Helicopters

AH-64 Apache

The AH-64 Apache is the United States Army's principal attack helicopter, the successor to the AH-1 Cobra. Two major models of AH-64 Apache are in service in the US Army; AH-64A and AH-64D. An AH-64B variant was designed for naval operation (Marine Corps), but never manufactured. When development of the D model started, the corresponding radar less version initially had the designation AH-64C. However, since the only difference between the C model and the radar-equipped D model was the radar, which could be moved from one aircraft to another, a decision was made to not distinguish between the two versions, irrespective of the presence or absence of the radar. A number of other models have been derived from both AH-64A and AH-64D for export. The British-built Westland WAH-64 (assembled from kits purchased from Boeing) is based on the AH-64D with several improvements.

Built to endure front-line environments, it can operate during the day or night and in adverse weather using the integrated helmet and display sight system. The Apache is also equipped with some of the latest avionics and electronics, such as the Target Acquisition Designation Sight, Pilot Night Vision System (TADS/PNVS), Black Hole passive infrared countermeasures, map-of-the-earth navigation, and GPS.

AH-64 Apache

Model: AH-64D Apache Longbow
Crew: Two; one pilot, and one CPG (co-pilot/gunner).
Armor Rating: 14; vehicle
Military Armor: Grade Three
S.D.C.:

Main Body – 500
Main Rotors – 150
Tail Section – 300

Speeds:

Flight: 227 mph (197 knots/365 km/h) maximum speed ever recorded. Typical maximum speed for the AH-64D and its variants is 182 mph (158 knots/293 km/h). Cruising speed is 165 mph (143 knots/265 km/h).
Range: 300 miles (260 nm/480 km) combat range, or 1,180 miles (1,024 nm/1,900 km) ferry range.
Service Ceiling: 21,000 feet (6,400 m), with 2,500 feet (12.7m/s) per minute rate of climb.

Statistical Data:

Height: 12.7 feet (3.87m).
Length: 58 feet, 4 inches with rotors turning (17.7m).
Width: 48 feet (14.63m; rotor diameter).
Weight: 11,387 lbs (5,165 kg) empty, 18,000 lbs (8,000 kg) fully loaded, and 21,000 lbs (9,525 kg) maximum take off weight.
Cargo: Minimal; maybe enough room for the pilot and gunner to store one or two small personal items.

Weapon Systems:

1. Hughes M230 30mm Chain Gun: The Hughes M230 Chain Gun is a 30 mm automatic cannon developed and manufactured by Hughes (McDonnell Douglas) (Boeing). As the

name implies it is an electrically operated chain gun. The 30mm, M230 Automatic Gun is a component of the Area Weapon System on the AH-64A Apache Helicopter. The M230 is a single barrel, externally powered (3 HP electric motor), electrically fired, chain driven weapon. It is mounted in the lower section of the gun turret on the underside of the Apache Helicopter. It fires 30mm link less ammunition. The M230 Gun has a positive cook-off safety (open bolt clearing) and double rams prevention.

Primary Purpose: Anti-Vehicle
Secondary Purpose: Anti-Personnel
Range: One mile
Damage: 2d4x10 per round
Rate of Fire: Single shot, or up to 625 rounds/minute (single shot, short bursts, long burst, or full melee bursts).
Payload: 1,200 rounds

2. Hydra 70 2.75 inch FFARockets (2): The Hydra 70 rocket is a weapon derived from the 2.75 inch (70 mm) "Folding-Fin Aerial Rocket" (Mk 4/Mk 40 Folding-Fin Aerial Rocket) developed by the US Navy for use as a free-flight aerial rocket in the late 1940s.
   Primary Purpose: Anti-Vehicle
   Secondary Purpose: Anti-Personnel
   Range: One mile, due mostly to the rocket's unguided status.
   Damage: 2d4x10, to a 40 foot radius
   Rate of Fire: One at a time, or volleys of two, three, four, six, eight, ten, twelve, fifteen, seventeen, or nineteen.
   Payload: 19 per launcher.
3. AGM-114L Hellfire Missile Systems (2): The Hellfire II is the optimized version of the laser family of Hellfire missiles. The Longbow Hellfire Modular Missile System is an air-launched, radar aided, inertially guided missile that utilizes millimeter-wave radar technology. Despite the expanded acronym, most versions of the Hellfire missile are not truly "fire-and-forget"—all the laser-guided versions require constant illumination or "painting" of the target from launch to impact. The AGM-114L is a true fire-and-forget weapon: it requires no further guidance after launch and can hit its target without the launcher being in line of sight of the target.
   Primary Purpose: Anti-Vehicle
   Secondary Purpose: Anti-Fortification
   Range: 9,850 yards (9,000 m)
   Damage: 2d6x100, with a 30 foot radius
   Rate of Fire: Single shot, at a rate equal to the gunner's number of attacks per melee.
   Payload: Four per launch system.
   Notes: The AH-64 can be equipped with anti-aircraft missiles, such as the maverick and sidewinder, in place of the Hellfire missiles.

Sensor Systems: The AH-64D is equipped with a ground tracking radar capable of detecting and tracking 256 targets at once. The pilot and co-pilot have access to both passive night vision and thermo-imaging optics, allowing for accurate flight at night and bad weather.
Bonuses: The aircraft is +2 to dodge ground fire, receives a +2 to strike with missiles and rockets, and the 30mm chain gun is +3 to strike.

AH-1 Cobra

The Bell AH-1 Cobra, called the "Huey Cobra," "Cobra," "Sea Cobra," "Super Cobra," "Whiskey Cobra," "Zulu Cobra," or "Snake" (depending on the model), is an attack helicopter, designed by Bell Helicopter Textron. It shares a common engine, transmission and rotor system with the UH-1. It is now fully replaced by the AH-64 Apache in US Army service, but upgraded versions continue to fly with US Marine Corps, the Islamic Republic of Iran Air Force, the Israeli Air Force, the Japan Self Defense Forces and several other users.

