25-mm (one inch diameter) heavy machine gun, effective to 2,700 yards (2,457 meters).

BACKGROUND:
The MK 38 MGS was employed aboard various combatant and auxiliary ships in the Mid-East Force escort operations and during Operations Desert Shield and Desert Storm. The weapons are maintained in a rotatable pool, available for temporary installation on various deploying ships and permanant installation on certain amphibious and auxilliary ships, patrol craft and Coast Guard cutters.

POINT OF CONTACT:
Public Affairs Office; Naval Sea Systems Command (OOD); Washington, DC 20360; (202) 692-6920

GENERAL CHARACTERISTICS

Primary Function:	Single barrel, air cooled, semi- and full-automatic, manually trained and elevated machine gun system
Contractor:	Designed and assembled by Crane Division, Naval Surface Warfare Center; components procured from various contractors
Range:	2,700 yards (2,457 meters)
Guidance System:	Unstabilized, manually trained and elevated
Type of fire:	Single shot; 175 rounds per minute automatic
Magazine Capacity:	170 rounds
Caliber:	25mm
Date Deployed:	1986

Current: April 1993

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-240 MACHINE GUN

SERVICE: Marine Corps

DESCRIPTION:
A medium machine gun, 7.62mm (.30 caliber) fired from ground positions.

FEATURES:
The M-240G Machine Gun is the ground version of the M-240 mounted on tanks and light armored vehicles. The rate of fire may be controlled by three different regulator settings for single rounds, short bursts or sustained fire.

The M-240G is modified for ground use by installation of a buttstock and bipod, front and rear sights and a flash suppressor.

The durability of the M-240 results in superior reliability and maintainability over the M-60, the Marine Corps' primary ground-mounted machine gun.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Length:	47.5 inches (120.65 centimeters)
Weight:	24.2 pounds (10.99 kilograms)
Bore diameter:	7.62mm (.308 inches)
Maximum range:	2.31 miles (3.725 kilometers)
Maximum effective range:	1.1 miles (1.8 kilometers) on tripod mount
Rates of fire:	Cyclic: 650-950 rounds per minute Rapid: 200 rounds per minute Sustained: 100 rounds per minute

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-2HB .50 CALIBER MACHINE GUN

SERVICES: Army and Marine Corps

DESCRIPTION:
The M-2 .50 caliber machine gun provides sustained, concentrated fire in combat.

FEATURES:
The M-2 can be operated in a semi-automatic or automatic mode. An antipersonnel and antiaircraft weapon, it can be fired from a fixed position or from most vehicles.

BACKGROUND:
The M-2HB machine gun is often referred to as the Browning .50 caliber machine gun after its inventor, John M. Browning, in 1918. The M-2HB machine gun has been in the inventory since 1933.

POINTS OF CONTACT:
Army: Army Public Affairs, (703) 697-7589
Marine Corps: Headquarters, U.S. Marine Corps, Division of Public Affairs, (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Suppressive area fire against troop concentrations and lightly armored vehicles.
Contractor:	SACO Defense
Length:	61.42 inches (156 centimeters)
Weight:	Gun: 84 pounds (38 kilograms) M3 Tripod (complete): 44 pounds (19.98 kilograms) Total: 128 pounds (58 kilograms)
Caliber:	.50 (about 13 mm)
Ammunition:	Ball, tracer, armor piercing, incendiary and combinations of these.
Muzzle velocity:	2,930 feet (888.8 meters) per second
Maximum range:	22,324.5 feet (6,765 meters)
Maximum range:	5,775 feet (1,750 meters)
Rate of fire:	550 rounds per minute
Mount:	Tripod or vehicular mount
Crew:	One to three, depending on how it is mounted

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

M-60E3 7.62mm MACHINE GUN

SERVICE: Marine Corps

DESCRIPTION:
Medium machine gun, 7.62mm (.30 caliber) designed for ground firing.