The Cobra is simpler to maintain than the Apache, and has a smaller shipboard footprint, two main reasons it remains in service with the Marine Corps. Its main usage is against armored targets. The Cobra's narrow front gives it a defensive advantage making it a harder target to acquire.

AH-1 Cobra

Model: AH-1T Super Cobra (“Whiskey Cobra”)
Crew: Two; one pilot and on e CPG (co-pilot/gunner)
Armor Rating: 13; vehicle
Military Armor: Grade Two
S.D.C.:

Main Body – 400
Main Rotors – 150
Tail Section – 250

Speeds:

Flight: Maximum speed of 120 mph (104 knots/195 km/h).
Range: 315 miles (274 nm/510 km) combat range.
Service Ceiling: 12,200 feet (3,720 m), with 1,620 foot (8.2 m/s) rate of climb.

Statistical Data:

Height: 13 feet, 5 inches (4.1m)
Length: 44 feet, 7 inches (13.6m)
Width: ?? feet, ?? inches (?? m)
Weight: 6,600 lbs (2,993 kg) empty weight, and 10,000 lbs (4,500 kg) maximum takeoff weight.
Cargo: Minimal; maybe enough room for the pilot and gunner to store one or two small personal items.

Weapon Systems:

1. M197 20mm Gatling Gun: The M197 electric cannon is a three-barreled electric Gatling gun developed primarily for use by United States Army helicopter gunships. In the Cobra, the weapon is supplied with a magazine of 700 linked rounds. It has a cyclic rate of fire of 730 rounds per minute (± 50 rounds). Standard practice is to fire the cannon in 100-round bursts (equal to a Long Burst), allowing several minutes of cooling time between bursts. Although the weapon's rotary drive is theoretically quite reliable, its ammunition feed has been anything but: Marine pilots report an alarmingly high jam rate (sometimes greater than 30%). The USMC and the manufacturer are aware of the problem, but no specific fix has been incorporated on the AH-1Z at this time. In the meantime, crews have been trained in techniques intended to minimize the risk of jamming.
   Primary Purpose: Anti-Vehicle
   Secondary Purpose: Anti-Personnel
   Range: One mile

Damage: 1d6x10 per round
Rate of Fire: Single round, short burst, long burst, or full melee bursts.
Payload: 750 rounds

2. Hydra 70 2.75 inch FFARockets (2): The Hydra 70 rocket is a weapon derived from the 2.75 inch (70 mm) "Folding-Fin Aerial Rocket" (Mk 4/Mk 40 Folding-Fin Aerial Rocket) developed by the US Navy for use as a free-flight aerial rocket in the late 1940s.
   Primary Purpose: Anti-Vehicle
   Secondary Purpose: Anti-Personnel
   Range: One mile, due mostly to the rocket's unguided status.
   Damage: 2d4x10, to a 40 foot radius
   Rate of Fire: One at a time, or volleys of two, three, four, six, eight, ten, twelve, fifteen, seventeen, or nineteen.
   Payload: 19 per launcher.
   Note: Cobras can still be outfitted with the older Mk4 rocket pack, which have a payload ranging from 7-19 rockets.
3. M65 TOW (2): The BGM-71 TOW is a US anti-tank missile. *TOW* stands for *Tube-launched, Optically tracked, Wire-guided*. The TOW was first produced in 1970 and is the most widely used anti-tank guided missile in the world. Current production TOWs can penetrate all currently known tank armor. In helicopter applications, the M65 system used by the AH-1 series is the primary system deployed, but the XM26 system was developed for the UH-1, and a system was put into development for the later canceled AH-56 helicopter.
   Primary Purpose: Anti-Vehicle
   Secondary Purpose: Anti-Fortification
   Range: Two miles.
   Damage 2d4x100, with a 30 foot blast radius
   Rate of Fire: One at a time
   Payload: Two per launch system. A total of eight may be carried if no other pylon mounted weaponry is used.

Sensors: The AH-1T Super Cobra does not have an internal radar system, but the pilot and co-pilot/gunner both have access to passive night vision and thermo-imaging systems.
Bonuses: The AH-1T Super Cobra is +1 to dodge ground fire, +2 to strike with rockets and missiles, and +1 to strike with the M197.

Sikorsky UH-60 Black Hawk

The Sikorsky UH-60 Black Hawk is a twin-turbine engine, single rotor, semi-monocoque fuselage, rotary wing helicopter. The medium-lift utility or assault helicopter was the winner of a United States Army competition in the late 1970s to replace the Huey (UH-1) family. Though the two final competing designs were both developed to Army specifications, the UH-60 was selected over an entry from Boeing-

Vertol. It would go on to serve as the basis for variants in service with other branches of the US military.

It can perform a wide array of missions, including the tactical transport of troops, electronic warfare, and aero-medical evacuation: several Black Hawks are even used to transport the President of the United States as Marine One. In air assault operations it can move a squad of 11 combat troops with equipment or reposition the 105 mm M102 howitzer with thirty rounds of 105 mm ammunition, and a six-man crew in a single lift. Alternatively, it can carry 2,600 lb (1,170 kg) of cargo or sling load 9,000 lb (4,050 kg) of cargo. The Black Hawk is equipped with advanced avionics and electronics for increased survivability and capability, such as the Global Positioning System.

Sikorsky UH-60 Black Hawk

Model: UH-60 Black Hawk
Crew: Minimum of two; one pilot and one co-pilot.
Armor Rating: 10; vehicle
Military Armor: Grade one.
S.D.C.:

Main Body – 600
Main Rotor – 150
Tail Section – 300

Speeds:

Flight: Maximum speed of 222 mph (193 knots/357 km/h).
Range: 368 miles (420 nm/592 km) combat range, and 1,380 mile (1,200 nm/2,220 km) ferry range.
Service Ceiling: 19,000 feet (5,790 m), with a 700 ft/min. (3.6 m/s) rate of climb.

Statistical Data:

Height: 16 feet, 10 inches (5.13 m).
Length: 64 feet, 10 inches (19.76 m).
Width: 53 feet, 8 inches (16.36 m) rotor diameter.
Weight: 10,624 lbs (4,819 kg) unloaded, 16,260 lbs (7,375 kg) loaded, and 24,500 lbs (11,113 kg) maximum takeoff weight.
Cargo: Can carry 2,645 lbs of cargo internally, including 14 troops or six stretchers, or 8,000 lbs (HU-60A) or 9,000 lbs (UH-60L) of external cargo.

Weapon Systems:

1. M240 7.62mm Machinegun (2): The M240 is a family of belt-fed medium machine guns firing the 7.62 × 51 mm NATO cartridge. The M240 has been used by the United States armed forces since the end of the 20th century, and is also used by other NATO forces. Despite not being the lightest medium machine gun in service, the M240 is highly regarded for reliability, and its standardization among NATO members is also seen as a major advantage. In 1977 the Army decided to replace the M73 and M219 7.62 mm machine guns, and the M85 .50 cal. In the 1980s, the Marines adopted the M240 and M240E1 for use on vehicles like the LAV-25. The M240C is similar, for co-axial/vehicle mounting.

Primary Purpose: Anti-Personnel
Secondary Purpose: Anti-Vehicle
Range: 2,400 feet
Damage: 5d6 per round
Rate of Fire: Single round, short burst, long burst, or full melee bursts.

Payload: 1,000 rounds
Sensors: None.
Bonuses: None.

Armored Vehicles

M1 Abrams

The **M1 Abrams** main battle tank is the principal combat tank of the United States Army and the United States Marine Corps, with three main versions being deployed starting in 1980: the **M1**, **M1A1**, and **M1A2**. The latest versions of the M1A2 have a new armor and electronics package. It is named after General Creighton Abrams, former Army Chief of Staff and commander of the Army's U.S. 37th Armor Regiment.

The M1 Abrams replaced the M60 Patton in US service, as well as the M48A5. It would, however, serve alongside the M60A3 for over a decade, which had entered service just two years before (1978) the M1. The M1 can be equipped with mine plow and mine roller attachments if needed. The M1 chassis also serves as a basis for the Grizzly combat engineering vehicle and the M104 Wolverine heavy assault bridge.

M1 Abrams

Model: M1A1 Abrams Tank
Crew: 4; commander, gunner, loader, and driver.
Armor Rating: 18; vehicle
Military Armor: Grade Five
S.D.C.: 1,800
Speeds:

Off-Road: 30 mph (48 km/h).
On-Road: 45 mph (72 km/h) governored, or 60 mph (100 km/h) with the governor removed (damage to the drive train, especially the tracks, and an increased risk of injuries to the crew can occur at speeds above 45 mph).
Range: 288 miles (465 km).

Statistical Data:

Height: 8 feet (2.43 m)
Length: 26 feet (7.92 m)
Width: 12 feet (3.64 m)
Weight: 63 tones

Weapon Systems:

1. M256 120mm Smoothbore Gun: The main armament of the M1A1 and M1A2 is the M256 120 mm smoothbore gun, designed by Rheinmetall AG of Germany and manufactured under license in the US by General Dynamics Land Systems Division in their plant in Lima, Ohio. It is the same armamament carried by the German Leopard II, and is swappable between tanks with modification. It fires depleted uranium armor-piercing, fin-stabilized, discarding-sabot long-rod penetrator (APFSDS) rounds like the M829A2 and high explosive anti-tank (HEAT) shaped charge rounds such as the M830, the latest version of which (M830A2) incorporates a sophisticated multi-mode electronic sensing fuse which allows it to be used effectively against both armored vehicles and personnel, or even (at least in theory) low-flying aircraft. The new M1028 120 mm anti-personnel canister cartridge has been brought into service early for use in the aftermath of the 2003 invasion of Iraq. It contains 1,150 ten-millimeter tungsten shot projectiles which spread from the muzzle to produce a shotgun effect lethal out to 500 m. The tungsten balls can be used to clear enemy dismounts, break up hasty ambush sites in urban areas, clear

defiles, stop infantry attacks and counter-attacks, and support friendly infantry assaults by providing cover-by-fire. In addition to this the new MRM-KE (Mid-Range-Munitions Kinetic Energy) is also in development. Essentially a cannon-fired guided round, it has a range of roughly 12 km and uses a KE warhead which is rocket assisted in its final phase of flight.

Primary Purpose: Anti-Vehicle
Secondary Purpose: Anti-Fortification
Range: Varies with type of rounds used; APFSDS and HEAT two miles, M1028 1,800 feet (500 m).
Damage: Varies with the type of rounds used; APFSDS 3d4x100 (but reduce A.R.s by -4), HEAT 2d6x100 w/ a 50 foot radius, and M1028 3d6x10 to all objects in an expanding cone out to 1,800 feet (500 m).
Rate of Fire: Four times per melee round (15 seconds).
Payload: 40 rounds
Note: Some older models will still be equipped with the 105mm Rifled Cannon, more likely on vehicles field by non-U.S. forces. All M1A1s in active service with the United States militaries will be equipped with the 120mm gun.