FEATURES:
The M-60E3 7.62mm machine gun is an air-cooled, portable or tripod-mounted machine gun designed for ground operations. It has a fixed headspace and timing that permits rapid changing of barrels.

Slightly different from its parent, the M-60, the M-60E3 has a receiver-attached bipod that easily deploys for stability. It has an ambidextrous safety, universal sling attachments, a carrying handle on the barrel, and a simplified gas system that does not require safety wire to prevent loosening. However, the lightweight barrel is not safe for overhead fire and is not capable of sustaining a rapid rate of fire of 200 rounds per minute without severe damage failure of the barrel.

BACKGROUND:
The M-60E3, a lightweight version of the parent M-60, was fielded with the intention of reducing the load carried by the gunner. However, the reduction in weight resulted in firing limitations and a loss of reliability that severely restricts the use of the weapon in the Fleet Marine Force. Consequently, troop acceptance of the E-3 has been very poor.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Length:	42.4 inches (107.70 cm)
Weight:	18.75 pounds (8.51 kg)
Bore diameter:	7.62mm (.308 inches)
Maximum effective range:	3,609.1 feet (1,100 meters)
Maximum range:	2.3 miles (3,725 meters)
Muzzle velocity:	2,800 feet (853 meters) per second
Rates of fire:	Cyclic: 550 rounds per minute Rapid: 100 rounds per minute* Sustained: 100 rounds per minute* (* with barrel changes at each 100 rounds)

Current: April 1993

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

FRAGMENTATION HAND GRENADE

SERVICE: Marine Corps and Army

DESCRIPTION:
An explosive charge thrown at enemy troops and emplacements

FEATURES:
The body of the M-67 hand grenade is a 2.5-inch diameter steel sphere designed to burst into numerous fragments when detonated. It produces casualties within an effective range of 49.5 yards (15 meters) by the high velocity projection of fragments. The grenade body contains 6.5 ounces of high explosive. Each grenade is fitted with a fuse that activates the explosive charge.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Hand-held grenade used to supplement small arms fire
Unit cost:	$9.82
Body composition:	Steel
Weight:	14 oz (.40 kg)
Length:	3.53 in. (8.97 cm)
Diameter:	2.5 in. (6.35 cm)
Color:	Olive drab w/yellow markings
Explosive filler:	Type: Comp B Weight: 6.5 oz (184.6 grams)
Fuse:	Model: M213 Type: Pyrotechnic delay-detonating Primer (percussion) M42:
Detonator:	Lead azide, lead styphnate, and RDX
Delay time:	4-5 sec
Safety devices:	Pull ring and safety pin, safety clip

Current: April 1993

DEPARTMENT OF DEFENSE

THE UNITED STATES

FACT FILE

MK-19 40MM GRENADE LAUNCHER

SERVICES:
Army, Marine Corps (The Marine Corps has designed this weapon MK19 40mm Machine Gun, MOD 3)

DESCRIPTION:
The MK-19 Grenade Launcher is a fully automatic weapon that fires 40mm grenades.

FEATURES:
The MK19-3 can be mounted on a tripod or a vehicle swivel point. The weapon delivers accurate, intense, decisive firepower against personnel and lightly armored vehicles by shooting a variety of 40mm grenades. Because of its weight, it is crew transportable only over short distances with limited amounts of ammunition. The MK19-3 shoots a 40mm grenade, which can kill in a 32-foot (5-meter) circle and wound in a 100-foot (30-meter) circle (48 feet). The grenade can penetrate two inches of armor.

BACKGROUND:
The earliest version of this weapon was used by the U.S. Navy aboard its river patrol boats in Vietnam. The Army was first equipped with this weapon in 1989. By October 1993, the Army will have 5,005 MK19-3s in its inventory.

POINTS OF CONTACT:
Army: Army Public Affairs, (703)697-7598;
Marine Corps: Headquarters, U.S. Marine Corps, Division of Public Affairs, (703)614-1492

GENERAL CHARACTERISTICS

Primary function:	Automatic Grenade Launcher
Contractor:	SACO Defense Inc., Saco, Maine
Unit cost:	$14,500
Weight:	72.5 pounds (32.9 kg)
Muzzle velocity:	790 feet (240 meters) per second
Maximum effective range:	Point targets, 4,900 feet (1.5 km)
Maximum effective range	Area targets, 1.4 miles (2.2 km)
Crew:	Two
Rate of fire:	325-375 rounds per minute

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-203 40mm GRENADE LAUNCHER

SERVICE: Marine Corps

DESCRIPTION:
Grenade launcher attachment for the M-16 rifle

FEATURES:
The M-203 40mm Grenade Launcher is used while attached to a M-16A2 5.56mm rifle. It is a lightweight, compact, breech-loading, pump action, single shot launcher. The launcher consists of a hand guard and sight assembly with an adjustable metallic folding, short-range blade sight assembly, and an aluminum receiver assembly which houses the barrel latch, barrel stop and firing mechanism. The launcher is capable of firing a variety of low-velocity 40mm ammunition.

The launcher also has a quadrant sight that may be attached to the M-16A2 carrying handle and is used for maximum effective range.

BACKGROUND:
The M-203 was designed and procured as the replacement for the M-79 grenade launcher of the Vietnam War era. The final procurement of 1,825 weapons was completed in FY90.

INVENTORY: 1,825

POINT OF CONTACT: Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Increased range for grenades
Unit cost:	$635
Weight:	Launcher: 3 pounds (1.36 kg) Rifle (M-16A2): 8.79 pounds (3.99 kg) Total (including 30 rounds): 11.79 pounds (5.35 kg)
Bore diameter:	40mm
Maximum effective range:	Area target: 1,148.35 feet (350 meters) Point target: 492.15 feet (150 meters)
Maximum range:	1,312.4 feet (400 meters)
Minimum safe range:	Training: 426.53 feet (130 meters) Combat: 101.71 feet (31 meters)

Current: April 1993

THE UNITED STATES DEPARTMENT OF DEFENSE

FACT FILE

SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON (SMAW)

SERVICE: U.S. Marine Corps

DESCRIPTION:
A lightweight, man-portable assault weapon designed for use against fortified positions and light armor.

BACKGROUND:
The SMAW is effective against brick and block walls and sandbag and timber bunkers. It is ideally suited for military operations in built-up areas or for assaults against fortified positions.

FEATURES:
The SMAW's two major components are, a launcher and an encased rocket. The launcher is a smooth-bore, fiberglass and epoxy tube equipped with a sporting rifle. The encased rocket with dual mode warhead provides point detonation for hard targets and delayed detonation for soft targets.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps Division of Public Affairs, Washington DC, 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary Function:	Assault against fortified targets
Contractor:	McDonnel Douglas Astronautics Company
Length:	54 inches (137.2 cm)
Weight:	28.8 pounds (12.96 kilograms)
Bore:	3.27 inches (10.7 cm)
Rocket length:	29.4 inches (74.6 cm)
Rocket weight:	12.9 lbs (5.8kg)

Current: April 1993

CHAPTER 10

Miscellaneous Weapons and Support Equipment

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

AIRBORNE SELF-PROTECTION JAMMER

SERVICE: Navy

DESCRIPTION:
An electronics package that protects tactical aircraft by jamming lock-on radars from ground installations, aircraft and missiles.

BACKGROUND:
The Airborne Self-Protection Jammer (ASPJ) satisfies the on-board self-protection jammer requirements to enhance combat survivability for modern tactical aircraft into the next century. The ASPJ automatically implements a wide array of countermeasure techniques. The system can simultaneously detect, identify and counter multiple pulse, pulse doppler and continuous wave radars in a dense threat environment. ASPJ software is reprogrammable, allowing rapid changes to maintain effectiveness in a variety of combat environments.