2. M2 BMG .50 Cal Machinegun: The M2 Machine Gun, or *Browning .50 Caliber Machine Gun* is a heavy machine gun designed just after World War I by John Browning. It is nicknamed *Ma Deuce* by US troops or simply called "fifty-cal" in reference to its caliber. The design has had many specific designations- the official designation for the infantry type is Browning Machine Gun, Heavy Barrel, Cal. .50, M2, HB, Flexible. The Browning .50 machine gun was used extensively as a vehicle weapon and for aircraft armament by the United States from the 1920s to the present day. On the M1, M1IP and M1A1, this gun is on a powered mount and can be fired using a 3× magnification sight known as the CWS, while the vehicle is buttoned up. On the M1A2, M1A2SEP, the M2 is on a flex mount. With the forthcoming TUSK (Tank Urban Survival Kit) add-on kit the M2, or an Mk 19 grenade launcher, can be mounted on the CROWS remote weapons platform. CROWS is similar to the RWS (Remote Weapons System) used on the Stryker family of vehicles.
   Primary Purpose: Anti-Personnel
   Secondary Purpose: Anti-Vehicle
   Range: 3000 feet
   Damage: 1d4x10 per round
   Rate of Fire: Single shot, short bursts, long bursts, or full melee bursts.
   Payload: 700 rounds.
3. M240 7.62mm Machinegun (2; one pitle mounted and one coaxial mounted): The M240 is a family of belt-fed medium machine guns firing the 7.62 × 51 mm NATO cartridge. The M240 has been used by the United States armed forces since the end of the 20th century, and is also used by other NATO forces. Despite not being the lightest medium machine gun in service, the M240 is highly regarded for reliability, and its standardization among NATO members is also seen as a major advantage. In 1977 the Army decided to replace the M73 and M219 7.62 mm machine guns, and the M85 .50 cal. In the 1980s, the Marines adopted the M240 and M240E1 for use on vehicles like the LAV-25. The M240C is similar, for co-axial/vehicle mounting.

Primary Purpose: Anti-Personnel
Secondary Purpose: Anti-Vehicle
Range: 2,400 feet
Damage: 5d6 per round
Rate of Fire: Single round, short burst, long burst, or full melee bursts.
Payload: 1,000 rounds

Sensors: The Abrams is equipped with a ballistic fire control computer that uses data from a variety of sources, including the Gunner's Primary Sight or "GPS" (thermal or daylight), a LRF laser rangefinder, a crosswind sensor, a pendulum static cant sensor, data on the ammunition type, ammunition temperature, and a MRS (Muzzle Reference Sensor) that determines barrel droop due to gravity and barrel temperature. The fire control system uses this data to compute a firing solution for the gunner. The ballistic solution generated ensures a hit percentage greater than 95% at nominal ranges. Either the commander or gunner can fire the main gun.
Bonuses: The M1A1 Abrams can accurately fire while moving (no penalties, and one of the few tanks in the world capable of doing so), and +1 to strike with all automated weapons systems (this includes the 120mm gun, and the .50 Cal on some models).

M2A3/M3A Bradley

Named after WWII General Omar Bradley, the Bradley is an Infantry Fighting Vehicle which is intended to transport infantry into combat, provide fire support for the dismounted troops, and to suppress enemy armored vehicles and tanks. The M2 has a standard crew of three, in addition to six fully equipped soldiers. The M3 is a scout vehicle, and carries a crew of three plus two scouts.

The Bradley AFV was designed to replace the BMP-1, and to serve as both an APC and tank-killer. It was specifically designed to work with the Abrams, whose higher speed caused it to outpace the older M113 APCs. The Bradley chassis has been widely modified, and is the basis for the M270 Multiple Launch Rocket System, the M4 C2V battlefield command post, and the M6 Bradley Linebacker air defense vehicle (replace the TOWs with eight Stinger surface to air missiles).

M2A3/M3A3 Bradley

Model: M2A2/M3A2 Bradley Infantry Fighting Vehicle
Crew: 3; commander, gunner, and driver.
Armor Rating: 14; vehicle
Military Armor: Grade Four
S.D.C.: 800
Speeds:
Driving: Maximum speed is 41mph (66km/h).
Range: 300 miles (483km).
Statistical Data:
Height: 10 feet, 8 inches (2.98m)
Length: 23 feet, 7 inches (6.55m)
Width: 12 feet, 11.5 inches (3.6m)
Weight: 30.4 tons
Weapon Systems:

1. 25mm M242 Chain Gun: The M242 is single barrel cannon with an integrated dual feed mechanism and remote feed selector. When armed with APDS-T depleted uranium rounds it proved highly effective in Desert Storm at knocking out many Iraqi vehicles including several kills on T-55 tanks, and even some reports of kills against Iraqi T-72 tanks at close rang.

   Primary Purpose: Anti-Vehicle
   Secondary Purpose: Anti-Personnel
   Range: One mile
   Damage: 1d6x10+10 per round
   Rate of Fire: Single round, short burst, long burst, or full melee burst.
   Payload: 900 rounds.
2. Tow Anti-Tank Missile: TOW is a US anti-tank missile. *TOW* stands for *Tube-launched, Optically tracked, Wire-guided*. The TOW was first produced in 1970 and is the most widely used anti-tank guided missile in the world. Current production TOWs can penetrate all currently known tank armor.
   Primary Purpose: Anti-Vehicle
   Secondary Purpose: Anti-Fortification
   Range: Two miles.
   Damage: 2d4x100, with a 30 foot blast radius
   Rate of Fire: One at a time
   Payload: Four total, two per launch system.
3. 7.62mm M240C Machinegun: The M240 is a family of belt-fed medium machine guns firing the 7.62 × 51 mm NATO cartridge. The M240 has been used by the United States armed forces since the end of the 20th century, and is also used by other NATO forces. Despite not being the lightest medium machine gun in service, the M240 is highly regarded for reliability, and its standardization among NATO members is also seen as a major advantage. In 1977 the Army decided to replace the M73 and M219 7.62 mm machine guns, and the M85 .50 cal. In the 1980s, the Marines adopted the M240 and M240E1 for use on vehicles like the LAV-25. The M240C is similar, for co-axial/vehicle mounting.
   Primary Purpose: Assault
   Secondary Purpose: Defense
   Range: 2,400 feet

   Damage: 5d6 per round
   Rate of Fire: Single round, short burst, long burst, or full melee burst.
   Payload: 2,200 rounds

Sensors: Since 2000 the A3 upgrade has made the Bradley IFV/CFV totally digital, and upgraded/improved all existing electronics systems. These improvements include a laser rangefinder, tactical navigation system (with Incorporated Precision Lightweight GPS Receiver), Digital Compass System (DCS), Force XXI Battle Command Brigade and Below (FBCB2) Battlefield Command Information System, thermal imaging system, and

passive night vision system.
Bonuses: The Bradley can fire accurately while moving (no penalties), and is +1 to strike with the 25mm cannon and +3 to strike with the TOW.

Artillery

M102

The M102 is a light-towed 105mm howitzer first used by the United States Army during the Vietnam War and in the subsequent Desert Shield and Desert Storm. It fires a variety of conventional munitions, and can be dropped by parachute or transported by utility helicopters. The M102 also happens to be the largest weapon aboard the AC-130 Spectra.

The M102 is no longer in active service with the United States Army, recently replaced by the M119, though it is still in use with many National Guard and Reserve units. It is only used by the United States Marine Corps for training and salute firing.

M102

Caliber: 105mm
Crew: 8
Armor Rating: 8; vehicle
S.D.C.: 300
Statistical Data:

Height: 5.2 feet (1.6m)
Width: 6.4 feet (2m)
Length: 17.1 feet (5.2m)
Weight: 3200 lbs (1454.5kg)

Damages:

High Explosive (M760 HE): 2d4x100 with a 100 foot radius and a range 9 miles.
High Explosive Rocket Assisted (M913 HERA): 2d4x100 with a 100 foot radius, and a range of 12 miles.

Rate of Fire: Two rounds per melee maximum, or a sustained rate of one round per melee.

M119 A1/A2

The M119A1/A2 Howitzer is a lightweight gun used by the United States Army, and is based off of the L118/L119 Light Gun employed by the British. Like the M102 it replaced the M119 can be transported by helicopter and parachute. It is currently fielded by active United States Army light division, as well as a few National Guard field artillery battalions. The M119 is the original copy of the L119 originally fielded by the British military, the M119A1 consisted of minor improvements to the fire control and maintenance, and the M119A2 incorporates improved sighting package including a telescope (M90A3) and panoramic telescope (M137A2).
Caliber: 105mm

Crew: 7
Armor Rating: 8; vehicle
S.D.C.: 350
Statistical Data:
Height: 4.5 feet (1.37m) folded, and 7.25 feet (2.21m) with tube locked.
Width: 5.8 feet (1.78m)
Length: 16 feet (4.87m) folded, and 20.75 feet (6.32m) with tube locked.
Weight: 4520 lbs (2050.3kg)
Damages: See *M102* above.
Rate of Fire: Twice per melee maximum, or sustained rate of once per melee.

M198 Howitzer

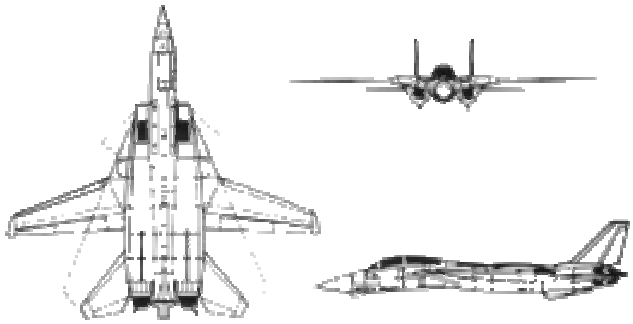
The M198 howitzer is a 155mm towed artillery piece that can be dropped by parachute. It was widely used by both the United States Army and the United States Marine Corps, though it is currently being phased out and replaced by the M777 ultra lightweight howitzer. The M198 is also used extensively by the Australian Army.

M198 Howitzer

Caliber: 155mm
Crew: 9
Armor Rating: 8; vehicle
S.D.C.: 400
Statistical Data:
Height: 9.5 feet (2.9m)
Width: 9.1 feet (2.8m)
Length: 40.5 feet (12.3m) folded/towed position, and 36.1 (11m) feet in firing position.
Weight: 15772 lbs (7154kg)
Damages:
High Explosive (M107 HE): 3d6x100 with a blast radius of 360 feet (100m), and a range of 14 miles.
High Explosive Rocket Assisted: Increase range to 18.6 miles.
Illumination: The illumination rounds are often used in conjunction with HE rounds. The flare last 120 seconds (two minutes, or eight melee rounds), and can illuminate a 1000m area. Range depends on whether the round is rocket assisted or not.
DPICM (Dual-Purpose Improved Conventional Munitions): Shell that releases 88 bomlets above a target. Man-sized targets take 3d6x10 damage, car-sized targets take 1d6x100 damage, truck/tank-sized targets take 3d4x100 damage, and stationary and large objects like houses take 3d6x100 damage. Range depends on whether the round is rocket assisted or not.
ADAMS: Releases anti-personnel mines. Each mine does 4d6x10 damage, and are designed to self-destruct after a pre-determined period of time. Range depends on whether the round is rocket assisted or not.
RAAMS: Releases anti-armor mines. Each mine does 2d4x100 damage, and are designed to self-destruct after a pre-determined period of time. Range depends on whether the round is rocket assisted or not.
SADARM: Experimental smart munitions which is fired in the general direction of an enemy vehicle, and then guides itself to the nearest target. It has the same range and damage as the HERA above.
Rate of Fire: Once per melee round maximum, or a sustained rate of once every other melee round.

Fighter Jets

F-14 Tomcat



Developed by Grumman, the F-14 Tomcat is a supersonic, twin-engine, two-seat, variable geometry wing aircraft, that was used by the U.S. Navy as its primary air superiority fight, fleet defense interceptor, tactical reconnaissance platform, and in later models as a precision bomber. It entered service in 1972, and its design integrated may of the lessons learned by the U.S. Navy during the air combat over Vietnam, and served in U.S. forces until 2006.

While it is no longer used by the U.S., several dozen were sold to Iran in 1976 before the Shah was over thrown. They still serve prominently in the Iranian Air Force, though for how much longer is anyone's guess since the United States has refused to sell them parts and munitions since 1979 (except for a brief period known as the Iran Contra Scandal).