ASPJ is adaptable to other services aircraft and currently is being tested on the U.S. Air Force F-16.

FEATURES:
The ASPJ is a versatile, modular DECM system, built by Westinghouse and ITT Avionics, that can be used in a wide variety of aircraft. Two configurations, basic and common, are in production. The basic system is comprised of five Weapon Replaceable Assemblies (WRAs) and is carried internally by the F/A-18 series aircraft. The common system includes the basic system plus an additional amplifier and transmitter and will be carried internally by the F-14.

POINT OF CONTACT:
Public Affairs Office; Naval Air Systems Command (AIR 07D2); Washington, DC 20361-0701; (703) 746-3791

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

LOW ALTITUDE NAVIGATION AND TARGETING INFARED FOR NIGHT (LANTIRN)

SERVICE: Air Force

DESCRIPTION:
A navigation and targeting aid that allows sophisticated fighter aircraft to fly at low altitudes at night, and under the weather to attack ground targets with precision-guided weapons.

FEATURES:
LANTIRN consists of a navigation pod and a targeting integrated pod and is externally mounted beneath the aircraft. The navigation pod provides high speed penetration and precision attack on tactical targets at night and in adverse weather. The navigation pod also contains a terrain-following radar and a fixed infrared sensor, which allow the aircraft to maintain a preselected altitude above the terrain and avoid obstacles. This sensor displays an infrared image of the terrain in front of the aircraft to the pilot on a head-up display. The navigation pod enables the pilot to fly along the general contour of the terrain at high speed, using mountains, valleys and darkness to avoid detection.
The targeting pod contains a high-resolution, forward-looking infrared sensor that displays an infrared image of the target to the pilot, a laser designator-rangefinder for precision navigation and delivery of laser-guided munitions, a missile boresight correlator for automatic lock-on of AGM-65D Maverick missiles, and software for automatic target tracking. These features simplify the functions of target detection, recognition and attack and permit pilots of single-seat fighters to attack targets with precision-guided weapons on a single pass.

BACKGROUND:
The LANTIRN research and development program began in September 1980. Initial operational test and evaluation of the LANTIRN navigation pod was successfully completed in December 1984. The Air Force approved full production in November 1986. The first production pod was delivered to the Air Force March 31, 1987.
In April 1986, initial operational test and evaluation of the LANTIRN targeting pod proved that a low-altitude, night, under-the-weather, precision attack mission was feasible. The Air Force approved low-rate initial production in June 1986.

POINT OF CONTACT:
Air Combat Command, Public Affairs Office, 90 Oak Street, Langley AFB, VA 23665-2191; (804) 764-5471

(more)

GENERAL CHARACTERISTICS

Primary function:	Low altitude navigation and targeting infrared for night flying
Contractor:	Martin Marietta Corp., Orlando, Fla.
Unit Cost:	Navigation pod, $1 million; targeting pod, $3 million
Length:	Navigation pod, 78.2 inches (1.99 meters); targeting pod, 98.5 inches (2.51 meters)
Diameter:	Navigation pod, 12 inches (.31 meters); targeting pod, 15 inches (.38 meters)
Weight:	Navigation pod, 470 pounds (211.5 kg); targeting pod, 524 pounds (235.8 kg)
Aircraft:	F-15E, F-16C/D
Sensors:	Infrared sensors on navigation pod and targeting pod
Introduction date:	March 1987

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

LINEAR DEMOLITION CHARGE

SERVICE: Marine Corps, Army

DESCRIPTION:
Nylon rope loaded with explosives, used to clear minefields

FEATURES:
The M59/M59A1 Linear Demolition Charge is a mine clearing device mounted in an assault amphibian vehicle. The device is used to clear paths through minefields on land and in the surf.

The four major components of the system are the linear demolition charge, the rocket, the launcher, and an AAVP7A1 vehicle (see separate fact sheet). The charge consists of a 350-foot length of explosive loaded nylon rope, an electrically activated fuse and a 205-foot length nylon leader, all in a steel container.

When the rocket is fired, the explosive rope is pulled from its container and laid over the minefield. The operator then detonates the charge to clear a path. The unit can clear a path approximately 100 feet long by 14 feet wide of anti-tank and anti-personnel mines.

Photo unavailable at press time

INVENTORY: 3,512

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380--1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Breach minefields
Length:	34 in. (86.36 cm)
Width:	42 in. (106.68 cm)
Height:	56 in. (1.42 meters)
Weight:	2,500 lbs. (approx.) (1,135 kg)
Explosive weight:	1,750 lbs. (approx.) (794.5 kg)
Explosive:	Composition C4

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-1 MINE CLEARING BLADE SYSTEM

SERVICE: Marine Corps

DESCRIPTION:
A front-end attachment for tanks, used to clear mines in the tank path.

FEATURES:
The Mine Clearing Blade System for the M-1A1 Main Battle Tank (see separate fact sheet) is an ancillary piece of support equipment. It is electrically operated and is capable of clearing surface or buried mines up to six feet in front of the tank's path without the aid of supporting forces or additional equipment. The blade system has also been adapted for use with the previous Marine Corps Main Battle Tank, the M60A1 Rise/Passive Tank, which is still in the inventory.

MARINE CORPS INVENTORY: 72

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-0001; (703)614-1492.

GENERAL CHARACTERISTICS

Primary function:	To counteract and neutralize land mines
Builder:	Israel Military Industries
Cost:	$64,183
Weight:	4.5 tons (4.08 metric tons)
Length:	9.6 feet (2.92 meters)
Width:	14.9 feet (4.54 meters)
Height:	2.5 feet (2.29 meters)
Units:	Four per USMC tank company
Introduction date:	September 1990

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-15 MINE

SERVICE: Marine Corps

DESCRIPTION:
A heavy mine designed for use against heavy tanks.

FEATURES:
The M-15 mine is designed for use against heavy tanks, and its primary fuse requires a minimum force of more than 500 pounds on the pressure plate.

Another fuse is available when M-15s are laid in tactical minefields. This fuse requires a sustained timed pressure load to initiate the firing change. This fuse is used to counter enemy tank-pushed mine-clearing rollers in areas where such countermeasures are a threat.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1-775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Heavy explosive charge for use against heavy tanks
Unit cost:	$184.62
Length:	13 1/8 inches (33.27 cm)
Height:	4 7/8 inches (11.94 cm)
Weight:	Total: 30 pounds (13.62 kg) Charge: 22 pounds (9.99 kg)
Case material:	Steel
Type of charge:	Comp B
Actuation method:	Pressure plate 391-739 pounds (177.5-335.6 kg)
Deployment Method:	Manual
Deployment Rate:	Four per hour per man

M-16A1 (BOUNCING BETTY) MINE

SERVICE: Marine Corps

DESCRIPTION:
Anti-personnel mine, known as the "Bouncing Betty."

Photo unavailable at press time

FEATURES:
The M16A1 anti-personnel mine, commonly known as the "Bouncing Betty," is a bounding fragmentation mine. When activated, it pops out of the ground, rises to approximately six feet (1.83 meters), and detonates.

This mine consists of a combination mine fuse, a propelling charge and a projectile, all contained in a steel sheet case. The fuse screws into the top of the case and extends through the center of the projectile to the bottom of the case, where the charge is located. Pressure of between eight and 20 pounds or pull of between three and 20 pounds on a trip wire attached to the release pin ring of the fuse causes the firing pin or striker to be released.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1-775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Bounding fragmentation anti-personnel mine
Unit cost:	$31.73
Length:	4 inches (10.16 cm)
Height:	7 5/8 inches (19. cm)
Weight:	Total: 7 7/8 pounds (3.5 kg) Charge: 1 pound (.45 kg)
Case material:	Steel
Type of charge:	TNT
Actuation method:	Pressure or trip wire
Deployment method:	Manual
Deployment rate:	8 to 16 per hour per man
Casualty zone:	88.6 foot (27 meter) radius
Danger zone:	600.5 foot (183 meter) radius

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-18 (CLAYMORE) MINE

SERVICE: Marine Corps

DESCRIPTION:
An anti-personnel, anti-vehicle mine.

FEATURES:
The M-18A1 anti-personnel mine is a directional fragmentation mine that is used primarily for defense of bivouac areas and outposts against infiltration. This mine is also effective against thin-skinned vehicles such as jeeps and trucks. The fragments will puncture tires, gas tanks, crankcases, radiators and engine accessories. When detonated, a fan-shaped pattern of spherical steel fragments is projected in a 60-degree horizontal arc covering a casualty radius of 330 feet (100 meters) to a height of 6.56 feet (2 meters). The mine can be detonated by electrical or non-electrical means on command or by trip wire.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Directional fragmentation anti-personnel mine
Unit cost:	$82.23
Length:	8½ inches (21.59 cm)
Width:	1 3/8 inches (3.56 cm)
Height:	3¼ inches (8.13 cm)
Weight:	Total: 3½ pounds (1.59 kg) Charge: 1½ pounds (.68 kg)
Case material:	Plastic
Type of charge:	C-4
Actuation method:	Electrical or non-electrial command or trip wire
Deployment method:	Manual
Deployment rate:	8 to 16 per hour per man
Casualty zone:	330 feet (100 meters) over 60 degrees to the front
Danger zone:	330 feet (100 meters) to the rear

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-19 MINE

SERVICE: Marine Corps

DEFINITION: Anti-tank mine

FEATURES:
The M19 anti-tank mine is intended for use against heavy tanks and other types of heavy tracked and wheeled vehicles. The plastic mine case makes detection difficult. The mine uses a mechanical-pressure type fuse, also constructed of plastic. The mine has an olive drab, box-shaped case with both embossed and yellow markings, making it distinctly different from other mines and easy to identify in the dark. It has two activator fuse wells, one in the side and the other in the bottom. When the safety clip has been removed and the setting knob turned to the armed position, a force of between 350 and 500 pounds on the pressure plate triggers the explosion.

Photo unavailable at press time

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1-775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Heavy blast anti-tank mine
Unit cost:	$138.47
Length:	13 inches (33.02 cm)
Width:	13 inches (33.02 cm)
Height:	3 inches (7.62 cm)
Weight:	Total: 25 pounds (11.35 kg) Charge: 21 pounds (9.53 kg)
Case material:	Plastic
Type of charge:	Composition B
Actuation method:	Pressure plate 350 to 500 pounds (159 to 227 kg)
Deployment Method:	Manual
Deployment Rate:	Four per hour per man

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-21 MINE

SERVICE: Marine Corps

DESCRIPTION:
A high-explosive mine used primarily for destroying tanks and other types of tracked and wheeled vehicles.

FEATURES:
The M-21 mine derives its effectiveness against armor from the energy produced by the high-explosive charge, which propels a concave steel plate upward at a velocity sufficient to penetrate tank belly armor.
The fuse can be activated by contact with any portion of the frontal width of a tank or other vehicle. With the extension rod and adapter removed, the fuse may be used as a pressure-type fuse. The tilting of the extension rod with a minimum horizontal force of 3.75 pounds will initiate the firing chain. When used without the extension rod, a minimum force of 290 pounds on the pressure ring will detonate the mine.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, DC 20380-1775; (703) 614-1492.

Photo unavailable at press time

GENERAL CHARACTERISTICS

Primary function:	Heavy plate anti-tank mine
Unit cost:	$121.45
Length:	9 inches (22.86 cm)
Height:	22 inches (55.88 cm)
Weight:	Total: 17¼ pounds (7.83 km) Charge: 21 pounds (9.53 km)
Case material:	Steel
Type of charge:	Composition H6
Actuation method:	Tilt rod 3¾ pounds at 20 degrees or pressure of 290 pounds
Deployment Method:	Manual
Deployment Rate:	Four per hour per man

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

MK-14 MINE CLEARANCE LAUNCHER

SERVICE: Marine Corps

DESCRIPTION:
A mine-clearing demolition launcher, developed for use from amphibious vehicles during assault landings.

FEATURES:
The MK-154 breaches a lane through a minefield during an amphibious assault. Mounted in an AAVP-7A1 Amphibious Assault Vehicle, it can deploy three linear demolition charges of explosive nylon rope, each 100 meters long, from the water or land to breach a minefield. Blast pressure, however, is not as effective in neutralizing some of the modern, more sophisticated mines. A detection device must be employed in the breached lane.

The launcher is a self-contained electric and hydraulic system. It can house and fire three linear demolition charges using three MK-22 rockets. The blast effect of each charge will clear a path 16 meters wide and 100 meters long in a minefield of single impulse pressure fused mines. The width of the lane and effectiveness of the clearance depends on the mine type and fusing.

BACKGROUND:
The linear demolition charge has been in the U.S. military inventory since the 1960s, and

was ground mounted during the Vietnam War. Later, a trailer was developed so the linear demolition charge could be towed behind a tracked vehicle. This solved the mobility problem for ground operations, but did nothing for amphibious operations. The MK-154 was developed to meet this need.

INVENTORY:
Current inventory is 75 MK-154 kits. Full fielding to all Marine Corps units is expected in early 1993.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-0001; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Land mine clearance system
Unit cost:	$155,000
Contractor:	Diesel Division, General Motors of Canada, Ltd
Host Vehicle:	Assault Amphibious Vehicle (AAVP-7A1)

(more)

Weight:	Fully loaded, with three linear demolition charges and three rockets: 10,690 lb (4,853 kg)
Vehicle Height (with MK-154 installed):	10 feet 8 inches (3.25 meters)

THE UNITED STATES DEPARTMENT OF DEFENSE FACT FILE

M-21 REMOTE SENSING CHEMICAL AGENT AUTOMATIC ALARM

SERVICE: Marine Corps

DESCRIPTION:
A tripod-mounted, portable alarm system to detect chemical agents.

FEATURES:
The Remote Sensing Chemical Agent Automatic Alarm is a two-man portable, infrared sensor that detects nerve and blister agent vapor clouds. The M-21 uses an automatic scanning sensor to detect changes in the infrared energy emitted from remote objects, or from a cloud formed by the agent. It consists of a detector, tripod, remote alarm unit, transit case, power cable assembly, and standard military power source. It can be carried by two people,

The remote warning can be transmitted by wire to the alarm or by a digital signal transmitted via a cable.

On the average, this piece of equipment can be expected to operate for 277 hours before a failure.

Photo unavailable at press time

INVENTORY:
100 are currently on hand and an additional 97 have been funded and will be acquired by FY 97.

POINT OF CONTACT:
Headquarters, U.S. Marine Corps, Division of Public Affairs, Washington, D.C. 20380-1775; (703) 614-1492.

GENERAL CHARACTERISTICS

Primary function:	Long-range chemical agent detection
Unit cost:	$110,000
Length:	20 inches (50.8 cm)
Width:	48 inches (121.92 cm)
Height:	51.5 inches (130.81 cm)
Weight:	66 pounds (29.96 kg)
Power requirements:	120 watts at 21 to 30 volts
Chemical Agent Detection Range:	1.86 to 3.1 miles (3 to 5 km)
Instantaneous Field of View:	Vertical: 1.5 degrees Horizontal: 60 degrees

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