F-14 Tomcat

Model: F-14D Super Tomcat (there are almost dozens of models/variation, but for simplicity I've stuck with the Super Tomcat)
Crew: Two; one pilot and one Radar Intercept Officer (RIO for short).
Armor Rating: 10; vehicle.
Military Armor: Grade Two
S.D.C.: 700
Speeds:

Flight: Mach 2.34 (1544 mph/2485 km/h) at high altitude
Range: 576 miles (500 nm/927 km) combat range, and 2000 miles (1600 nm/3220 km) ferry range.
Rate of Climb: 45,000 feet per minute.

Statistical Data:

Height: 16 feet (4.8m)
Length: 61 feet, 9 inches (18.6m)
Width: 64 feet (19m) with wing spread, or 38 feet (11.4m) with wings swept.
Weight: 42,000 lbs (19,000 kg) empty, 61,000 lbs (28,000 kg) loaded, and has a maximum take off weight of 72,900 lbs (32,800 kg).

Weapon Systems:

1. M61 Vulcan 20mm Gatling Gun: The M61 Vulcan is a hydraulically driven, six-barreled, air-cooled, electrically fired Gatling style cannon with an extremely high rate of fire. It was developed by GE's General Electric Armament Division in 1946 and originally designated the T-171. It is capable of firing 100 rounds per second, and because of its multiple barrel configurations it has a jam rate less than 1 in 10,000.
   Primary Purpose: Anti-Aircraft
   Secondary Purpose: Anti-Armor

Range: One mile (4000'-6000' maximum with any accuracy)
Damage: 1d6x10 per round.
Rate of Fire: Single shot, or burst. **Note:** Due to its extremely high rate of fire the equivalent of a long burst only takes one melee action and the equivalent to a full melee burst can be done with two actions. A typical short burst uses between 70-75 rounds.
Payload: Unable to confirm, my best guess would be roughly 800-1000 rounds.

2. AIM-9 Sidewinder: The Sidewinder was the first truly effective air-to-air missile, and its designed has been widely imitated and copied. It derives it name from the fact that it is a heat seeker and also because of it peculiar snake-like path of flight of the earlier versions of the missile.
   Primary Purpose: Anti-Aircraft
   Secondary Purpose: Defense
   Range: .62-11.3 miles (1-18 km).
   Damage: 1d4x100 per missile.
   Rate of Fire: Usually one at a time, but may be fired in volleys of two.
   Payload: Varies; usually only two, but may carry up to four but this will limit the amount of other missiles it may carry.
3. AIM-54 Phoenix: The Phoenix is a radar-guided, long-range missile carried in cluster of up to six, and was used exclusively by the F-14 Tomcat (both U.S. Navy and Iran's Islamic Guard). Since it was the lone survivor of the Falcon Missile Program it was never adopted by other countries (other than Iran), or even by other branches of the U.S. military.
   Primary Purpose: Long Range Anti-Aircraft
   Secondary Purpose: Defense
   Range: 49.8-92 miles (48.3-80 nm)
   Damage: 1d6x100.
   Rate of Fire: Normally one at a time, but with the Tomcat's RIO and advanced radar system up to six may be fired at multiple targets, though only one missile per target.
   Payload: Varies; maximum was six missiles, but standard could be considered two.
4. AIM-7 Sparrow: The Sparrow is a medium-range (semi)active radar homing missile. It was widely used by the U.S. Air Force, U.S. Navy, the USMC, and adopted by NATO, making it one of the most popular medium-range missiles produced. It is carried on board many navel vessels as an aircraft deterrent.
   Primary Purpose: Medium-Ranged Anti-Aircraft.
   Secondary Purpose: Defense.
   Range: 44 mile (70 km) maximum.
   Damage: 1d6x100
   Rate of Fire: Single missile.
   Payload: Varies; the most that was carried was four, and this could be considered standard combat load.

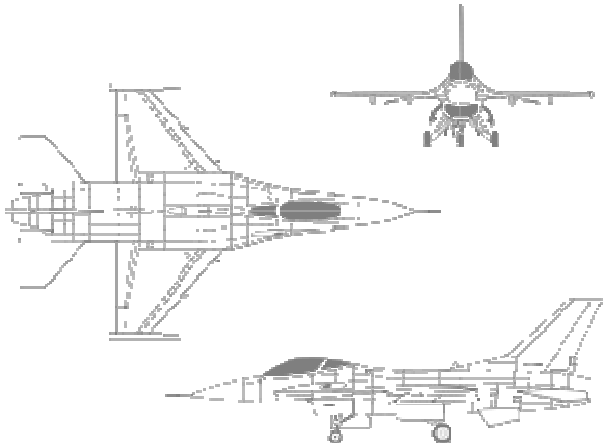
Missile Note: The payloads I've suggested give the Tomcat AIM-9 x2, AIM-54 x2, and AIM-7 x4. Other combination exist:

- AIM-9 x2, and AIM-54 x6.
- AIM-9 x2, AIM-54x4, and AIM-7 x2.
- AIM-9 x2, and AIM-7 x6.
- AIM-9 x4, and AIM-54 x4.
- AIM-9 x4, and AIM-7 x4.

Sensors: The Tomcat is equipped with a IRST (Infra-Red Search & Track; detect thermal emissions up to 93. miles/15 km), DFCS (Digital Flight Control System), IFF (Identify Friend or Foe), and AN/APG-71 radar (Track 24 airborne targets at up to 230 miles or 460 miles if two or more F-14D are data-linked, and lock-on to a maximum of six of those targets at once allowing it

to attack six different targets with missiles equipped with seeker heads, primarily the AIM-54 Phoenix).
Bonuses: The F-14D Super Tomcat is +3 to strike with missiles in addition to the normal bonuses for the Weapon Systems skill, +1 to strike with the 20mm cannon in addition to the normal bonuses for the Weapon Systems skill, +2 dodge at top speeds (Mach One or greater), and +4 to dodge at combat/dog fighting speeds.

F-16 Fighting Falcon



The F-16 Fighting Falcon (sometimes referred to as a "Viper", after the *Battlestar Galactica* TV series) is a United States developed multi-role fighter. It was originally a lightweight fighter that evolved into a successful multi-role aircraft. It has been exported to over 24 countries (including Egypt, Greece, Jordan, Israel, Norway, Singapore, Republic of China/Taiwan, South Korea, Turkey, and United Arab Emirates), and is the largest fighter program ever by a Western nation with over 4,000 of the aircraft having been built since 1976. While it is no longer produced for the U.S. Air Force, it is still manufactured for the export market.

The Falcon was designed to be a dogfighter, and has a bubble canopy for better visibility, a side-mounted control stick for ease of control when under high g-forces, a reclined seat meant to reduce the effects of g-forces on the pilot, and was the first fighter deliberately built to sustain 9g turns. It also has a thrust-to-weight ratio greater than one, giving it impressive acceleration.

F-16 Fighting Falcon

Model:
Crew: One
Armor Rating: 10; vehicle
Military Armor: Grade Two
S.D.C.: 400
Speeds:

Flight: Mach 1.2 at sea level, and 2+ at altitude.
Range: Combat range is 340 miles (295nm/550km), with six 1000 lbs bombs. Ferry range is 3200 miles (2800nm/4800km)
Rate of Climb: 50,000 ft/min (254 m/s).

Statistical Data:

Height: 16 feet (4.8m).
Length: 49 feet, 5 inches (14.8m).
Width: 32 feet, 8 inches (9.8m).
Weight: Empty weight of 18,238 lbs (8272 kg), loaded weight 26,463 lbs (12,003 kg), and a maximum takeoff weight of 42,300 lbs (16,875 kg).

Weapon Systems:

1. M61 Vulcan 20mm Gatling Gun: The M61 Vulcan is a hydraulically driven, six-barreled, air-cooled, electrically fired Gatling style cannon with an extremely high rate of fire. It was developed by GE's General Electric Armament Division in 1946 and originally designated the T-171. It is capable of firing 100 rounds per second, and

because of its multiple barrel configurations it has a jam rate less than 1 in 10,000.
Primary Purpose: Anti-Aircraft
Secondary Purpose: Anti-Armor
Range: One mile (4000'-6000' maximum with any accuracy)
Damage: 1d6x10 per round.
Rate of Fire: Single shot, or burst. **Note:** Due to its extremely high rate of fire the equivalent of a long burst only takes one melee action and the equivalent to a full melee burst can be done with two actions. A typical short burst uses between 70-75 rounds.
Payload: 511 rounds.

2. Air-to-Air Missiles: Thanks to its duty as a multi-role fighter/bomber the Fighting Falcon carries several varieties of munitions, including several different types of air superiority missiles.
   Primary Purpose: Anti-Aircraft
   Secondary Purpose: Defense
   Range: Varies with missile type; AIM-9 Sidewinder .62-11.3 miles (1-18 km), the AIM-120 AMRAAM 20+ miles (17.38nm/32.2km), and the Python-4 9.3 miles (15km).
   Damage: Varies with missile type; AIM-9 Sidewinder 1d4x100, AIM-120 AMRAAM 1d6x100, and the Python-4 1d4x100.
   Rate of Fire: Single shot. **Note:** The AIM-9 Sidewinder is a heat seeking missile, while the AIM-120 and the Python-4 are radar guided missiles. Also note that the AIM-120 is a true fire and forget weapon, while the Python-4 has very limited fire and forget capabilities which means that the launching aircraft must maintain a radar lock on the target aircraft.
   Payload: The Fighting Falcon can carry a maximum of six air-to-air missiles.
3. Air-to-Ground Missiles: Thanks to its duty as a multi-role fighter/bomber the Fighting Falcon carries several varieties of munitions, including several different types of ground attack missiles.
   Primary Purpose: Anti-Armor
   Secondary Purpose: Anti-Structure
   Range: Varies with missile type; AGM-65 Maverick 17 miles (15nm/27km), or the AGM-88 HARM (High-speed Anti-Radiation Missile) 80 miles (57nm/90km).
   Damage: Varies with missile type; the AGM-65 Maverick 2d4x100, or the AGM-88 2d6x100.
   Rate of Fire: Single shot.
   Payload: Six AMG-65 Mavericks or four AGM-88 HARMs.
4. Anti-Ship Missiles/AGM-119 Penguin: Thanks to its duty as a multi-role fighter/bomber the Fighting Falcon carries several varieties of munitions, including one type of anti-ship missile.
   Primary Purpose: Anti-Ship
   Secondary Purpose:
   Range: MK2 (34+km), and MK3 (55+km).
   Damage: 2d6x100 for the MK2, and 3d4x100 for the MK3.
   Rate of Fire: Single Shot.
   Payload: The Fighting Falcon can carry up to for of either the MK2 or MK3.

Sensors:
Bonuses:

Lockheed AC-130

AC-130 Spectre/Spooky

Model: AC-130A Project Gunship II, AC-130E Pave Spectre, AC-130E Pave Aegis, AC-130H Pave Spectre II, and AC-130U "Spooky" Gunship.
Crew: 13; 5 officers (pilot, co-pilot, fire control, and electronic warfare), and 8 enlisted (flight engineer, TV operator, infrared detection operator, loadmaster, and four aerial gunners).

Armor Rating: 11; vehicle
Military Armor: Grade Two
S.D.C.: 2000
Speeds:
Flight: 300 mph (480 km/h or 260 knots).
Range: 2530 miles (480 km/2200 nm).
Service Ceiling: 30,000 feet.
Statistical Data:
Height: 38 feet, six inches.
Length: 97 feet, nine inches.
Wing Span: 132 feet, seven inches.
Weight: Maximum takeoff weight of 155,000 lbs.
Weapon Systems:

1. AC-130A Project Gunship II:
    a. 7.62mm GAU-2/A Mini-Guns (x4): The GUA-2/A is a six-barreled mini-gun that fires 7.62mm rounds, and is almost identical to he U.S. Army's XM134/M134 mini-gun.
    Primary Purpose: Anti-Personnel.
    Secondary Purpose: Suppression Fire.
    Range: 4000 feet.
    Damage: 5d6 per round.
    Rate of Fire: Single shot, or burst. **Note:** Due to its extremely high rate of fire the equivalent of a long burst only takes one melee action and the equivalent to a full melee burst can be done with two actions.
    Payload:
    b. M61 Vulcan 20mm Gatling Gun (x4): The M61 Vulcan is a hydraulically driven, six-barreled, air-cooled, electrically fired Gatling style cannon with an extremely high rate of fire. It was developed by GE's General Electric Armament Division in 1946 and originally designated the T-171. It is capable of firing 100 rounds per second, and because of its multiple barrel configurations it has a jam rate less than 1 in 10,000.
    Primary Purpose: Anti-Vehicle.
    Secondary Purpose: Anti-Armor.
    Range: One mile (4000'-6000' maximum with any accuracy)
    Damage: 1d6x10 per round.
    Rate of Fire: Single shot, or burst. **Note:** Due to its extremely high rate of fire the equivalent of a long burst only takes one melee action and the equivalent to a full melee burst can be done with two actions. A typical short burst uses between 70-75 rounds.
    Payload:
2. AC-130E Pave Aegis or AC-130H Pave Spectre II:
    a. M61 Vulcan 20mm Gatling Gun: The M61 Vulcan is a hydraulically driven, six-barreled, air-cooled, electrically fired Gatling style cannon with an extremely high rate of fire. It was developed by GE's General Electric Armament Division in 1946 and originally designated the T-171. It is capable of firing 100 rounds per second, and because of its multiple barrel configurations it has a jam rate less than 1 in 10,000.
    Primary Purpose: Anti-Vehicle.
    Secondary Purpose: Anti-Armor.
    Range: One mile (4000'-6000' maximum with any accuracy)
    Damage: 1d6x10 per round.
    Rate of Fire: Single shot, or burst. **Note:** Due to its extremely high rate of fire the equivalent of a long burst only takes one melee action and the equivalent to a full melee burst can be done with two actions. A typical short burst uses between 70-75 rounds.
    Payload:

b. 40mm L/60 Bofors Cannons (x2): The L/60 Bofors was originally developed in the early 1900s as an anti-aircraft weapon, though the proliferation of jet aircraft would eventually see it removed from such service. It can still be found on several naval vessels, especially in the Canadian and French Navies, and as anti-armor stationary guns.
Primary Purpose: Anti-Armor.
Secondary Purpose: Anti-Structure.
Range: One mile.
Damage: 3d4x10 per round
Rate of Fire: 80-140 rounds per minute; Aimed, burst, or wild.
Payload:

c. 105mm M102 Howitzer (x1): A modified version of the light artillery gun that until recently was used by the U.S. Marine Corp. and U.S. Army.
Primary Purpose: Anti-Armor.
Secondary Purpose: Anti-Structure.
Range: Varies with type of ammo used, most common is the High Explosive (M760 HE) with a range of nine miles when used with a stationary gun.
Damage: Varies with type of round used, most common is High Explosive (M760 HE) 2d4x100 with a 100 foot radius.
Rate of Fire: Once every other melee round.
Payload:

3. AC-140U "Spooky" Gunship:
   a. 25mm GAU-12/U Equalizer Gatling Gun (x1): The Equalizer is a five-barrel gatling gun predominantly used by the United States and the United Kingdom.
   Primary Purpose: Anti-Vehicle.
   Secondary Purpose: Anti-Armor.
   Range: One mile.
   Damage: 1d6x10+10 per round.
   Rate of Fire: 3600-4200 rounds per minute; Aimed, burst, or wild. **Note:** Due to its extremely high rate of fire the equivalent of a long burst only takes one melee action and the equivalent to a full melee burst can be done with two actions.
   Payload:

   b. 40mm L/60 Bofors Cannon (x1): The L/60 Bofors was originally developed in the early 1900s as an anti-aircraft weapon, though the proliferation of jet aircraft would eventually see it removed from such service. It can still be found on several naval vessels, especially in the Canadian and French Navies, and as anti-armor stationary guns.
   Primary Purpose: Anti-Armor.
   Secondary Purpose: Anti-Structure.
   Range: One mile.
   Damage: 3d4x10 per round.
   Rate of Fire: 80-140 rounds per minute; Aimed, burst, or wild.
   Payload:

   c. 105mm M102 Howitzer (x1): A modified version of the light artillery gun that until recently was used by the U.S. Marine Corp. and U.S. Army.
   Primary Purpose: Anti-Armor.
   Secondary Purpose: Anti-Structure.
   Range: Varies with type of ammo used, most common is the High Explosive (M760 HE) with a range of nine miles when used with a stationary gun.
   Damage: Varies with type of round used, most common is High Explosive (M760 HE) 2d4x100 with a 100 foot radius.
   Rate of Fire: Once every other melee round.
   Payload:

   Or

a. 30mm Bushmaster II (x2): A derivative of the M242 Bushmaster cannon, it uses 70% of the same parts, the primary difference being the caliber (30mm vs. 25mm).
   Primary Purpose: Anti-Vehicle.
   Secondary Purpose: Anti-Armor.
   Range: One mile.
   Damage: 2d4x10 per round.
   Rate of Fire: 250 rounds per minute; Aimed, burst, or wild.
   Payload:
b. 105mm M102 Howitzer (x1): A modified version of the light artillery gun that until recently was used by the U.S. Marine Corp. and U.S. Army.
   Primary Purpose: Anti-Armor.
   Secondary Purpose: Anti-Structure.
   Range: Varies with type of ammo used, most common is the High Explosive (M760 HE) with a range of nine miles when used with a stationary gun.
   Damage: Varies with type of round used, most common is High Explosive (M760 HE) 2d4x100 with a 100 foot radius.
   Rate of Fire: Once per melee round.
   Payload: