COMBAT MISSION
COLD WAR

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◼ INSTALLATION & LICENSING

◼ Installation from Disk

In order to install the game, insert the game disc into the DVD drive.

(PC) Combat Mission's installer comes in a compressed RAR format. Before installing the game, extract (or "unzip") the files to a single, empty folder. Run the "setup.exe" file within this folder and follow the onscreen instructions.

(Mac) For the Mac version, simply open the disc icon and copy the game application into a place on your hard drive (for example, the "Applications" folder).

◼ Installation for Download Version

After you have successfully downloaded the Combat Mission: Cold War setup file, extract (or "unzip") the files to a single, empty folder. Run the "setup.exe" file within this folder and follow the onscreen instructions.

◼ License Overview

Combat Mission: Cold War is protected by an online activation system that helps us restrict the illegal distribution of the software with minimal annoyance and intrusion for the legitimate customer.

Note: only the Battlefront.com version uses our online activation system. If you have purchased your game elsewhere (e.g. in another storefront such as Steam), then you probably have a retail version of the game, which does NOT use our online activation system.

◼ How to Find Your License Key

If you purchased Combat Mission through the Battlefront storefront, you will find your license key in your online account at www.battlefront.com. After logging in, click on the "My Orders" link for a summary of all orders you have made through Battlefront.com. Click on the "Order Number" to show the details of the order, including the license key. If you forgot your login, click on "Forgot Password" on the login screen. Enter your User Name and email address and a temporary password will be emailed to you. It is recommended that once you've logged back into your account you immediately change the password.

◼ Activation / Licensing

When you first run Combat Mission: Cold War, you will be prompted to activate your copy after the initial install. In most cases all you need to do is:

a) Make sure the computer on which you have installed the game has an active connection to the internet.

b) Choose Online Activation from the dialog window.

c) Enter your license key into the correct field.

d) Hit the Activate button and wait a few seconds while your license authorizes.

If you wish to install the game on a computer which has no internet connection, you must perform what is called a "Manual License Request". Off-line licensing is also a good workaround for online computers which experience problems with firewall, router or proxy settings which interfere with establishing an internet connection to the activation servers

(PC/Mac) Use the Activate New Products utility on your desktop:

a) Click on the Manual Activation button.

b) Enter your license key. Write down the authorization request code presented to you.

c) On a computer with an internet connection, go to https://battlefront.mojohelpdesk.com/ and open a Help Desk ticket and send the license key, authorization code and game title that you are activating.

d) A new code will be sent to you. Enter this code in the final field to complete the activation.

■ Additional Activations

Our End User License Agreement allows you to have the game activated on two PCs. Our online activation system enforces this limit, but will allow you two additional activations without asking questions (so called "Overflow Activations"). These Overflow Activations are meant to be used when you switch to a new PC and would like to continue playing the game on the new PC.

Note: there is no way to "unlicense" a previously activated copy on a computer.

In addition to the previously described four activations, you can add one additional activation to your key every 365 days. To do this, visit http://www.battlefront.com.mojohelpdesk.com. Click on "+ new ticket" and open a Help Desk ticket to request an additional activation. Include your license key in the request.

If your key is eligible for an additional activation (i.e. if you have not previously requested an additional activation within the past 365 days), then you'll be notified of your new activation and it will be automatically added to your key, so you can use it immediately.

Should you ever need an additional activation more than once during a 365 day period, you can always contact our License Activation Support staff for help (see below).

■ License Activation Support

Battlefront.com prides itself on customer service, and the implementation of our online licensing system is a part of this. Please check out our Knowledgebase section for more detailed information on how our online activation system works:

> https://battlefront.mojohelpdesk.com/

If you ever need specific assistance, do not hesitate to email us with a description of your problem. We usually respond within 1 working day.

■ Help Desk Link

https://battlefront.mojohelpdesk.com/

■ INTRODUCTION

Combat Mission Cold War (CMCW) was designed, unlike the previous Combat Mission games, to be a sandbox capable of recreating any potential action between the US and the Soviet Armies from 1979 to 1982. This is an exciting era, even though it never went hot. The fact that NATO and the Warsaw pact faced off on opposite sides for decades and trained and equipped themselves to combat each other impacted many, including many who served during this time period and many who served after.

The doctrines that were developed to meet the Warsaw Pact or NATO are famous: AirLand Battle, Active Defense, Deep Strike, among others. The equipment developed and fielded during the Cold War became the foundation for the armies that would go to war in Kuwait and Iraq shortly after the Berlin Wall fell.

Long wished for by many, Combat Mission: Cold War is now a reality!

■ CAMPAIGNS

There is no single "backstory" that could cover all of the potential flashpoint scenarios. A campaign backstory is provided to provide context for the US and Soviet campaigns; however, scenario designers were free to create their own stories outside of this in development of the stand-alone scenarios.

■ Campaigns Backstory: Road to War

29 September 1973: President Nixon's personal secretary is at her desk transcribing the tape recordings of 20 Jun 1972 between the president and the White House chief of staff. Her phone suddenly rings, and she reaches for the stop button to answer the call; she catches herself just before she accidently hits the 'record' button on the Uher Universal 5000 machine. The pause and record button being close to each other has almost tripped her up before. Once the call is done, she returns to transcribing the tapes. The 18-and-a-half minutes of recorded conversation would not be lost to history. The result of those 18-and-a-half minutes seeing daylight would lead directly to the third 'hot' war in Europe during the 20th century.

11 April 1974: The House Judiciary Committee, driven by a grand jury indictment surrounding the Watergate break-ins, subpoenas the White House tapes as part of their follow-up investigation of the president. The explosive evidence gathered now includes an 18-and-a-half-minute conversation that provides a key lead in the public discovery and positive proof of Nixon's role in meddling with South Vietnam's government and the Vietnam War peace process prior to the 1968 presidential election.

As a result of the impeachment proceedings Richard Nixon resigns on 9 August 1974. However, Nixon's contact with the government of South Vietnam prior to the 1968 election also comes to light. Personal and party connections aside, Ford cannot pardon Nixon in this climate. Indictment, arrest and very painful trial plays out publicly.

In April of 1976, early on in Ford's term and in the midst of US political chaos, the "Uelzen Incident" erupts in Northern Germany. NATO is running a series of exercises that appear aggressive to the Soviets and in response they place their units in the region on highest levels readiness. Human error results in a Soviet Division of the 2nd Guards Tank Army coming "off the leash" and advancing across the Elbe into the British 11th Armoured Brigade in Northern Germany east of Bergen. The Soviet Division is able to punch a 50km hole into

the NATO hastily established defensive line threatening the Bremen-Hanover corridor. Fortunately, rapid diplomacy and cooler heads manage to avoid escalation of the incident and the Division is halted and withdrawn while the Soviet Union drafts significant concessions for the damage that occurred.

In August of 1976, in the spirit of post-crisis reparations, the Helsinki Accords meetings are even more conciliatory. However, it does not pass the notice of the Soviets that a limited conventional incursion did not automatically lead to all out nuclear war on the part of NATO and, that once tested, the NATO defensive lines in Europe appear more fragile than military estimates had concluded previously.

Due in large part to a serious desire for political change in the face of one disaster after another, in late 1976, the Republican party makes a decision to not nominate a sitting president for the upcoming re-election—only the sixth time in US history—and President Ford steps aside for new leadership. The new Republican president goes on to defeat Jimmy Carter in 1977. The new Republican president is more progressive: first he takes a more hawkish approach to the Soviets citing their desire to create a global communist movement; secondly, he focuses on globalization and trade as a primary method to outstrip the lagging Soviet communist system and rejuvenate a lagging US economy. He also ramps up funding for the Strategic Defence Initiative, which terrifies the relatively low-technology capabilities of the Soviets leadership. If the US can blunt the doctrine of nuclear deterrence, the Soviet Union would be left critically vulnerable. Perhaps things would have normalized given time but then Afghanistan happens...

In April of 1977, Mohammed Akbar Khaiba, a leader within the pro-communist Peoples Democratic Party of Afghanistan, is assassinated by government agents under the order of the Afghan president. This political act would set off a chain of events—coups and counter coups—that would eventually drag the Soviet Union into a decade long war within the troubled region. Simultaneously the Soviets completely mis-read the motivations and will of the new "inexperienced" US president, still early in his first term. The new US president authorizes aggressive covert action in Afghanistan along with SF advisors for the burgeoning mujahedeen resistance movement. The Soviets start heavy bleeding early within the escalating conflict and this war rattles an already brittle and failing communist system rife with institutionalized corruption.

By 1982, the Soviets have been hemorrhaging in Afghanistan for almost 5 years while the US continues to pour in support for its opposition. Internally the shocks that happen over this period make them among the most important 5 years in the 20th century. The second generation of communist leaders are still alive and in power. Yuri Andropov assumes office in Spring of 1982 after the death of Leonid Brezhnev. Surrounded by very conservative Soviet leadership, the idea of glasnost or détente with the West is completely foreign particularly given the US-funded resistance in the Soviet sphere, Andropov is well set up to take hard lines. This generations of communist leadership, when facing internal collapse, are willing to bet it all on a full-scale conventional attack (they remember the "Uelzen Incident" in 1976). Running out of time, communism must expand to survive. In desperation, an old plan of Seven Days to the Rhine River and another five days to Paris is re-introduced, yet now with the use of tactical nuclear/chemical weapons tightly controlled to avoid at all cost an escalating nuclear exchange. Soviet leadership thinking was to get inside the major European power's urban capitals, hold them hostage and force the US to hesitate. Such a hesitation would see the end of NATO, isolation of North America and the possibility for Soviet power to expand… theoretically.

In the summer of 1982, the entire Soviet plan depends on surprise and speed, the Soviets must tear through the existing defensive NATO formations before REFORGER units can be deployed and before Reserves in the western European powers can be fully mobilized. The Soviets are relying on shock and mass of armor to avoid a nuclear/chemical exchange. The thinking is that despite the hardline demonstrated by the US presidential administration— now into its second term-- towards both Afghanistan and modernization of the US military, weak resolve by the people of the US "reveling in decadence" will stall US response. That hesitation is critical as it delays full nuclear exchange ("Do Americans in New York want to die for Paris?"), limited nuclear/chemical warfare is 'acceptable' with the European powers. However, even that eventuality may be avoided if the Soviets can advance quickly enough.

Finally, a NATO exercise named Summer Forge 1982 put in place the final pieces. An annual NATO exercise of roughly 100,000 troops, including 16,000 REFORGER personnel from the US provided the perfect cover to increase Soviet troop readiness and levels under the cover of a counter-exercise. Further even though NATO troops would be mobilized and on exercise, Soviet spies had determined this would be the time that those troops would be most vulnerable. Ironically, the middle of a NATO exercise designed to enhance readiness for war offered an opportunity as the troops would suffer immense initial confusion between what was "real" and what was "exercise. The Soviet Troops, however, would not be "on exercise", they would be issued live rounds and plans for a real invasion.

On 13 July 1982, after weeks of deliberate and careful positioning under cover of a training exercise Soviet troops in eastern Germany and Czechoslovakia receive final orders confirming the largest conventional surprise attack on land since Barbarossa…however this time the attack would be westward. In later decades, generations of people around the world would remember 13 July as the day the world stood on the brink of apocalypse.

■ United States Campaign – "The Lions of Cantigny"

The US Campaign is set along the southern strategic corridor of the Fulda Gap, focusing on highway 66 between Fulda and Hanau. The campaign follows the 2nd Bn 28th Infantry Regiment Task Force (Dragon) reinforced by armor from the 69th Armored Regiment. This task force is under command of the 1st Brigade, 8th Infantry Division and the campaign unfolds between 15-19 July 1982. The campaign enemy forces are from the 57th Motor Rifle Division with the 241st MRR in the initial battles, followed by the 57th Tank Regiment in the later battles.

The US Campaign is branching based on players performance and is designed to be played after the National Training Center Campaign in the series.

Note: there are two versions of the US Campaign, 1982 and 1979. Both are identical in maps and basic AI; however, they employ different equipment. For example, in 1982 the US primarily employs the M60A1 (RISE Passive), while in 1979 the primary armor is the M48/A5. The Soviet forces are also employing earlier versions of equipment such as T55s and T62s.

■ United States Campaign Scenarios

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1A – Racing the Moon. Fought outside of Fulda near the town of Pilgerzell, B Coy Team must cover the extraction of friendly troops while under threat from a Forward Security Element from the 241st MRR.

1B – Bumps in the Dark. Fought in the woods south of the first battle, this engagement is fought if the player wins 1A. This is a US ambush battle as it attempts to further attrit and delay the Soviet FSE.

1C – They Own the Night. Outside of Neuhof, this night battle is fought if the player loses 1A. This night battle sees a US infantry platoon from B Coy Team cover engineers working in two minefields as Soviet reconnaissance forces probe and attack.

2A – Bear in the Sun. This is a large decision battle on the 'victory track', played if the player wins battle 1A and 2B. Here B Coy Team must block a full Soviet MRB attack on Neuhof. (Hint: key here is attrition of Soviet troops, not holding terrain).

2B – Bear in the Mist. This is a large decision battle on the 'challenge track', played if the player loses 1B or wins 1C. The major difference between this battle and 2A is the presence of mist, early on the morning of the 16th of July 82 and differences in support for B Coy Team.

3 – A Hill to Die On. This is a huge battle on the "challenge track", players must win this battle, or the campaign ends in defeat. This battle is played if the player loses either 2A or 2B. Player assumes control of the remnants of the entire 2nd Bn TF as they defend against a Soviet Tank Battalion assault near Schweben.

4 – Dollbach Heights. This is a medium battle on the "victory" track and is played of the player wins either 2A or 2B. The player commands elements of the Bn Scout Platoon and AT Platoon as they attempt to interdict a Soviet BTR MRB near the town of Dollbach.

5A – Route 66. This is the "victory" version of this battle, fought if the player wins battle 4. It sees the 2nd Bn TF in a meeting engagement with a Soviet Tank Battalion near Schluchtern. US player must find, fix and finish Soviet forces before they can achieve their objectives.

5B – Route 66. This is the "challenge" version of battle 5, fought if the player loses battle 4 or survives Battle 3. The 2nd Bn TF is in a meeting engagement with a Soviet MRB near Schluchtern. US player must find, fix and finish Soviet forces before they can achieve their objectives.

6 – Bad and Worse. The campaign returns to a linear format at Battle 6 and is played only if the player wins either battle 5A or 5B. The player commands a reinforced Coy Team as they try and clear objectives near the town of Marborn of a reinforced Soviet Motor Rifle Company.

7 – The Citadel. A climax battle played if the player wins battle 6. This battle sees the entire 2nd Bn TF defend high ground above highway 66 near the town of Meerholz. Soviet forces are a Main Body assault of a combined MRB and TB reinforced.

8 – Unhook the Leash. The last battle of the US Campaign, played if the player wins battle 7. This battle sees a more modern Coy Team (M1s and M2/M3s) advance to search and destroy elements of 57 MRD HQ near the town of Wachtersbach. Soviet forces are a reinforced (but depleted) MRB.

■ Soviet Campaign – "The Ride of the 120th"

The Soviet Campaign is set in the first 48 hours of a fictional war between the Soviet Union and the West set in 13-15 July 1982 in the Fulda sector. The campaign is centered on the 39th MRD, 120th MRR as it advances from the East German border to the town of Alsfeld (note: the map below shows the initial plan for the 39th MRD, however, events impact the final objectives of the 120th).
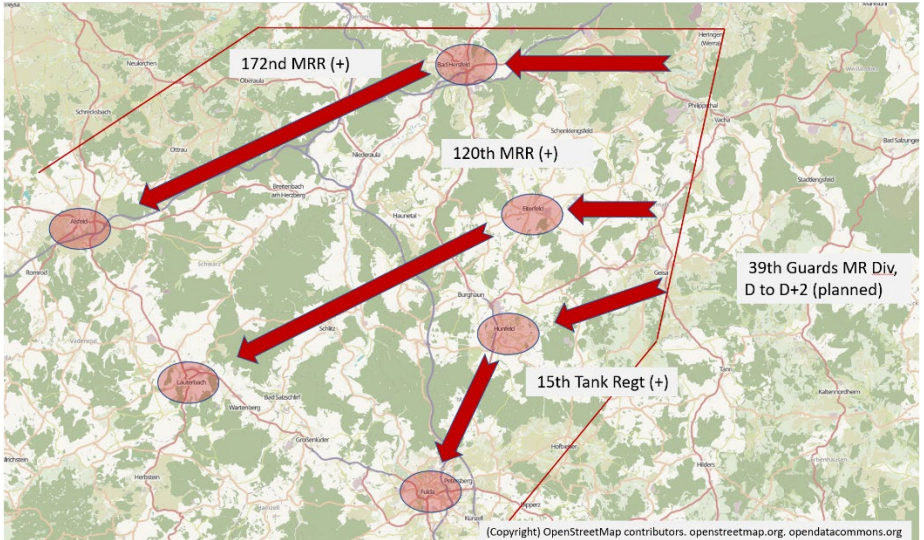

The Soviet Campaign is designed to mirror realistic Soviet operational doctrine and as such is particularly challenging. Players will command a Soviet MRB in each battle. Limited resupply, refit, and repair (RRR) is available throughout the campaign and the player's core troop losses carry forward to the final battle. The campaign has two versions:

Standard: This version has "victory" and "challenge" tracks that differ mainly in terms of support available to the Soviet player, however there are second chances for battle losses.

March or Die: This version can be considered as "Hardcore mode". There are no second chances, as the player must win each battle in succession or the campaign ends. Furthermore there is no Refit or Repair and very limited resupply throughout.

The Soviet Campaign is designed to be played after the NTC and US Campaign in the series.

■ *Soviet Campaign Scenarios*

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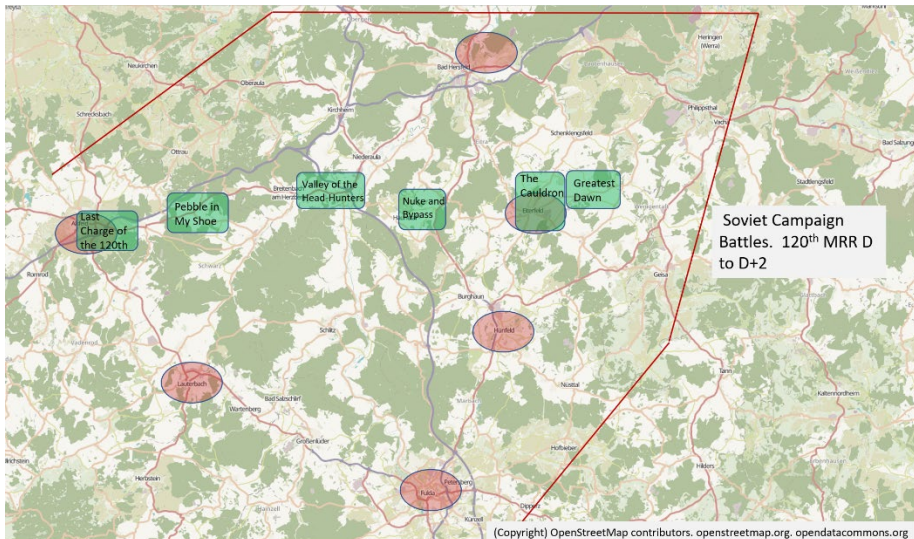
1 - Greatest Dawn. 13 July 1982, the Soviet player takes command of 2nd Motor Rifle Battalion (MRB) (BTR) in the opening advance to secure the approaches to the primary objective the town of Eiterfeld. The battle takes place between the towns of Mansbach and Ufhausen. US forces are from the 11 ACR deployed to block and attrit the Soviet advance.

2 - The Cauldron. Soviet attack on primary objective of Eiterfeld by the 1st MRB (BMP). US forces are from the 11th ACR and 3rd Armd Div. In the standard campaign there are two versions of this battle depending on whether the player wins the first battle.

3 - Nuke and Bypass. The Soviet player must push the 3rd MRB (BTR) past the town of Haunetal to exit zones. US Player has a mech infantry company team from the 3rd Armd to block the advance. In the standard campaign there are two versions which depend on whether the player wins or loses battle 2.

4 - Valley of the Head Hunters. The Soviet player must block a US advance by the 3rd Armd in the early hours of 14 July 1982 with the 3rd MRB (BTR). In the standard campaign there are two versions which depend on whether the player wins or loses battle 3.

5 - Pebble in My Shoe. The Soviet player conducts an attack on the town of Lingelbach in order to clear the approach to the final objective of Alsfeld. The Soviet player is in command of the 2 MRB (BTR) and is attacking a US Mech infantry Coy team.

6 - Last Charge of the 120th. The Soviet player must capture the objectives on the outskirts of Alsfeld. Player will employ <u>all surviving</u> forces in a Main Body attack. US forces are a Mech Inf Bn TF.

■ NTC Campaign - Training in The Desert

The National Training Center (NTC) opened in 1982. The initial units that participated in the force-on-force training at the NTC came away shocked at the skill and effectiveness of the Opposing Force (OPFOR) and, in some circumstances, the inadequacy of their own equipment and training.

You are being thrust into the role as a Company Team commander in one of these early training rotations. Be wary, the enemy is sly and for this time period has equal and, in some cases, superior quality equipment.

You are the commander of Company Team B including two Mechanized Infantry Platoons with M113s and one attached M60A1 platoon, also attached is one section of two M-150 Tank Hunters. Your force may expand with additional attachments, artillery, attack helicopters etc. Depending on the situation. It may also contract as some units might be pulled from your command, also depending on the situation.

Regardless, also be aware that whatever force you field, you might find it a challenge in some cases to compete with the OPFOR. This is a historical constraint on the US Army combat formations during this time frame.
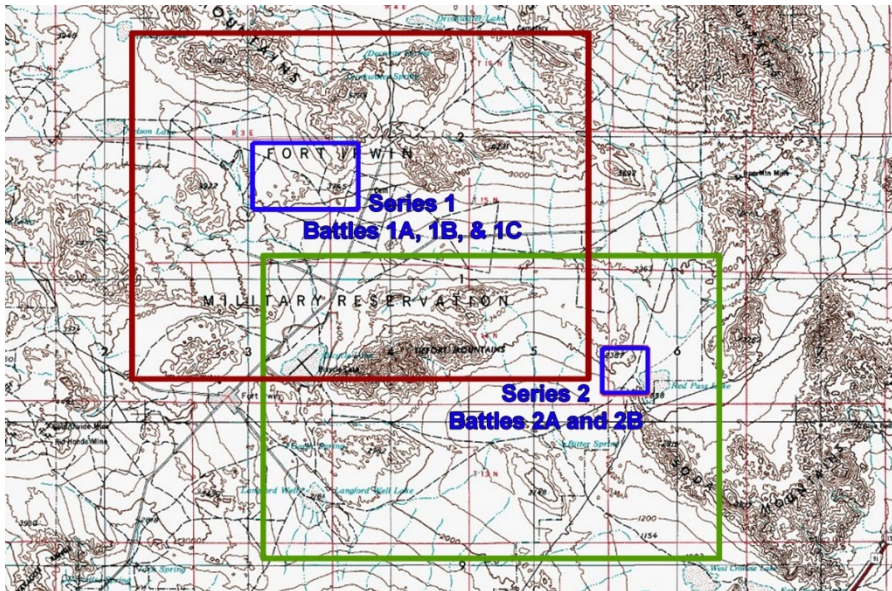
In this campaign you will be presented with Decision Points, which will allow you the opportunity to decide how you would prefer to fight the enemy. Neither decision will be correct or incorrect, only different, and each will present unique challenges.

When you are presented with a Decision Point scenario, you will see a map that will be a 1/10th scale representation of the battle area. You will see one M113 which will represent your Company Team, simply drive to the area representing your choice of action and then cease fire.

The enemy OPFOR composition will be dependent on the situation and battle you are fighting, but could range from Company to a full Battalion in size. Be aware that whatever OPFOR you face, they are experts at their craft and in most cases will be crack formations.
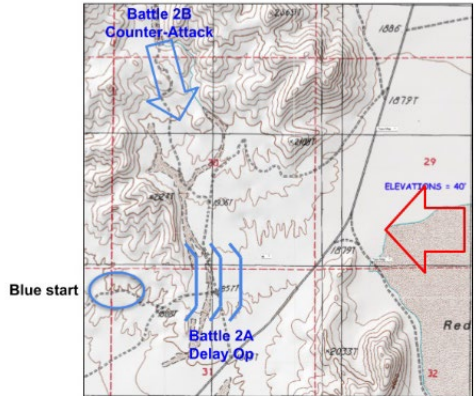
Series 2 Decision Point
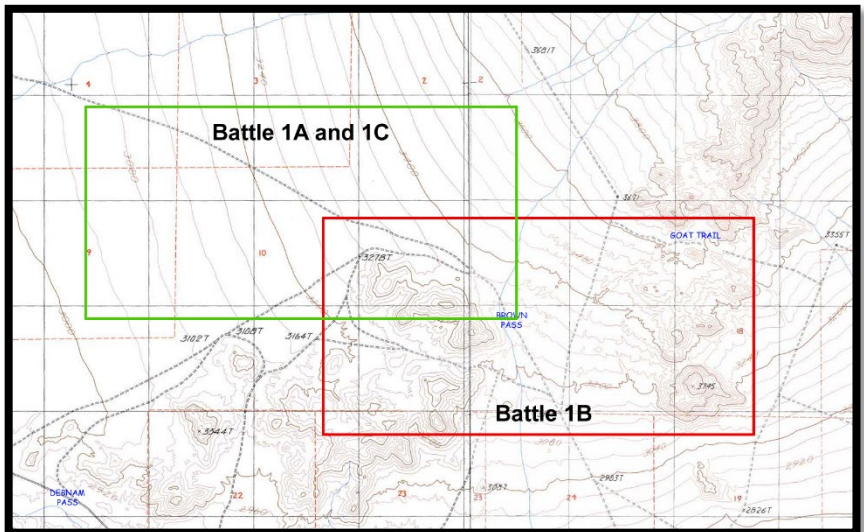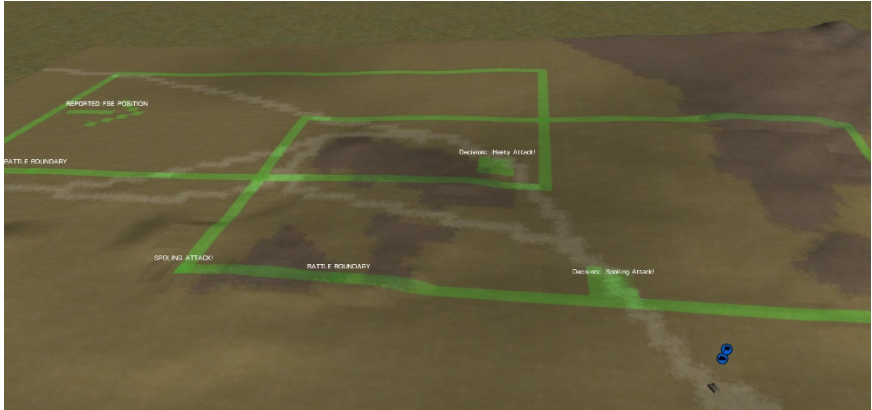
You will then be presented with the full-sized battle representing the choice you made in the
Decision Point scenario.
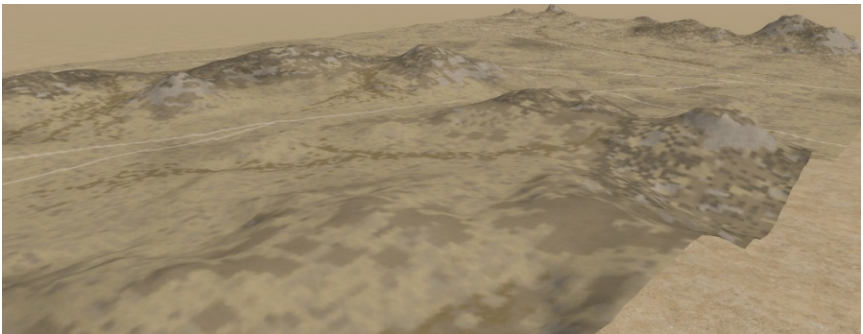
Your losses may or may not carry over to the next battle, all will be dependent on the situation
and your performance.

This campaign was a collaboration between Bil Hardenberger and George McEwan.

Maps: Bil Hardenberger

Planning: Bil Hardenberger and George McEwan

Special thanks to Ben Park for coming up with the idea for the Decision Point scenarios.

■ ENCYCLOPEDIA

The following section is a quick reference for the vehicles and weapon systems available in Combat Mission: Cold War. It is by no means exhaustive and should be seen as a starting point for research; interested players will find countless and more detailed materials available in printed and online media.

Note: For the purposes of this fictional "what-if" conflict, introduction and deactivation dates for some equipment have been shifted by +/- 6 months. The aim of this was to allow for broader playing options, while still being accurate to historical timelines. Rarity factors apply in line with actual historical dates of fielding.

■ United States Army

■ M48 Patton Main Battle Tank Series

The M48 Patton was a first generation main battle tank that began American service in 1952. The M48 was eventually replaced by the M60 in American frontline service, but the M48 continued to be used by National Guard units through most of the 1980s. Approximately 12,000 were built, and the tank was widely exported, with modernized versions still in international use today.

Most models of the M48 were armed with the M41 90 mm gun, which quickly became underpowered against Soviet tanks. It was powered by a Continental AV1790 gasoline engine. Turret protection was composed of cast homogeneous steel to 178 mm thick, and the upper glacis was 220 mm thick at typical angles.

■ M48A5 Patton

The M48A5 was an upgrade applied to Army National Guard M48s beginning in 1975. The biggest change was the mounting of the M68 105 mm gun, the main gun of the M60. This upgrade allowed for standardized training and ammunition across all tanks currently in service. Modernizations to the hull included M60A1 RISE components, engine retrofits, and an NBC system.

In Combat Mission, the M48A5 is armed with M392 Armor-Piercing Discarding Sabot (APDS) and M456A1 HEAT rounds.

■ M60 Patton Main Battle Tank Series

The M60 series was the second generation of main battle tanks designed by the United States. Although "Patton" was never an official nickname of the tank series, the moniker has been often applied to the M60 as being a descendant of the M48 Patton tank design. Beginning service in 1959 and with eventually 15,000 examples built, the M60 was to be the primary tank of the United States for most of the Cold War.

The M60's primary armament was the M68 105 mm rifled tank gun, a license-built variant of the British Royal Ordnance L7 gun. The Patton was initially equipped with the M728 APDS round. The M728 had a tungsten alloy core and could penetrate up to 250 mm RHAe, which left it underpowered against modern Soviet tanks of the era. HEAT ammunition began as the M456A1, later upgrading to the M456A2 in the early 1980s. For secondary armament the M60 was armed with a .50 caliber and 7.62 mm machine gun.

A ballistic drive, a mechanical gun data computer, and a coincidence range finder constituted the M16 Fire Control System. By the early 1960s, the M60 series was also equipped with first generation night vision through an IR searchlight, periscopes, and binoculars.

The M60's armor was composed of homogenous steel. The clamshell turret strongly resembled the M48's turret, but the M60 had a straight hull. The M60's roomy hull and turret provided it a lots of interior space, allowing for easy installment of upgrades and additional systems.

The M60 was powered by a 560 kW Continental ACDS-1790 V12 diesel engine. The tank was capable of reaching speeds of up to 48 km/h on roads and 19 km/h cross country. Full NBC crew protection was provided via the M13A1 positive pressure system.

■ M60A1 Patton

The M60A1 was accepted into service in 1961. Major and minor system upgrades were made throughout the tank. A new turret design from the T95E7 prototype medium tank created more crew space. The upper glacis and side crew compartment armor were strengthened. The M601A had an improved mechanical fire control system and the ammunition load was increased to 63 rounds. Various mobility upgrades accommodated the extra weight.

■ M60A1 (RISE) Patton

The M60A1 was upgraded through a series of programs through the 1970s. In 1972, the Add-On Stabilization (AOS) added a gun stabilization system that made firing on the move more accurate. The Reliability Improved Selected Equipment (RISE) upgrade package was introduced in 1975, and included numerous upgrades to the vehicle's reliability. Highlights of

the RISE package included a better engine and transmission, and steel instead of aluminum roadwheels.
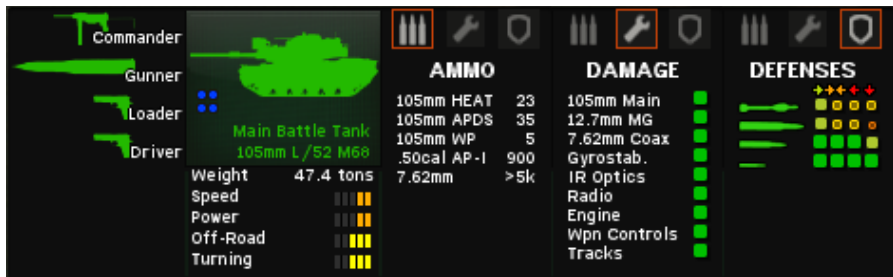
■ M60A1 (RISE+) Patton

In the late 1970s, the gun's mechanical ballistic drive had its cam updated to allow for the newer, more accurate M735 Armor-Piercing Fin-Stabilized Discarding Sabot (APFSDS) round. With up to 410 mm RHAe of armor penetration, the M735 was a major improvement over the earlier M728, but the round was still underpowered against the frontal armor of advanced Soviet tanks such as the T-64B, T-72A, and T-80B, sometimes significantly so.

■ M60A1 (RISE Passive) Patton

The (RISE) Passive upgrades added passive night vision sights for the commander and gunner, better driver night vision, and a smoke grenade launcher system.

By this point, the M60A1 had also upgraded the coaxial to the new M240 machine gun.

■ M60A2 Patton

The M60A2 marked a significant departure from American tank weaponry conventions. The A2 variant replaced the typical 105 mm long gun and high-velocity kinetic energy shells rounds with a shorter, lower-velocity 152 mm M162 gun-launcher that could fire MGM-51 "Shillelagh" Anti-Tank Guided Missiles (ATGMs) as well as M409 High-Explosive Anti-Tank (HEAT) rounds. The missile system used an IR beacon for optical tracking and course corrections.

The radical change in armament also necessitated a unique turret design to accommodate the M162 gun-launcher. The bottom of the turret was disk-shaped, which rose up to a narrow top. The unusual crew arrangement placed the commander and his cupola to the rear of the turret. The turret also featured four smoke grenade launchers, a Kevlar spall liner, and a second-generation night vision system.

■ M60A3 Patton

The M60A3 was a technology update of the M60A1. In addition to all of the upgrades provided by the RISE Passive packages, the tank's front turret and mantle armor was increased. A new modern fire control system was also installed, replacing the old mechanical systems with a laser rangefinder and solid state ballistic computer. The turret's electrical and stabilization systems were also upgraded. A Halon fire suppression system was installed to enhance crew survivability.

In Combat Mission, the M60A3 variants, as well as the M1 Abrams, are equipped with another very important upgrade: the M774 APFSDS round. This round replaced the tungsten alloy with ultra-dense Depleted Uranium (DU), upping armor penetration to 440 mm RHAe: enough to penetrate all but the latest and thickest Soviet tank turrets.
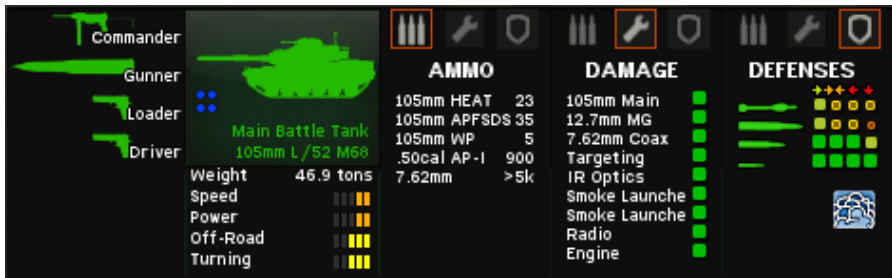
■ M60A3 (TTS) Patton

The last update to the M60A3 consisted of a powerful new advantage: the gunner's sights were upgraded to a Raytheon Tank Thermal Sight (TTS), allowing the gunner to see through weather such as fog and smoke. A thermal sight also allowed the gunner to see at night without the need for an IR searchlight.

■ Abrams Main Battle Tank Series

The M1 Abrams main battle tank series was the frontline service replacement of the M60 Patton. The Abrams tank began service in 1980, following an eight-year development and production program. The M1 program followed the expensive failure of the MBT-70 program, a joint American-West German effort to create a new main battle tank. When the M1 Abrams entered service it introduced several novel tank features, including a gas turbine engine, Chobham composite armor, and crew survivability features.

The M1 Abrams was armed with an M68A1 105 mm rifled gun, the same gun that armed the M60 Patton. A state of the art fire control computer system and laser rangefinder gave the tank unparalleled accuracy. The Abrams carried 55 105 mm rounds, of which 44 were stowed in an innovative ammunition blow-out compartment. This armored compartment was equipped with blast doors that were designed to direct explosions away from the crew compartment. Secondary weaponry included a coaxial 7.62 mm M240 machine gun, another M240 above the loader's hatch, and a .50 cal M2 machine gun in front of the commander's hatch.

The M1 Abrams armor was comprised of a British-designed composite armor also later used on Challenger tanks. This armor was composed of layers of ceramic tiles, composites, steel, and Kevlar within a metal matrix. This armor arrangement provided unmatched protection against HEAT projectiles. An interior Kevlar liner helped protect against spalling. In the event that the armor was penetrated, an automatic Halon gas firefighting system could be activated to suppress fires within the crew space.

For mobility, the M1 Abrams was propelled by a 1,100 kW Honeywell AGT 1500 gas turbine engine, giving the tank a top governed speed of 72 km/h on roads and 48 km/h cross-country. The turbine engine is multi-fuel in design, allowing it to run on JP-8, diesel, kerosene, gasoline, and other jet fuels. The turbine engine is reliable and makes the tank unusually quiet in operation for such a large vehicle, but it comes at the cost of poor fuel economy.

■ M1 Abrams

The type-classified version of the XM1, the M1 began production in 1979 and was built by Chrysler and General Dynamics. The M1 Abram was initially armed with M774 DU rounds as seen in the M60A3.

Available beginning.................1980

■ M113 Armored Personnel Carrier Series

The M113 armored personnel carrier (APC) was developed by the Food Machinery Corp in the 1950s as a better-protected, more reliable replacement for the M59. The M113 entered service in 1960 and first saw combat in Vietnam. The M113 proved to be a widely successful design with over 80,000 vehicles built in a huge variety of specialized support roles such as armored ambulances, maintenance vehicles, C2 hubs, and mortar carriers.

As an armored personnel carrier, the M113 was designed as more of a "battle taxi" that brought troops to the fight, but did not necessarily fight with them like an IFV would. Consequently, the M113 was lightly armed and armored. Aluminum alloy armor protected the occupants from shell splinters and 7.62 mm rounds. For self defense, a .50 caliber M2 machine gun was mounted in front of the commander's hatch, with an AN/TVS-5 night vision sight.

Most versions of the vehicle had a 205 kW Detroit Diesel 6V-53T V6 diesel engine. M113s with the diesel engine could reach speeds of 67 km/h.

■ M113A1

The M113A1 began production in 1964. The A1's chief feature was the replacement of the gasoline engine with a diesel 6V-53 engine. The change to diesel reduced the risk of fires and provided better fuel economy.
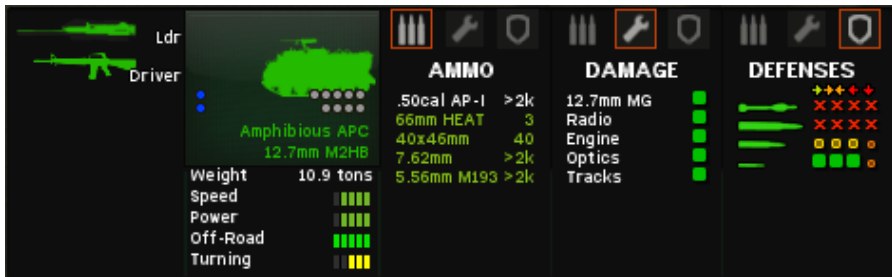
■ M113A2

The M113A2 was introduced in 1979. Interior space was increased by the addition of exterior armored fuel tanks to the rear of the vehicle on either side of the ramp. Reliability was enhanced with new torsion bars, shock absorbers, and relocated cooling fans.

Ldr
Driver

Amphibious APC
12.7mm M2HB

Weight   11.3 tons
Speed
Power
Off-Road
Turning

AMMO

.50cal AP-I >2k
66mm HEAT   3
40x46mm   40
7.62mm   >2k
5.56mm M193 >2k

DAMAGE

12.7mm MG
Smoke Launche
Smoke Launche
Radio
Engine
Optics
Tracks

DEFENSES
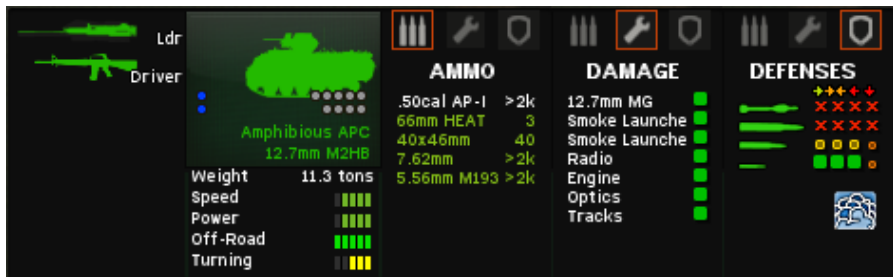
■ M577

The M577 was a command vehicle variant of the M113. The vehicle had no mounted weapons and was easily distinguished by its raised passenger compartment.

Driver

Amphibious Command

Weight   10.9 tons
Speed
Power
Off-Road
Turning

AMMO

66mm HEAT   3
40x46mm   40
7.62mm   >2k
5.56mm M193 >2k

DAMAGE

Radio
Engine
Optics
Tracks

DEFENSES
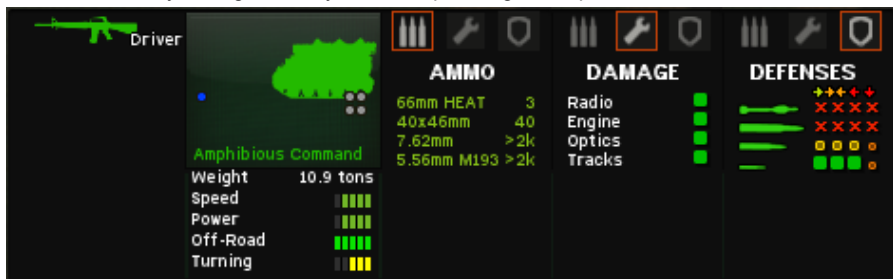
■ M150

The M150 was an M113 armed with a TOW launcher in front of the top crew hatch. Additional missiles were carried inside for reloading. The M150 was a very basic, stop-gap antitank vehicle compared to the M901 that would follow.

Commander
Gunner
Loader
Driver

Range:65-3750m
Amphib. Tank Hunter
152mm TOW

Weight   10.9 tons
Speed
Power
Off-Road
Turning

AMMO

TOW ATGM   8

DAMAGE

TOW
Radio
Engine
Optics
Tracks

DEFENSES

■ M901

A specialized variant of the M113, the M901 Improved TOW Vehicle (ITV) was a dedicated anti-tank vehicle. The M901 was visually distinct for its "hammerhead" turret, armed with a M220A1 TOW weapon system, including thermal vision, and dual launchers. The TOW launchers could fire twice before needing to reload from the ten reserve missiles carried in the vehicle. Reloading was done by tilting the launcher backwards towards the roof hatch.

Note: Although the M901's TOW thermal sights can spot targets through smoke, they cannot reliably attack targets through smoke. TOW missiles of the era had xenon near-IR tail beacons for gunner guidance, which was blocked by smoke.
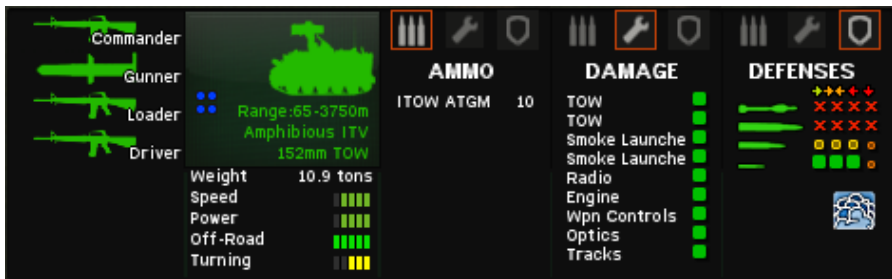
■ M106A1

The M106A1 was a mortar carrier version of the M113A1. The vehicle was armed with an M30 4.2 inch (107 mm) mortar with 88 rounds of ammunition, and a .50 caliber machine gun.

■ M106A2

The M106A2 featured the same improvements as seen on the M113A2.

AMMO	**DAMAGE**	**DEFENSES**
Range:770m+	M30	
Amphibious Mortar	12.7mm MG	
107mm M30	Radio	
107mm HE 76	Engine	
107mm WP 12	Optics	
.50cal AP-I 600	Tracks	
Weight 12.1 tons		
Speed		
Power		
Off-Road		
Turning		

■ M125

The M125 was a variant of the M106 mortar carrier, but was armed with an M29 81 mm mortar.

AMMO	**DAMAGE**	**DEFENSES**
Range:70m+	M29A1	
Amphibious Mortar	12.7mm MG	
81mm M29A1	Radio	
81mm HE 98	Engine	
81mm WP 16	Optics	
.50cal AP-I 600	Tracks	
Weight 11.7 tons		
Speed		
Power		
Off-Road		
Turning		

■ M163A1 Vulcan Air Defense System

The M163 Vulcan Air Defense System (VADS) was a self-propelled anti-aircraft gun (SPAAG) variant of the M113. The M163 was armed with an M168, a ground version of the M61 Vulcan rotary cannon seen on many aircraft. The gun was capable of firing continuously at 1,000 rounds per minute, or up to 3,000 in short bursts. Target acquisition was accomplished with optical sights and a short range radar system. The gun system was housed in an open-topped turret that replaced the original commander's station and crew compartment.

AMMO	**DAMAGE**	**DEFENSES**
Range:3000m	20mm Main	
Amphibious AA	Radio	
20mm M61A1 Vulcan	Engine	
20mm HE-I >2k	Optics	
	Tracks	
Weight 10.9 tons		
Speed		
Power		
Off-Road		
Turning		

■ M163A2 Vulcan Air Defense System

The M163A2 featured the same improvements as seen on the M113A2.

■ M48 Chaparral

The M48 Chaparral was a self-propelled surface-to-air missile (SAM) launcher in American service beginning in 1969. The Chaparral was designed to complement the M163 Vulcan, with the Vulcan's rotary cannon covering short ranges and the Chaparral's SAMs covering longer ranges.

The Chaparral was armed with MIM-72 missiles, mounted in a rack of four. The MIM-72 was a modified version of the AIM-9D Sidewinder. The missiles were fired by visually acquiring the target, pointing the missile system at the target, and then waiting for the missile seekers to lock on to the target.

■ Bradley Fighting Vehicle Series

The M2 Bradley was the latest United States Army's standard Infantry Fighting Vehicle (IFV) as a replacement to the M113 armored personnel carrier. The Bradley was developed in response to the Russian BMP line of IFVs. The Bradley was developed alongside the M1 Abrams, and designed to have a complementary top speed in order to keep pace with the tanks. Design of the Bradley began in 1963, which would be the start of a long and troubled development program that did not end until 1981 when the IFV finally entered service.

The Bradley's main armament was the single barreled M242 25 mm "Bushmaster" Chain Gun with a coaxial 7.62mm M240C machine gun. With an integrated dual-feed ammunition supply the gun could switch between firing AP and HE with the flip of a switch. When a target appeared to be stronger than the Bushmaster can handle, the Bradley had two BGM-71 TOW ATGMs at the ready in an armored launch rack on the left of the turret. This allowed the Bradley to engage and destroy almost any target it could encounter.

Bradleys were fitted with aluminum armor and spaced steel laminate armor, providing protection from up to 14.5 mm API rounds. Two sets of four-barreled smoke grenade launchers allowed the Bradley to deploy smoke screens for concealment. The vehicle was propelled by a 450 kW Cummins VT903 engine which gave it top speeds of 56 km/h on roads and 40 km/h cross-country.

Note: Bradleys entered service at an odd time for the US Army, TO&E-wise. With less passenger capacity and a very different combat role compared to the M113, the Bradley required a very different organization. For the base game, we have opted to restrict the M2 Bradleys to a special (mixed) mech infantry battalion, available beginning 1981. Within this battalion type, a single company is equipped with Bradleys and follows a hybrid of H and J-series TO&E. M3 Bradleys, beginning 1981, may replace M113s in mixed battalion scout platoons and cavalry regiments on a 1-to-1 basis, while continuing to follow H-Series TO&E.
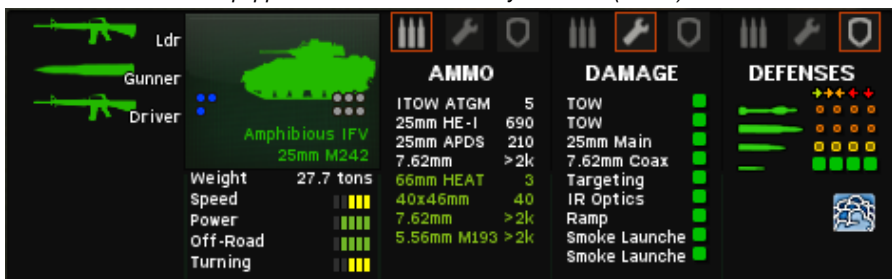
Note: Although the Bradley's TOW thermal sights can spot targets through smoke, they cannot reliably attack targets through smoke. TOW missiles of the era had xenon near-IR tail beacons for gunner guidance, which was blocked by smoke.

■ M2 Bradley

The M2 was the basic version of the series, and used as the standard IFV for mechanized infantry units equipped with them.

Available beginning.................*1981*
Formations equipped..............*Mech Infantry Battalion (mixed)*

			AMMO		DAMAGE	DEFENSES
Ldr			ITOW ATGM	5	TOW	
Gunner	Amphibious IFV		25mm HE-I	690	TOW	
Driver	25mm M242		25mm APDS	210	25mm Main	
	Weight	27.7 tons	7.62mm	>2k	7.62mm Coax	
	Speed		66mm HEAT	3	Targeting	
	Power		40x46mm	40	IR Optics	
	Off-Road		7.62mm	>2k	Ramp	
	Turning		5.56mm M193	>2k	Smoke Launche	
					Smoke Launche	

■ M3 Bradley

The M3 Bradley Cavalry Fighting Vehicle (CFV) was a recon variant of the M2 Bradley. Used by cavalry and reconnaissance formations, the M3 CFV was only slightly different from the standard Bradley, the chief differences being more radios, more TOW missiles, more ammunition, and lower passenger capacity than the M2 IFV.

Available beginning.................*1981*
Formations equipped..............*Mech Infantry Battalion (mixed), Armored Cavalry Squadron (Divisional), Armored Cavalry Squadron (Regimental)*

			AMMO		DAMAGE	DEFENSES
Ldr			ITOW ATGM	12	TOW	
Gunner	Amphibious CFV		25mm HE-I	>1k	TOW	
Driver	25mm M242		25mm APDS	350	25mm Main	
	Weight	27.7 tons	7.62mm	>4k	7.62mm Coax	
	Speed		66mm HEAT	2	Targeting	
	Power		40x46mm	20	IR Optics	
	Off-Road		7.62mm	>1k	Ramp	
	Turning		5.56mm M193	>1k	Smoke Launche	
					Smoke Launche	
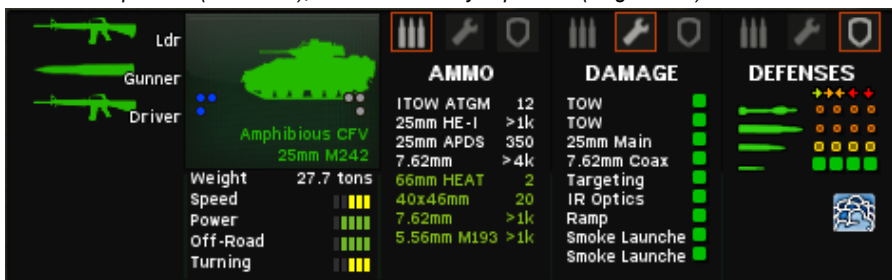
■ United States Army Unarmored Vehicles

■ M151A2 Utility Truck

The Truck, Utility, 1/4-Ton, 4x4, M151 was the descendent of the Willys M38 and MB "Jeeps". The Mutt, as it was often called, entered service in 1960 and remained the primary 1/4 truck of the United States military until its replacement by the HMMWV. Over 100,000 vehicles were produced. The A2 variant featured an overhauled rear suspension that solved the vehicle's safety problems when making fast turns.
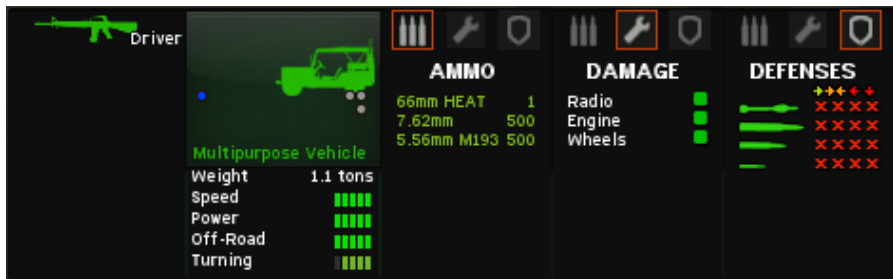
TOW Variant: The antitank platoons of light infantry units mounted their TOW system to an M151 truck on a pedestal mount, allowing the ATGM to quickly redeploy after engaging enemy forces. However, the unarmored nature of the vehicle made this a very delicate ATGM platform suitable only for ambush and very long range engagements.

■ M35A2 Cargo Truck

The M35 is the successor to the 2.5-ton 6x6 "Deuce and a Half" of WW2 fame, and which shares its nickname. The M35 was introduced in 1950 and variants of the vehicle were produced until the new century. Even after leaving US Army service, the truck continued to be used worldwide.

Variants of the base truck chassis typically involved different engines and transmissions. The M35A2 was the most common variant of the truck, with an LDT 465 multifuel engine.
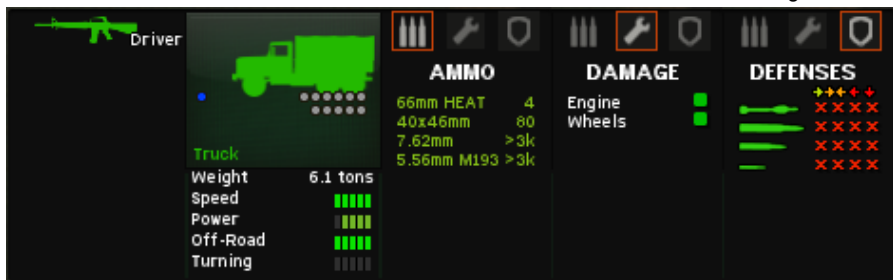
■ United States Army Small Arms

■ M16A1

In the late 1950s experimentation began with the Armalite AR-15, which would become the precursor of the M16 series. The resulting weapon was a lightweight, 5.56 mm, air-cooled, gas-operated, magazine-fed assault rifle with a rotating bolt. The M16's body was made of aluminum alloy, steel, and plastics.

The M16, then type classified as the XM16E1, had a fairly disastrous combat debut in the early years of the Vietnam War, with widespread reports of jamming and reliability issues. The jamming was due to the lack of chrome plating to the chamber and barrel, dirty cartridge powder, improper training, and a lack of cleaning kits.

In 1967 the M16A1 was introduced. The chamber and barrel received chrome plating, and numerous other minor modifications were made to increase reliability. In combination with better cartridge powder, the M16's reliability issues were resolved with the adoption of the M16A1. In 1969, the M16A1 replaced the M14 as the standard rifle of the United States military. During the 1970s, the initial 20-round magazine was replaced with a larger 30-round magazine.

AN/PVS-4 Attachment: In Combat Mission, some M16A1s are equipped with the AN/PVS-4, a second-generation passive night vision sight. The sight allows detection of enemy targets at ranges of up to 600 m under starlight conditions.

Cartridge .... *5.56x45 mm NATO*
Feed system .... *30 round STANAG box magazine*
Rate of fire .... *Semi-automatic, automatic (700-950 rds/min)*
Effective range .... *Point target: 550 m, area target: 800 m*

■ M16A1 w/ M203 Grenade Launcher

The M16A1 could be fitted with a M203 40 mm single-shot grenade launcher, which attaches under the barrel. A separate sighting system was added to rifles fitted with the M203, as the rifle's standard sights were not matched to the launcher.

The High-Explosive, Dual-Purpose (HEDP) round fired by the M203 was effective against infantry and lightly armored targets. The round had a kill radius of 5 meters, and could penetrate up to 20 mm of steel.

Cartridge .... *40x46 mm*
Feed system .... *Single shot*
Rate of fire .... *5-7 rds/min*
Effective range .... *Point target: 150 m, area target: 350 m*

■ M60

The M60 was a 7.62 mm general-purpose machine gun that saw widespread service in the United States military beginning in 1957. The M60 was gas-operated, air-cooled- belt-fed, and fired from the open-bolt position. Taking design inspiration from the MG42, the M60 had a stamped sheet receiver that was intended for mass production. The M60 was praised for its handling, flexibility, and ease of operation, but it was heavy and had reliability issues.

AN/PVS-4 Attachment: In Combat Mission, the M60 is equipped with an AN/PVS-4 second-generation night vision sight during night combat. The sight allows detection of enemy targets at ranges of up to 600 m under starlight conditions.

> *Cartridge ....7.62x51 mm NATO*
> *Feed system ....Linked 100 or 250 round belt*
> *Rate of fire ....550-650 rds/min*
> *Effective range ....800 m (bipod) 1,200 m (tripod)*

■ M3A1 Grease Gun

The M3 was an automatic, air-cooled blowback-operated .45 caliber submachine gun that fired from an open blot. The M3 was designed during WW2 as a cost effective alternative to the Thompson, optimized for mass production. The M3 is commonly referred to as the "grease gun", owing to its visual similarity to the common mechanic's tool.

> *Cartridge ....45 ACP*
> *Feed system ....30-round box magazine*
> *Rate of fire ....450 rds/min*
> *Effective range ....100 m*

■ M1911A1

The Automatic Pistol, Caliber .45, M1911A1 was a single-action, semi-automatic, magazine-fed, and recoil-operated handgun chambered for the .45 ACP cartridge. John M. Browning designed the firearm, which was the standard-issue side arm for the United States armed forces for almost a century, and remains a popular handgun to this day. The M1911A1 featured a few modest changes from the original M1911 model that began service in World War I.

> *Cartridge.........................45 ACP*
> *Action..............................Short recoil operation*
> *Feed system...................7-round box magazine*
> *Rate of fire......................Semi-automatic*
> *Effective range................50 meters*

■ United States Army Special Weapons

■ M2HB Heavy Machine Gun

The M2 heavy machine gun has a long and storied history, being in production since 1933, longer than any other machine gun. The M2, or "Ma Deuce", is primarily used on vehicles as a primary weapon or for self-defense. The large .50 BMG round is highly versatile and effective against infantry, structures, light armored vehicles, and helicopters.

AN/TVS-5 Attachment: During night operations, the M2HB is equipped with the AN/TVS-5 night vision sight, giving it long range detection under starlight conditions.

> *Cartridge*.................................*50 BMG*
> *Feed system* ....*Linked belt*
> *Rate of fire* ....*485-635 rds/min*
> *Effective range*........................*1,800 m*

■ Mk. 19 Automatic Grenade Launcher

The Mk 19 is a grenade launcher that began service in 1968. It uses a 40 mm HEDP (High-Explosive Dual-Purpose) grenade which is larger and more powerful than those used by rifle grenade launchers such as the M203. The extra power gives the Mk.19 a fairly long range and excellent lethality. It is also capable of destroying light armored vehicles, while having a decent chance of damaging heavier armor's more vulnerable components.

> *Cartridge*.................................*40x53 mm*
> *Feed system* ....*32 or 48 grenade linked belt*
> *Rate of fire* ....*325-375 rds/min*
> *Effective range*........................*1,400 m*

■ M72A3 Light Anti-tank Weapon

The M72 Light Anti-tank Weapon (LAW) is a one shot, disposable 66 mm dual purpose anti-tank and anti-personnel shoulder-fired rocket. The M72A3 featured safety upgrades over the M72A2.

> *Effective range*........................*200 m*
> *Armor Penetration*...................*300 mm RHAe*

■ M47 Dragon

The M47 Dragon, also known as the FGM-77, was a shoulder-fired, man-portable anti-tank guided missile system. A high-explosive anti-tank (HEAT) warhead was housed in a disposable fiberglass tube. Attached to this launcher system was a SACLOS thermal sight and guidance system. The launcher fired a short-duration rocket motor to coast 30 meters from the firing position. At 30 meters, the missile's thrusters kicked in and propel the missile at 100-200 m/s to the target, guided by spooled wires and an infrared signal.

With a number of design flaws in the firing and guidance system, a short range, a distinctive sound upon firing, and the need for the gunner to guide the missile all the way to the target, the Dragon was not popular and was likely a very risky weapon to employ against enemy armor.

> *Effective range .... 75 - 1,000 m*
> *Armor Penetration .... 330 mm RHAe*

■ BGM-71 TOW

The BGM-71 Tube-launched, Optically-tracked, Wire-guided (TOW) is an ATGM designed by Hughes Aircraft Company and began service in 1970.

The TOW is widely used across the world. United States Army vehicles armed with the TOW include the M150, M901 ITOW, M151A2 (TOW), M2 Bradley, and M3 Bradley.

Note: Although the TOW's thermal sights can spot targets through smoke, they cannot reliably attack targets through smoke. TOW missiles of the era had xenon near-IR tail beacons for gunner guidance, which was blocked by smoke.

> *Effective range .... 65-3,750 m*
> *Guidance system .... SACLOS, wire-guided*
> *Armor Penetration .... 430 mm RHAe (630 mm RHAe – ITOW)*

■ FIM-43 Redeye

The FIM-43 Redeye was a man-portable surface-to-air missile system (shortened to MANPADS). The Redeye was designed in the 1950s as an infantry air defense weapon to replace the machine guns that were now useless against fast-moving jet aircraft. The Redeye entered service in 1962, and remained in service until the 1980s when the FIM-92 Stinger began to replace it.

The Redeye's missile was able to reach a top speed of Mach 1.7, but it had a slow turn rate and could be outmaneuvered. The missile used an infrared (IR) homing seeker, locking onto the hot exhausts of aircraft. The warhead had an impact fuse, requiring a direct hit in order to down its target.

■ FIM-92 Stinger

The FIM-92 Stinger began its development life known as the Redeye II. The Stinger featured a number of improvements over the Redeye, including a faster solid-fuel rocket motor, better range, and an IR seeker that was more resistant to countermeasures.

The Stinger launches a 10 kg missile with a small ejection motor to push the missile a safe distance before the solid rocket motor engages and carries the missile to its target. Once in the air, the missile accelerates to 750 m/s, or Mach 2.2, and is guided by an infrared homing guidance system to detect the target's IR signature. The target is attacked with a 3 kg warhead with an impact or proximity fuse.

■ M224 60 mm Mortar

The M224 is the standard United States Army light mortar, providing light infantry rifle companies with organic fire support. The M224 replaced the WW2-era M2 60 mm mortar in 1978. The M224 can fire High Explosive (HE) or White Phosphorus (WP) rounds.

Effective range .... 70-3,490 m (HE)
Rate of fire .... 30 rds/min maximum, 20 rds/min sustained

■ M29A1 81 mm Mortar

The M29 81 mm mortar replaced the WW2-era M1 mortar beginning in the early 1950s. Functionally the mortar was very similar to the M1 that it succeeded, and the M252 that would replace it.

In the 1960s, the M29A1 was introduced. These were given a chrome-plated bore for better barrel durability.

Effective range .... *70-4,737 m (HE)*
Rate of fire .... *30 rds/min maximum, 12 rds/min sustained*

■ United States Army Artillery Support

■ M30 4.2 inch Mortar

The M30 was a heavy mortar that served in the United States military beginning in 1951. With a caliber of 4.2 inches (106.7 mm), the M30 became the standard heavy mortar. The mortar system was unusually heavy at 672 lb (305 kg). The M30 was unusual among most mortars in that it had a rifled barrel instead of a more typical smoothbore.

Effective range .... *6,840 m (HE)*
Rate of fire .... *18 rds/min maximum*
.... *3 rds/min sustained*

■ M102 105 mm Howitzer

The M102 was a light howitzer that was designed in the early 1960s as replacement for the M101A1. The M102 was almost a ton lighter than the M101A1 and had a low silhouette, making it ideal for the light infantry units it was assigned to.

Effective range .... *11,500 m (HE)*
Rate of fire .... *10 rds/min maximum*
.. *3 rds/min sustained*

■ M114A1 155 mm Howitzer

The M114A1 was a 155 mm towed howitzer that saw a long period of service in the United States military, beginning in WW2 (then designated the M1 Howitzer) and extending until near the end of the Cold War.

Cluster Variant: In Combat Mission, the cluster variant of the M114A1 replaces the high explosive shells with Dual-Purpose Improved Conventional Munition (DPICM) shells, also known as cluster bombs. This type of warhead bursts at a distance from the ground, releasing multiple sub-munitions which then spread out, saturating an area with numerous small explosions. True to their name, dual purpose sub-munitions include both explosively formed
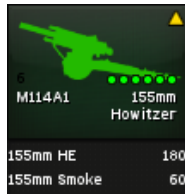
penetrators and fragmentation effects, allowing them to be simultaneously effective against both armored and infantry targets.

Cluster bombs are especially effective against infantry and lightly armored vehicles in a large area, and can significantly degrade the systems of tanks. However, cluster bomb variants are rarer than normal HE artillery assets due to their more complicated and expensive design.

Note: Combat Mission does not simulate unexploded ordnance (UXO).

Rate of fire .... 4 rds/min maximum
... 1 rds/min sustained

■ M198 155 mm Howitzer

The M198 was a 155 mm towed howitzer developed as a replacement for the M114 howitzer. The M198 entered service in 1979, and was employed in the artillery battalions of infantry divisions, as well as corps and army level field artillery units.

Cluster Variant: Swaps HE shells for cluster bombs, as described in the M114A1 entry.

Rate of fire .... 4 rds/min maximum
... 2 rds/min sustained

■ M109A3 155 mm Self-Propelled Howitzer

The M109 was a self-propelled howitzer introduced in 1963. The M109 was armed with a 155 mm Howitzer, housed in a turret with 360 degree traverse. The gun could fire HE and WP shells up to 18 km away. The 335 kW diesel engine allowed the M109 to travel at up to 56 km/h, allowing it to conduct a fire mission and quickly relocate to avoid counter battery fire.

The M109A2 variant was a comprehensive upgrade package, including a new barrel and gun mount, and increased ammunition storage. The M109A3 was a modified M109A1, but was otherwise the same vehicle as the A2.

Cluster Variant: Swaps HE shells for cluster bombs, as described in the M114A1 entry.

Rate of fire .... 4 rds/min maximum
... 1 rds/min sustained

■ M110A2 8-inch Self-Propelled Howitzer

The M110A2 was a self-propelled howitzer that entered service in 1963. Sporting an 8-inch (203 mm) gun, the M110 was the largest self-propelled howitzer in American service. The A1 and A2 variants added a longer barrel and double muzzle brake.

Cluster Variant: Swaps HE shells for cluster bombs, as described in the M114A1 entry.

Rate of fire .... 2 rds/min maximum
... 1 rds/min sustained

■ United States Army Air Support

■ AH-1G Cobra

The AH-1 Cobra was a single-engine attack helicopter manufactured by Bell Helicopter. The AH-1's design is based off of the UH-1 Iroquois, or Huey, with a shared engine, transmission, and rotor system. The Cobra entered service in 1967 with the United States Army, and has gone on to see service to the current day through variants and exports. Over 1,000 Cobras have been built.

In Combat Mission, the AH-1G mounts dual M129 40 mm grenade launchers, housed in an M28 turret under the nose. Mounted on the pylons are up to 52 70 mm Mk. 4 Folding-Fin Aerial Rockets (FFAR).

AH-1G Cobra	Attack Helicopter
40x53mm HE	600
FFAR Rocket HE	52

■ AH-1S Cobra

The AH-1S variant was an AH-1G that has had TOW missile capability added. With this addition, the Cobra was now capable of engaging and destroying enemy tanks and armored vehicles from long distances. A more powerful engine and transmission were also fitted.

Beginning in 1981, the AH-1S in Combat Mission is armed with the updated BGM-71C Improved TOW (ITOW). The -71C has a more effective shaped-charge warhead, increasing armor penetration from 430 mm to 630 mm.

AH-1S Cobra	Attack Helicopter
20mm AP-I	750
FFAR Rocket HE	52

AH-1S Cobra	Attack Helicopter
20mm AP-I	750
FFAR Rocket HE	38
152mm ATGM	8

■ AH-1F Cobra

The AH-1F was a further modernized -1S (or -1G). These updates included a Heads-Up Display (HUD), laser rangefinder, and countermeasures against enemy missiles.

Beginning in 1981, the AH-1F in Combat Mission is equipped with the upgraded BGM-71C ITOW, as seen on the AH-1S.

AH-1F Cobra	Attack Helicopter
20mm AP-I	750
FFAR Rocket HE	52

AH-1F Cobra	Attack Helicopter
20mm AP-I	750
FFAR Rocket HE	38
152mm ATGM	8

■ A-7D Corsair II

The A-7D Corsair II was a light attack aircraft initially used by the US Navy as a carrier aircraft, and later adopted by the Air Force to replace the A-1 Skyraider and F-100 Super Sabre. After extensive use in the Vietnam War, the A-7 began to slowly be replaced by the A-10.

A-7D Corsair	Ground Attack
20mm AP-I	1030
894kg bomb	4

A-7D Corsair	Ground Attack
20mm AP-I	1030
227kg bomb	12

A-7D Corsair	Ground Attack
20mm AP-I	1030
227kg bomb	6

A-7D Corsair	Ground Attack
20mm AP-I	1030
222kg Cluster bomb	4

A-7D Corsair	Ground Attack
20mm AP-I	1030
222kg Cluster bomb	2

■ A-10A Thunderbolt II

The famously durable A-10, affectionately nicknamed the Warthog or simply Hog by pilots and enthusiasts alike, has been in service since 1977. Designed around the GAU-8/A 30 mm Avenger Gatling Gun, the A-10 was born and bred to conduct close air support (CAS) tasks. The A-10 can carry up to 16,000 lbs pounds of mixed ordinance, including various sizes of bombs and AGM-65 Maverick Missiles.

A-10A Thunderbolt — Ground Attack		A-10A Thunderbolt — Ground Attack		A-10A Thunderbolt — Ground Attack		A-10A Thunderbolt — Ground Attack		A-10A Thunderbolt — Ground Attack	
30mm APDU	1350	30mm APDU	500	30mm APDU	250	30mm APDU	1350	30mm APDU	250
227kg bomb	4	227kg bomb	2	Maverick ATGM	2	222kg Cluster bomb	4	222kg Cluster bomb	2
Maverick ATGM	4	Maverick ATGM	2			Maverick ATGM	4	Maverick ATGM	2

■ F-4D Phantom II

An iconic US fighter of the Cold War, the F-4 Phantom II began service in 1961 as an interceptor and fighter-bomber. Initially developed by McDonnell Aircraft for the Navy, the F-4 was soon adopted by the USMC and US Air Force, and then worldwide as an American export aircraft.

The F-4 is a proven design that engaged in many air battles against Soviet aircraft in the skies above Vietnam and numerous other conflicts. Besides being an air superiority aircraft, the F-4 was also used in reconnaissance, Suppression of Enemy Air Defenses (SEAD), and ground-attack roles, and continued to fulfill specialized roles as it began to be replaced by the F-14, F-15, and F-16 beginning in the 1980s.

The D variant of the F-4 updated its avionics with an AN/APQ-109 radar system.

F-4D Phantom — Ground Attack		F-4D Phantom — Ground Attack		F-4D Phantom — Ground Attack		F-4D Phantom — Ground Attack		F-4D Phantom — Ground Attack	
894kg bomb	3	227kg bomb	12	227kg bomb	6	222kg Cluster bomb	4	222kg Cluster bomb	2

■ F-4E Phantom II

The E variant of the Phantom II had an elongated nose that housed an integral M61 Vulcan, a 20 mm Gatling-style rotary cannon. The plane was also given leading edge slats and upgraded engines to aid in maneuverability. Later examples of the variant had the ability to mount AGM-65 Maverick missiles. The F-4E was the most numerous Phantom II variant, with 1,370 total built.

F-4E Phantom — Ground Attack		F-4E Phantom — Ground Attack		F-4E Phantom — Ground Attack		F-4E Phantom — Ground Attack		F-4E Phantom — Ground Attack	
20mm AP-I	640	20mm AP-I	640	20mm AP-I	640	20mm AP-I	640	20mm AP-I	640
894kg bomb	3	460kg bomb	6	460kg bomb	3	Maverick ATGM	2	222kg Cluster bomb	4

■ F-16A Fighting Falcon

The F-16 Fighting Falcon is a single-engine multirole fighter The F-16 was designed to be relatively cheaper to build, more versatile in action, and simpler to maintain than earlier counterparts: as a result the F-16 is lightweight, small, highly maneuverable, and able to mount a large combination of air-to-air and air-to-ground munitions.

The F-16A was the single-seat variant of the initial production run of the aircraft.

Available beginning.................1981

F-16A Falcon	Fighter Bomber	F-16A Falcon	Fighter Bomber	F-16A Falcon	Fighter Bomber
20mm AP-I	515	20mm AP-I	515	20mm AP-I	515
894kg bomb	4	227kg bomb	12	227kg bomb	6

F-16A Falcon	Fighter Bomber	F-16A Falcon	Fighter Bomber	F-16A Falcon	Fighter Bomber	F-16A Falcon	Fighter Bomber
20mm AP-I	515	20mm AP-I	515	20mm AP-I	515	20mm AP-I	515
Maverick ATGM	6	Maverick ATGM	4	Maverick ATGM	2	222kg Cluster bomb	2

■ Soviet Union

■ PT-76 Light Tank Series

The PT-76 was an amphibious light tank series that entered service in 1951. The PT-76 served as a standard reconnaissance tank of the Soviet Union, but beginning in the 70s it began to be replaced by more modern vehicles. Approximately 5,000 tanks were produced.

Owing to its amphibious capability, the tank was also intended as a close range fire support vehicle for river crossings and shore landings. The tank had a hermetic boat-shaped hull, bilge pumps, and trim vane for stability. Two hydro jets propelled the tank at up to 10.2 km/h through the water, with a range of 100 km.

The PT-76 was armed with a 76.2 mm rifled gun, capable of hitting targets up to 1,500 m away. In accordance with its fire support role, the tank stocked mostly HE shells. A SGMT 7.62 mm coaxial machine gun provided a secondary weapon. The PT-76 was lightly armored to accommodate its amphibious capabilities, with protection consisting of homogeneous welded steel that was proof against small arms fire and shell fragments.

Note: The PT-76B has limited availability in the base game. It can only be found as a tank option within the Reserve Reconnaissance Battalion.

■ PT-76B

The PT-76B began to be fielded in 1959. A general modernization package added new sights and observation devices, ventilation systems, better electronics, a new diesel engine, and increased fuel capacity. Survivability was increased with the addition of an Nuclear, Biological and Chemical (NBC) protection and automatic fire extinguishing systems. A slightly different gun and stabilization system were also mounted.

In Combat Mission, the PT-76 is armed with BR354N Armor-Piercing, Composite Rigid (APCR) and BK354M HEAT ammunition for its 76.2 mm gun.

■ T-55 Main Battle Tank Series

The T-55 was a Soviet-designed main battle tank designed in the closing stages of World War 2. The tank series became the primary service tank of the Soviet Army and Warsaw Pact, and together with the T-54 was eventually the most numerous tank series in history, with upwards of 100,000 copies being built. Reliable, well armored, and well gunned, the T-55 was a feared tank in its heyday, prompting the hurried developments of new Western tank technology in response. After being replaced by the T-62 and later series tanks in frontline units, the T-55 continued to be used by reserve units and foreign countries.

■ T-55

The T-55 was the evolutionary culmination of the T-54's lifetime upgrades. Many T-54s were eventually upgraded to the T-55. Distinguishing the base T-55 from a T-54 was the addition of an NBC protection system and new V-55 diesel engine. The driver machine gun was also removed, and internal arrangements increased the tank shell capacity by 6 rounds.

In Combat Mission, the T-55's 100 mm gun is armed with the BM-8 Armor-Piercing Discarding Sabot (APDS) and 3BK17M HEAT rounds.

■ T-55A

The T-55A featured a number of NBC protection additions and changes. The tank's machine gun arrangement was changed, and the coaxial machine gun model switched.

In Combat Mission, the T-55A replaces the 100 mm BM-8 APDS with 3BM25 Armor-Piercing APFSDS.

■ T-62 Main Battle Tank Series

The T-62 was a Soviet-designed main battle tank that began service in the 1960s. A continuation of the T-55 tank series design philosophy, the T-62 series built upon that layout with upgrades to every major system.

Armament was improved over the T-55 with a larger 115 mm U-5TS Rapira gun, which also takes the distinction of being the first smoothbore cannon to fire high velocity Armor-Piercing Fin-Stabilized Discarding Sabot (APFSDS) ammunition. This modern form of kinetic energy penetrator uses fins to stabilize the round in flight, as opposed to spin from barrel rifling. Fin stabilization allows longer rounds to be fired accurately. The smoothbore cannon also had the advantage of improving performance for its 3BK4M HEAT rounds. The gunner received a new TSh-2B-41 gunner sight.

Protection was increased via additional front hull and turret armor. The T-62 had downgraded in was mobility, as it was heavier than the T-55 but powered by the same V-55 engine.

■ T-62 (1972)

This minor upgrade added a DShK 12.7 mm machine gun to the loader's hatch.

■ T-62 (1975)

This upgrade of the T-62 (1972) enhanced the fire control system with the addition of a KTD-2 laser range finder.

In Combat Mission, the T-62 (1975) upgrades its HEAT rounds to 3BK15M.

■ T-64 Main Battle Tank Series

The T-64 was a Soviet main battle tank that began service in 1964. The T-64's basic design features would form the basis of future modern Soviet tank design, and was known for introducing revolutionary advances in Soviet tank design: variants introduced the autoloader, the 125 mm gun, and Gun-Launched ATGMs (GLATGM). Almost 13,000 T-64s have been built since their introduction.

■ T-64A

The T-64A was a firepower upgrade that quickly followed the base model. The new and powerful 125 mm D-81T gun required too much space for ammunition, and as a result a new tank technology was developed: the mechanical autoloader, which replaced the fourth crewmember of the tank. The autoloader inclusion allowed Soviet tanks to retain their characteristic low profile while shaving a crewmember and retaining a higher ammo load, but at the cost of potential higher crew fatigue and lower mechanical reliability. Coupled with the new gun and autoloader was a set of new targeting and observation equipment, such as stabilizers, periscopes, and night vision.

In Combat Mission, the T-64A is armed with the BM-21 APFSDS and 3BK14M HEAT rounds.

■ T-64B

The T-64B introduced another important capability that would be carried forward in Soviet tank design. A new gun and fire control system were designed to fire the 9M112 (AT-8 Songster) GLATGM, giving the tank a new ability to attack enemy targets at long ranges. The coincidence rangefinder was also upgraded to a laser rangefinder.

In Combat Mission, the T-64B is armed with the BM-15 APFSDS and 3BK18M HEAT rounds.

■ T-64B1

The GLATGM and guidance system were costly additions to the T-64B, and consequently not all T-64Bs received them. The T-64B1 was a T-64B, but lacking the ATGM system and external guidance box.

■ T-72 Main Battle Tank Series

The T-72 tank series was developed in the late 1960s and early 1970s as a result of experiences in designing the effective but very expensive T-64 series. Initially designed as a cheaper mobilization model to only be mass-produced in times of war, the T-72 eventually began to be produced as a new tank line in its own right. The T-72 was widely used by Warsaw Pact members, as well as being license-produced all over the world.

Contrary to popular belief, there were no Soviet army units operating T-72s in the Group of Soviet Forces Germany (GSFG).

■ T-72

The base model of the T-72 is equipped with a 125 mm 2A46 series smoothbore gun. Like the T-64, the T-72 uses an autoloader that is capable of a rate of fire of 6-8 rounds per minute. Original versions of the T-72's armor consisted of a cast steel turret with thickness of up to 280 mm, and a laminated armor glacis 205 mm thick. The base model of the T-72 was equipped with "Gill" armored skirts as a countermeasure against shaped charges.

Unlike the T-64's expensive and complicated engine, the T-72 had an underpowered but simpler (and cheaper) 580 kW V-12 diesel engine, allowing it to reach speeds of up to 60 km/h.

In Combat Mission, the T-72 is armed with the BM-12 APFSDS and 3BK14M HEAT rounds.

■ T-72A

An improved version of the base model, dubbed the T-72A or by some western forces as the "Dolly Parton", was introduced in 1979. A new electronic fire control system and laser rangefinder were added. The protection of the tank was heavily upgraded, with composite armor being added to the turret front. The unsuccessful "gill" skirts were replaced with normal rubber track skirts.

In Combat Mission, the T-72A is armed with the BM-15 APFSDS and 3BK18M HEAT rounds.

■ T-72A (1980)

Beginning in 1980, smoke launchers were added to the T-72A's turret.

In Combat Mission, the T-64B is armed with the BM-22 APFSDS and 3BK18 HEAT rounds.

Available beginning.................1980

■ T-80 Main Battle Tank Series

The T-80 marks the third generation of Soviet main battle tanks. The T-80 was born of a line of experiments dating from the late 1940s to produce a turbine engine powered tank. A turbine-powered T-64 (the T-64T) was deemed an inadequate chassis for the weight introduced by the new engine. The hull was enlarged, with an overhauled track system and an extra road wheel being added. The interior layout of the vehicle remained very similar to the T-64. The resulting vehicle was essentially a modernized T-64, with some elements of the T-72 (such as the armament) incorporated. The T-80 entered Soviet service in the mid 1970's, but was initially produced in much lower numbers than the T-72 and T-64.

In Combat Mission, T-80s are armed with the BM-22 APFSDS and BK-18M HEAT rounds.

■ T-80

The T-80's signature feature is the 746 kW GTD-1000T multifuel gas turbine engine, the first in a production tank. The base model could reach speeds up to 70 km/h on roads; couples with an impressively high power-to-weight ratio, it was the most mobile tank of the period.

The T-80's base model was produced in limited numbers before improved variants replaced it.

■ T-80B

The T-80B was the first major variant of the T-80. New fire control systems added a laser rangefinder, along with the capability of firing GLATGMs; this was housed in a new turret with improved composite armor and smoke launchers. A new 820 kW engine was also fitted.

■ T-80B1

As with the T-64B1, the T-80B1 is a T-80 without a GLATGM.

■ BMP Infantry Fighting Vehicle Series

The BMP (Boyevaya Mashina Pekhoty, or "fighting vehicle of infantry") is a Soviet-designed amphibious Infantry Fighting Vehicle (IFV) family. Revolutionary at the time of their introduction in the late 1960s, BMPs were among the first IFVs to see widespread service. Unlike the armored personnel carriers that preceded them, such as the BTR and M113, IFVs were designed to fight alongside their infantry dismounts instead of merely provide them with an armored ride to the battlefield.

As an IFV, the BMP's design requires speed, firepower, and armor protection. Armor protects the vehicle from light cannon fire and machine gun fire to the front, and light machinegun fire to the sides and rear. Passengers are completely protected from shell splinters. A cannon, coaxial machinegun, and a mounted ATGM provide the BMP with the ability to destroy almost any threat. Firing ports for small arms on the sides and rear of the passenger compartment allow squad members to help defend the vehicle.

The BMP is also amphibious, able to float and swim through water with very little preparation. This ability greatly enhances operational mobility of units equipped with the BMP, since it does not depend on specialized bridging equipment to cross water obstacles.

■ BMP-1

Production of the BMP-1 began in the late 1960s. The combination of armament and armor made it a formidable vehicle through the 1970s, but by the 19080s it was highly vulnerable to enemy IFVs and tanks of all types. Nevertheless, the BMP-1 was still a significant threat to light Armored Fighting Vehicles (AFVs) or dismounted infantry.

The steeply-sloped front armor was proofed against heavy machine gun fire. It was armed with an unstabilized 73 mm smoothbore gun which fired a low velocity HEAT round, and as such the main gun was unreliable in windy conditions. The standard BMP-1 had an AT-3B Sagger ATGM launcher mounted above the gun. The launchers had to be loaded by hand through a small loading hatch, and the vehicle had to be at a dead stop to fire and guide its ATGM.

Command Variant: Designated the BMP-1K (K = "Komandirskaya", or "Command"), the command variant was used by the battalion commander. This variant sacrificed two passenger seats to house additional radio and communications equipment, and could be identified by the extra external antenna.
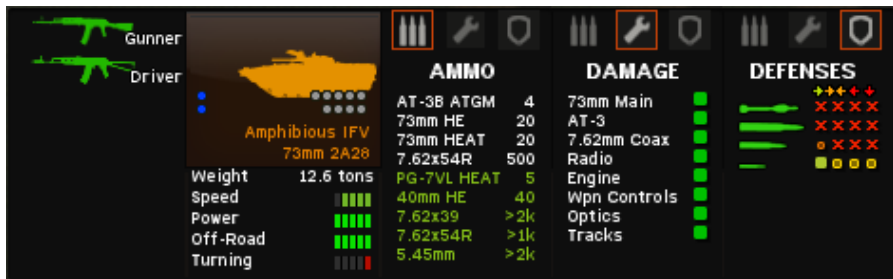
■ BMP-1P

The BMP-1P was a modernization of the BMP-1 that began in the 1970s. The obsolete MCLOS-guided AT-3 Sagger launcher was replaced with a launcher capable of firing the Semi-Automatic Command to Line Of Sight (SACLOS)-guided AT-5A Spandrel. While Manual Command Line of Sight (MCLOS) guidance requires the operator to control the missile with a joystick while maintaining sight on both missile and target (not an easy task), SACLOS systems merely require that an operator points a sighting device at the target, allowing the fire control system to guide the missile. This results in much higher ATGM accuracy.

Six smoke launchers were also added to the turret in order to provide battlefield concealment.

**Command Variant:** The BMP-1PK had the same changes as seen in the BMP-1K.
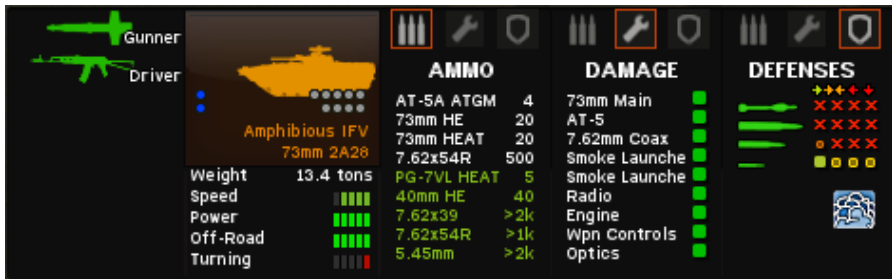
■ BMP-2

The BMP-2 is the second generation vehicle of the BMP family of infantry fighting vehicles. Soon after the BMP-1 entered service it was discovered that, among other problems, the main armament was not sufficiently accurate and that the armor could not sufficiently protect the vehicle from .50 caliber machine guns. Design on the BMP-2 began in 1972 to address these shortcomings, and the new model entered service in 1980.

The BMP-2 uses a chassis that is mostly similar to the BMP-1. The armament has been significantly upgraded, however, with a 2A42 30 mm autocannon and roof-mounted 1PZ-3 ATGM launcher equipped with 9M113 Konkurs (AT-5 Spandrel) missiles. These weapons are part of a new and larger two-man turret.

Command Variant: The BMP-2K is a command variant of the BMP-2, and can be externally distinguished from the base version by an additional antenna for communications equipment.

Available beginning.................1980
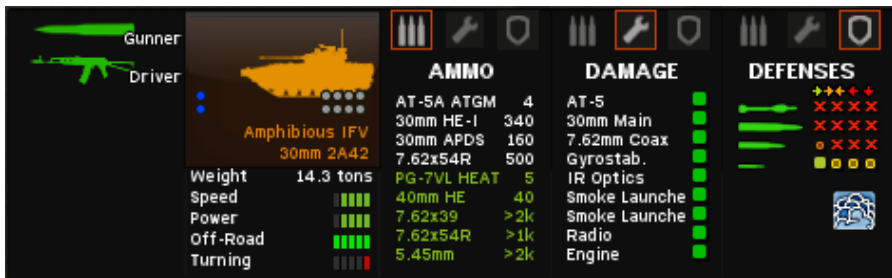
■ BRM-1

BRMs (Boevaya Razvedyvatelnaya Mashina, or "Combat Recon Vehicle") are highly modified combat reconnaissance variants of BMPs. The BRM-1 is based on the BMP-1 chassis. The BRM-1 is equipped with a variety of surveillance equipment, including laser rangefinders, radio direction finders, ground surveillance radar, WMD detection devices, night vision devices, and extra communications equipment. Vehicle firepower is slightly downgraded with the deletion of the ATGM and most firing ports.


■ MT-LB Armored Personnel Carrier Series

The MT-LB (Mnogotselevoi Tyagach - Legko Bronirovanny, or "multipurpose tower - light armored") is a versatile tracked light armored vehicle developed in the 1960s. The MT-LB is widely used as an armored auxiliary and towing vehicle in a wide variety of specialized roles.

The vehicle has a lightly armored welded steel hull, enough to protect two crew and ten passengers from small arms and shell splinters. A small one-man turret at the front of the vehicle houses a 7.62 mm PKT machine gun for self defense.

The MT-LB is amphibious with little preparation, using the motion of its tracks to propel it in the water at up to 6 km/h. A 179 kW diesel engine gives the MT-LB a top speed of 61 km/h on roads. The MT-LB's low weight and tracks give it excellent off-road mobility due to low ground pressure, making it a useful APC for mountain infantry brigades and arctic units.
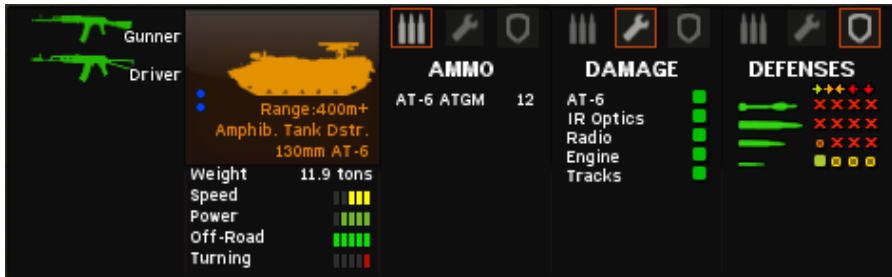
■ MT-LB

The MT-LB is often used as a tow vehicle for anti-tank guns and artillery. When needed, the MT-LB can also serve as an APC.
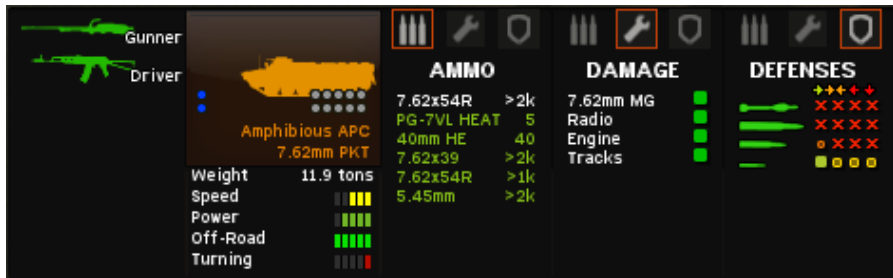
■ 9P149 Shturm-S

The 9P149, or "Shturm-S", is a tank destroyer variant of the MT-LB assigned to anti-tank battalions and batteries. The vehicle is equipped with a 9K114 Shturm (known to NATO as the AT-6 Spiral) ATGM launcher. The Shturm is armed with 9M114 Kokon ("Cocoon") missiles and uses SACLOS VHF radio guidance instead of wire guidance to allow for faster and further travel. The missile has a maximum range of approximately 5,000 m and the HEAT warhead can penetrate up to 560-600 mm of armor (RHAe).

■ 9K35 Strela-10

The 9K35 Strela-10 (SA-13 Gopher) is a Surface-to-Air Missile (SAM) variant of the MT-LB that began service in 1976. The Strela is armed with 9M37 SAMs, which have a maximum engagement range of 5,000 m and a maximum engagement altitude of 3,500 m. The missiles use a optical/infra-red homing system with a triple channel guidance system to resist countermeasures. Laser proximity and contact fuses instruct the missile to detonate upon reaching the target, which can be enemy fixed-wing aircraft or helicopters.

■ MT-LBu 1V14

Using the larger specialized chassis of the MT-LBu, the 1V14 is a battery command and forward observer variant equipped with extra communication and observation equipment.

## ■ BTR Armored Personnel Carrier Series

The BTR (Bronetransportyor, or "armored transporter") is a Soviet series of Armored Personnel Carrier (APC). BTRs were designed as a cheaper alternative to the BMP infantry fighting vehicle. The BTR-60 design was highly successful and a major influence on APC design for years to come, while spawning dozens of specialized variants and modernized upgrades. Being an APC, the BTR is designed as more of a "battle taxi" that gives infantry a protected ride to the battlefield than as a fighting vehicle such as the BMP.

The welded steel boat-shaped hull protects against light small arms and shell splinters, while a KPVT 14.5 mm heavy machine gun allows the BTR to defend itself against enemy light armored vehicles and infantry if necessary. The eight-wheeled design gives the BTR excellent on-road mobility and a lighter logistical footprint than tracked vehicles. All variants of the BTR are amphibious.

■ BTR-60PA

The initial versions of the BTR-60 had an exposed troop compartment, leaving the passengers exposed to air bursts, tossed or launched explosives, plunging fire, and the elements. This shortcoming was rectified in the BTR-60PA, which covered the passengers with an armored roof. The -PA variant was short-lived and quickly replaced by the turreted -PB.

Command Variant: Designated the BTR-60PAK (K = "Komandirskaya", or "Command"), the command variant is used by battalion command staff and contains additional radios.
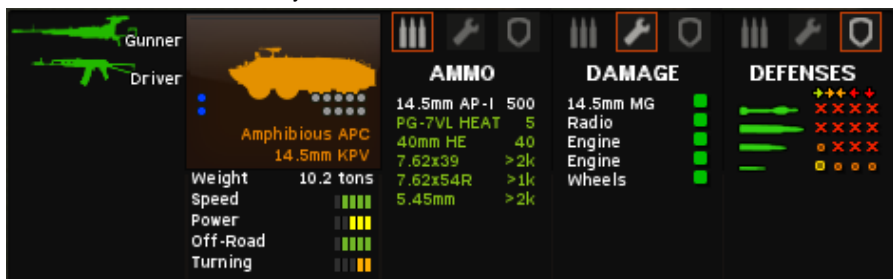
■ BTR-60PB

The BTR-60PB added a one-man turret, originally designed for the BRDM-2, to the vehicle, armed with a KPVT 14.5 mm heavy machine gun and 7.62 mm coaxial PKT machine gun. Thicker armor increased protection from small arms, and more hatches for passengers and crew to exit the vehicle were also added.

Command Variant: The BTR-60PBK command variant added extra radios to the vehicle.
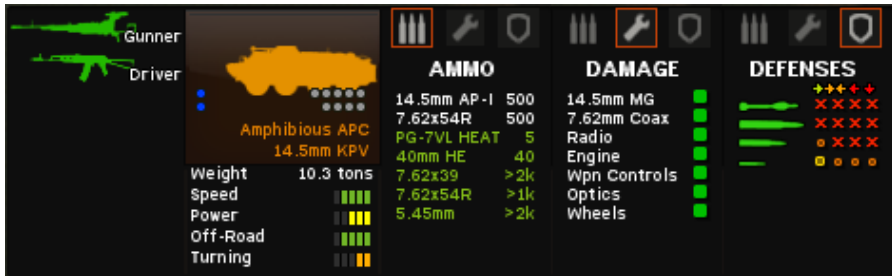
■ BTR-60PU

The -PU is a BTR-60-PB that has been converted into a command vehicle for air defense units. The turret and weaponry are removed and replaced with a telescoping mast and external generator. Additional radios, navigation equipment, and computers occupy the interior.

■ BTR-70

The successor to the venerable BTR-60, the BTR-70 is a modernization of the BTR series that began service in 1972. Differences between the BTR-60PB and BTR-70 include heavier armor, puncture resistant tires, and redesigned side doors that allow passengers to exit the vehicle faster while providing them some protection as they exit. The turret sports a 14.5 mm KPVT heavy machine gun as the primary weapon and a coaxial PKT. Armor protection is light, but enough to protect crew and passengers from light small arms and shell splinters.

Command Variant: Designated the BTR-70K (K = "Komandirskaya", or "Command"), the command variant is used by the battalion commander. This variant adds additional radios and electronics, and can be identified by the extra external antenna.
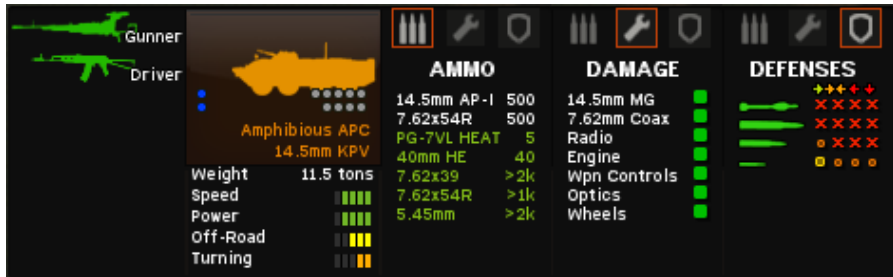
■ BRDM Scout Car Series

The BRDM (Boyevaya Razvedyvatelnaya Dozornaya Mashina, or "Combat Reconnaissance Patrol Vehicle") is a line of amphibious armored scout cars developed by the Soviet Union beginning in the 1950s to replace the BTR-40.

A number of features enhance the BRDM's mobility. A boat-shaped hull, trim vane, and rear water jet make the vehicle travel in water with very little preparation. Four additional belly wheels can be lowered from the center of the vehicle to aid in crossing trenches, mud, and other difficult terrain. A central tire pressure system allow the driver to control tire pressure for changing ground conditions.

The BRDM is known for its simplicity, low cost, and ruggedness. Later models of the BRDM are widely used across the world in a variety of roles, including utility, police, reconnaissance, antitank, and more.

■ BRDM-1

The BRDM-1 entered Soviet service in 1957. It was typically armed with a 7.62 mm SG-43 and up to 10 mm of welded steel armor provided protection against small arms and shell fragments.

The BRDM-1 was quickly determined to have a number of design flaws, including lack of observation devices and optics, no NBC protection, and the lack of a turret meant that the crew had to expose themselves to use the machine gun. The improved BRDM-2 began to replace it in frontline service after a few years.

Available until..........................1980

■ BRDM-2

The BRDM-2 replaced the earlier BRDM-1, with the addition of a turret, better armament, day/night optics, and NBC protection.

Command Variant: The BRDM-2U is a turretless command variant. equipped with extra radios, antennas, and navigation equipment.

■ BRDM-2 (AT-3)

Found in regimental ATGM platoons, this version of the BRDM had its turret replaced by a rack of six AT-3 Sagger ATGM launch rails.
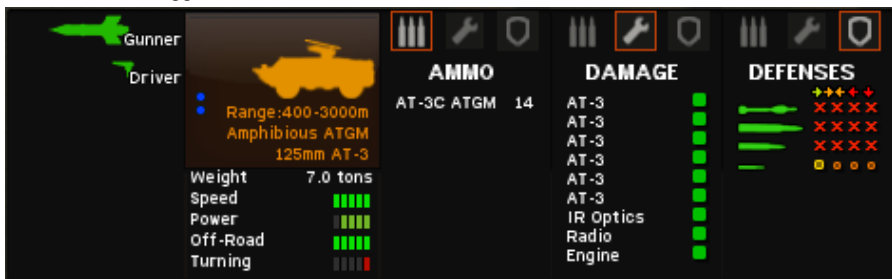
■ BRDM-2 (AT-5)

An improvement on the AT-3 variant, this version mounts the more effective AT-5 Spandrel ATGMs common to many Soviet-design fighting vehicles.

■ 9K31 Strela-1

The 9K31 Strela-1, known to NATO as the SA-9 Gaskin, is an anti-aircraft variant of the BRDM-2 that entered service in 1968. The turret has been replaced with a special superstructure housing four 9M31 Surface-to-Air Missiles (SAMs).

The Strela-1 fills the same regimental short-range air defense role as the Strela-10 that began to replace it in the 70s, operating alongside the ZSU-23-4 Shilka as a SAM counterpart.

■ Soviet Union Miscellaneous Vehicles

■ ZSU-23-4 Shilka

The ZSU-23-4 "Shilka" is a Self-Propelled Anti-Aircraft Gun (SPAAG) featuring a prominent radar dish mounted on a modified PT-76 chassis. It has four liquid-cooled 23mm automatic cannons mounted on the front of a large, flat, armored turret. Each of the autocannons has a cyclic rate of 850-1,000 rounds per minute for a combined rate of fire of 3,400-4,000 rounds per minute.

The Shilka is deadly against low flying aircraft, light armored vehicles, infantry and strongpoints. With its high rate of accurate fire, the ZSU-23-4 can even neutralize tanks by destroying their gun sights, radio antennas, or other vulnerable parts.
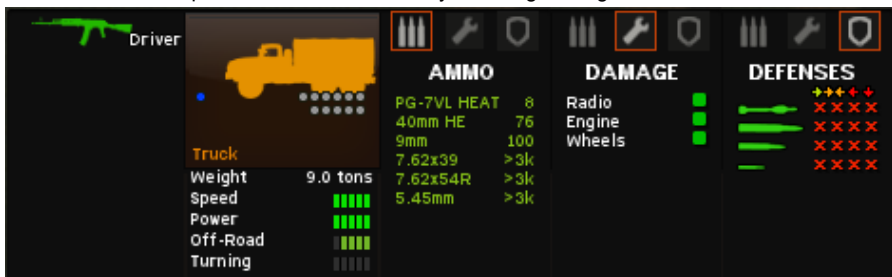
■ Soviet Union Unarmored Vehicles

■ UAZ-469

The UAZ-469 is an all-terrain vehicle manufactured by UAZ starting in 1971.

■ Ural-4320
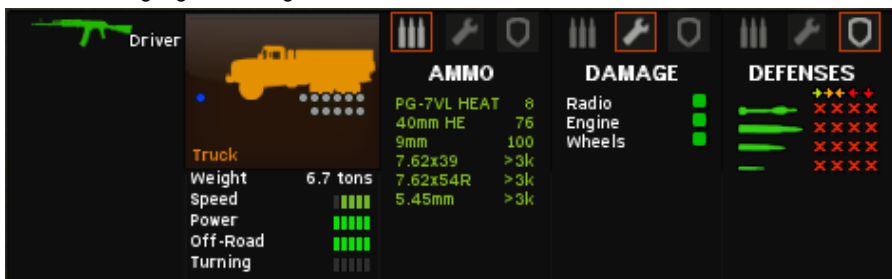
The Ural-4320 is a 6x6 general purpose truck that has been in production since 1977. Reliable and easy to maintain, the Ural-4320 has a V-8 diesel engine and 6x6 all-wheel drive. The Ural can reach speeds of 82 km/h and carry 6,000 kg of cargo.

■ Zil-131

The ZIL-131 is a general purpose 3.5 ton 6x6 army truck designed in the Soviet Union, the basic model being a general cargo truck.

■ Soviet Union Small Arms

Note: By default, all Soviet formations will equip soldiers with the 5.45 mm line of weapons (AK-74, RPK-74). If a formation is purchased with an Equipment Quality setting of Fair or Poor, the formation will be equipped with 7.62 mm weapons (AKM and RPK).

■ AKM

The AKM was introduced in 1959 as a lighter and cheaper version of the AK-47 with an effective range of 300 to 400 meters. It fires the standard Soviet era 7.62 x 39 mm round. The AKM was an improvement over the original AK-47 through its use of steel stampings instead of milled steel, which made it lighter and easier to produce.

The AKM is not a sophisticated weapon, having only crude sights, no bolt hold open device, and an inconveniently located safety/selector. Despite these problems it gained a strong and wide reputation for ruggedness and reliability. Tens of millions were sold to former Soviet aligned nations, making it one of the most common weapons on the battlefield today.

AKMS Variant: The AKMS is an AKM with a folding metal shoulder stock.

Cartridge .... *7.62x39 mm*
Feed system .... *30 round box magazine*
Rate of fire .... *Semi-automatic, automatic (600 rds/min)*
Effective range .... *350 m*

■ AKM w/ Grenade Launcher

The AKM could be equipped with the GP-25 underslung grenade launcher. The standard HE grenade was the VOG-25, a 40 mm caseless grenade. Grenades were muzzle loaded.

Cartridge .... *40 mm caseless grenade*
Feed system .... *Muzzle loaded*
Rate of fire .... *5-6 rds/min*
Effective range .... *200 m*

■ AK-74

Designed by Mikhail Kalashnikov in the 1970s to replace the ground-breaking AK-47, the AK-74 first saw combat in Afghanistan in 1979. Since then the AK-74 has become a ubiquitous firearm across the world. The AK-74 is a development of the AKM, replacing the 7.62x39 mm round with a smaller 5.45x39 mm cartridge. Smaller rounds have allowed for better accuracy and automatic fire handling, and more ammunition can be carried. The AK-74 shares about half of its parts with the AKM.

AKS-74 Variant: The AKS-74 is an AK-74 with a folding metal shoulder stock.

Cartridge .... *5.45x39 mm*
Feed system .... *30 round box magazine*
Rate of fire .... *Semi-automatic, automatic (650 rds/min)*
Effective range .... *500 m*

■ AK-74 w/ Grenade Launcher

AK-74s can be equipped with the GP-25 grenade launcher.

> *Cartridge* .... *40 mm caseless grenade*
> *Feed system* .... *Muzzle loaded*
> *Rate of fire* .... *5-6 rds/min*
> *Effective range* .... *200 m*

■ SVD

Also known as the Dragunov, the SVD is a semi-automatic sniper and designated marksman rifle first produced in 1963. The SVD was designed as a long range platoon support weapon.

Because of its primary role as a designated marksman rifle, the SVD has been designed to be well balanced and lightweight for maneuverability in battle, and semi-automatic instead of bolt action to allow for faster rate of fire. The SVD is also durable, cheap to produce, and accurate out to ranges of 800 m. A PSO-1 telescopic sight with 4x magnification is fitted in such a way that iron sights can still be used.

> *Cartridge* .... *7.62x54 mm*
> *Feed system* .... *10 round box magazine*
> *Rate of fire* .... *Semi-automatic*
> *Effective range* .... *800 m*

■ RPK

The RPK was a 7.62x39 mm light machine gun designed alongside the AKM, and intended to complement the assault rifle variant at the squad level. Modifications to the weapon focused on delivering sustained and accurate automatic fire, including a longer and heavier barrel that can better withstand sustained automatic fire and a folding bipod for better stability. Other modifications included a modified gas system and return mechanism, as well as structural reinforcements to key points on the weapon.

> *Cartridge* .... *7.62x39 mm*
> *Feed system* .... *30-40 round box or 75 round drum magazine*
> *Rate of fire* .... *Automatic (600 rds/min)*
> *Effective range* .... *800 m*

■ RPK-74

The RPK-74 is a 5.45x39 mm light machine gun based on the AK-74 design, intended to fill the same role as the RPK.

> *Cartridge* .... *5.45x39 mm*
> *Feed system* .... *45 round box magazine*
> *Rate of fire* .... *Automatic (650 rds/min)*
> *Effective range* .... *800 m*

■ PKM

The PK is a 7.62 mm general-purpose machine gun widely used
across the world in a variety of roles. The PKM is a lighter
modernized version introduced in the late 1960s. The PKM has
an integrated bipod and is fed with a non-disintegrating
ammunition belt.

Cartridge ....*7.62x54 mm R*
Feed system ....*Linked 100, 200, or 250 round belt*
Rate of fire ....*650-750 rds/min*
Effective range ....*800 m (bipod) 1,500 m (tripod)*

■ Makarov PM

The PM (Pistolet Makarova, meaning "Makarov's Pistol") Makarov
is a semi-automatic pistol that has been in service since the
1950s. The Soviet firearms designer Nikolai Makarov adapted
the German Walther Ultra to produce a pistol that would replace
the WW2-era Tokarev TT-33 and Nagant M1895. The Makarov has had a long service life
due to its balance of simplicity, reliability, and stopping power.

Cartridge ....*9x18 mm Makarov*
Feed system ....*8 round box magazine*
Rate of fire ....*Semi-automatic*
Effective range ....*50 m*

■ Soviet Union Special Weapons

■ RPG-7V1

Easily the most widely used and influential
shoulder-launched anti-armor weapon in
the world, the RPG-7(Rocket-Propelled
Grenade) is a portable anti-tank rocket
propelled grenade launcher. The RPG-7
began service in 1961 in the Soviet
Army, and replaced the RPG-2. The
RPG-7 is famous for being simple to
operate, cheap to produce, and reliable,
while its effectiveness has managed to
keep pace with armor advancements through a series of upgraded warheads.
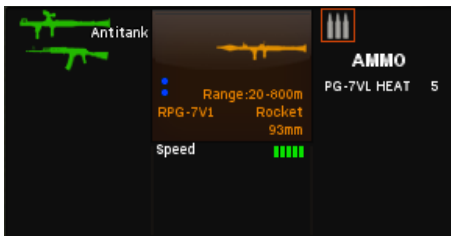
The design of the RPG-7 is simple and effective. An open-ended steel tube with wood wrappings
for heat protection accepts a rocket-propelled grenade from the front end. Only part of the
grenade inserts into the tube, with the warhead itself protruding from the tube front. The
weapon is aimed with a PGO-7 2.7x optical sight or with backup iron sights. A booster charge
ejects the grenade from the tube, and after 10 meters a rocket motor ignites, carrying the
grenade to its target aided by stabilizing fins. The RPG-7 is a recoilless weapon, resulting in
no recoil for the shooter due to the open back end of the tube.

Warheads for the RPG-7s grenade have been upgraded throughout its service life as armored
vehicles have become better protected. The most common warhead currently used is the
PG-7VL, introduced in 1977. This 93 mm HEAT warhead is effective against most armored

vehicles, and is a potentially lethal threat to any vehicle (even the Abrams) if it can hit the sides or rear.

The RPG-7 can be fired indoors in large rooms due to its two-stage propulsion system. However, the backblast can still be dangerous so care must be taken; your soldiers will suffer a small amount of suppression from firing RPG-7s indoors in Combat Mission.

Effective range........................ *200 m*
Armor Penetration................... *500 mm RHAe*

■ RPG-18

The RPG-18 Mukha ("Fly") is a light, single shot, short-range disposable multi-purpose rocket launcher. The RPG-18 fires a 64 mm PG-18 HEAT capable of 6 seconds of flight after launch before self-destructing. The RPG-18 is similar in both appearance and in functionality to the United States' LAW rocket.

Effective range........................ *200 m*
Armor Penetration................... *375 mm RHAe*

■ SPG-9

The SPG-9 is a 73 mm recoilless, smooth-bore, breech loaded man portable antitank weapon that fires a variety of ammunition. A fully assembled SPG-9 can be carried short distances, however it is usually broken down and carried in its component pieces due to weight.

The SPG-9 has a rate of fire of 6 rounds per minute and can fire either HE against soft targets or HEAT against hard/armored targets.

Effective range........................ *1,300 m*
Armor Penetration................... *PG-9 HEAT 300 mm RHAe*

■ AGS-17

The AGS-17 is an automatic grenade launcher of Soviet origin. The AGS-17 first saw combat in Afghanistan where it became a popular ground support weapon for infantry. Like other automatic grenade launchers, the AGS-17 is very effective against infantry

Cartridge.................................. *30x29 mm*
Feed system............................ *30 grenade linked belt*
Rate of fire.............................. *400 rds/min*
Effective range........................ *1,700 m*

■ AT-4B Spigot

The 9K111 Fagot (NATO reporting name AT-4 Spigot) is an Anti-Tank Guided Missile (ATGM) launcher developed in the 1960s to boost the anti-tank capability of Soviet BTR battalions. The man-portable missile system consists of a launch tube, missile, guidance box, sight, and tripod, which when complete weigh 22.5 kg.

Effective range .... 70 - 2,500 m
Guidance system .... SACLOS, wire-guided
Armor Penetration .... 460 mm RHAe

■ AT-7 Saxhorn

The 9K115 Metis (NATO reporting name AT-7 Saxhorn) is a man-portable ATGM launcher that is designed to be a lighter and more mobile version of the AT-4. The AT-7 is designed to support company-level operations, providing short range ATGM capability to infantry on the move.

The AT-7 primarily differs from the AT-4 in having a lighter firing post and a missile with a smaller fuel load. The lighter fuel load results in a shorter maximum range. The entire system weighs 10.2 kg. The AT-7 uses a booster to eject the missile from the launcher, allowing it to be used in enclosed spaces with some careful positioning on the part of the operators.

Effective range .... 40-1,000 m
Guidance system .... SACLOS, wire-guided
Armor Penetration .... 460 mm RHAe

■ MT-12 100 mm Anti-Tank Gun

A replacement of the T-12 gun that began service in 1961, the MT-12 was a 100 mm anti-tank gun developed by the Soviet Union. The MT-12 used a setup reminiscent of World War 2 guns, with a gun shield and a split trail carriage. The gun was smoothbore instead of rifled, so the MT-12's ammunition was finned for accuracy.


Effective range .... 3,000 m (APFSDS)
Rate of fire .... 4-6 rds/min
Armor Penetration .... 230 mm RHAe

■ Strela-2

The 9K32 Strela-2 (known as the SA-7 Grail to NATO) was a Man-Portable Air-Defense System (MANPADS). The Strela's design was heavily inspired by the American Redeye, but development issues meant that the Strela-2 was quickly followed by improved designs. The Strela-2 was shoulder-launched by a single operator, and fired a missile with a 1.15 kg HE warhead.


Effective range........................ *4,200 m*
Guidance system .... *Infrared homing*
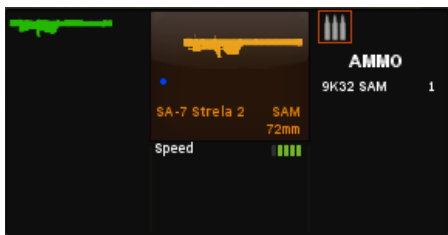
■ Strela-3

The 9K34 Strela-3 (known as the SA-14 Gremlin to NATO) was designed to account for the shortcomings of the earlier Strela-2. The design of the Strela-3 was very similar to the Strela-2, making the two launchers externally almost identical. The primary difference between the launchers was a new infrared homing warhead, which was less easily fooled by aircraft countermeasures.

Effective range........................ *4,500 m*
Guidance system .... *Infrared homing*
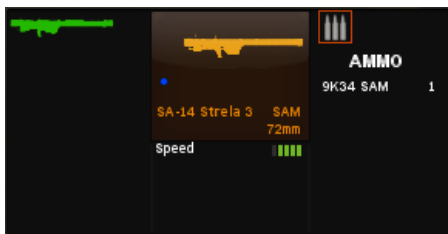
■ Igla

The Igla MANPADS entered service in 1981. Improvements over the Strela-3 consisted of an Identification Friend or Foe (IFF) system, operator aiming assistance, a larger missile with better aerodynamics, and increased lethality. Effectiveness of the warhead was increased via delayed impact fuzing, a charge to set off any remaining fuel, and terminal guidance that caused the missile to target the fuselage instead of engines. The system was also more resistant to infrared countermeasures.

Effective range........................ *5,000 m*
Guidance system .... *Infrared, dual waveband*

■ PM-43 120 mm Mortar

The PM-43 was the standard battalion-level mortar for Soviet motor rifle units.

Effective range...............316-6,000 m (HE)

Rate of fire................12 rds/min maximum

.....................................6 rds/min sustained

■ Soviet Union Artillery Support

■ D-30 122 mm Howitzer

A 122mm towed howitzer which entered service in 1963. The D-30 had a classic Soviet field gun design, with a low profile, attachable shield, and fast traverse. After the widespread adoption of self-propelled artillery, the D-30 and other towed artillery pieces were used mainly in support of BTR units.

Rate of fire ....8 rds/minute maximum

..4 rds/min sustained

■ D-20 152 mm Howitzer

The D-20 was a 152mm howitzer that began Soviet service in the 1950s.

Cluster Variant: The cluster variant of the D-20 replaces the high explosive shells with Improved Conventional Munition (ICM) shells, also known as cluster bombs. This type of warhead bursts at a distance from the ground, releasing multiple sub-munitions which then spread out, saturating an area with numerous small explosions.

Cluster bombs are especially effective against infantry in a large area. However, cluster bombs are rarer than normal HE owing to their more complicated and expensive design.

Note: Unlike American artillery ICM, Soviet artillery cluster bombs in this era are only HE, and not DPICM (dual-purpose). Their effect is only explosive, without any shaped charge penetrators for armor penetration. Soviet aircraft, on the other hand, can be equipped with DPICM.

Note: Combat Mission does not simulate unexploded ordnance (UXO).

Rate of fire ....6 rds/minute maximum

..1 rd/min sustained

■ 2A36 152 mm Gun

The 2A36 Giatsint-B was a towed field gun that entered service in 1975.

Cluster Variant: Swaps HE shells for HE cluster bombs, as described in the D-20 entry.

Rate of fire ....6 rds/minute maximum
.. 1 rd/min sustained

■ 2S1 122 mm Self-Propelled Howitzer

The 2S1 Gvozdika ("Carnation" in Russian) was a self-propelled howitzer armed with a 122 mm 2A18 gun. Using a modified MT-LB chassis, the 2S1 had a 360 degree traverse turret added which houses a gun modified from the towed D-30 howitzer. The 2S1 was the primary support artillery for tank and BMP units.

Rate of fire ....5 rds/minute maximum
.. 2 rds/min sustained

■ 2S3 152 mm Self-Propelled Howitzer

The 2S3 Akatsiya ("Acacia") was a 152 mm self-propelled howitzer. The 2S3 used a modified Object 123 chassis and the same gun as the D-20 howitzer. Like other Russian self-propelled artillery, the 2S3 was fully enclosed in armor and had a 360 traverse turret.

Rate of fire ....4 rds/minute maximum
*.. 1 rds/min sustained*

■ 2S4 240 mm Self-Propelled Mortar

The 2S4 Tyulpan ("Tulip") was a heavy self-propelled mortar. The 2S4 was accepted into service in 1971, and first saw action in Afghanistan. The rear-mounted, breech-loading M240 240 mm mortar was loaded by two automated drum magazines.

Cluster Variant: Swaps HE shells for HE cluster bombs, as described in the D-20 entry.

Rate of fire ....1 rds/min
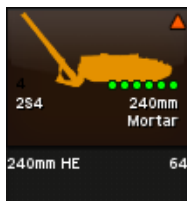
■ 2S5 152 mm Self-Propelled Gun

The 2S5 Giatsint-S ("Hyacinth") is a Soviet self-propelled gun that began production in 1976. The 2S5 was the self-propelled version of the towed 2A36 Giatsint-B.

Cluster Variant: Swaps HE shells for HE cluster bombs, as described in the D-20 entry.

> *Rate of fire ....6 rds/minute maximum*
> *..2 rds/min sustained*

■ 2S7 203 mm Self-Propelled Gun

The 2S7 Pion ("Peony", a flower) is a 203 mm self-propelled heavy gun, one of the largest conventional artillery piece in Soviet service. The blast from firing the 203 mm gun is so powerful that the crewmen must shield themselves from the concussive wave or risk injury.

Cluster Variant: Swaps HE shells for HE cluster bombs, as described in the D-20 entry.

> *Rate of fire ....2.5 rds/minute*

■ BM-21 122 mm Rocket Artillery

The BM-21 Grad ("Hail") multiple-launch rocket system is unquestionably the world's most widely-used rocket artillery system. What it lacks in accuracy it makes up for in volume. It can fire all 40 rockets in 20 seconds, then needs 10 minutes to fully reload the launcher
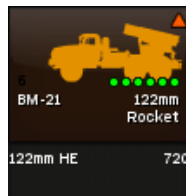
■ Soviet Union Air Support

■ Mi-24D Hind-D

The Mi-24, known by the NATO reporting name of "Hind", was the first helicopter to enter service with the Soviet Air Force as a combination of assault transport helicopter and gunship; the Mi-24 can carry troops to the battlefield and act as an armored gunship during the same mission. The Hind can also be used in close air support, anti-tank, armed escort, and air-to-air combat.

The Hind developed on the basis of the Mi-8 propulsion system: two top-mounted turboshaft engines, a five-blade main rotor, and a three-blade tail rotor. Behind the cockpit is a troop compartment with seating for eight troops or space for cargo. Two stub wings with weapon hardpoints are mounted on the middle of the helicopter, which can be loaded with a variety of weapon loadouts based on the mission. The Hind fuselage is heavily armored. The pilots sit in a titanium-armored tub topped with ballistic glass, with all-around protection from up to .50 caliber heavy machine gun bullets. The interior can be NBC protected.

The Hind exists in dozens of variants due its versatility and worldwide use. The Mi-24D Hind-D entered production in 1973 and had new, tandem "double bubble" cockpits for the pilot and gunner.

■ Mi-24V Hind-E

The Mi-24V, or Hind-E, entered production in 1976. The most significant upgrade of this model was the change to 9M114 Shturm, or AT-6 Spiral, ATGMs. These ATGMs were a significant upgrade over the older AT-2B, with increased speed, range, and lethality.

Over 1,500 Mi-24Vs were made, making it the most numerous Hind variant.

Note: Soviet doctrine had the helicopter as the primary aircraft assigned to Close Air Support (CAS) roles. Fixed-wing aircraft in the CAS role would have been a rare occurrence on a frontline battlefield.

■ Su-17M Fitter-C / Su-17M3 Fitter-H

The Sukhoi Su-17 attack plane family was developed out of the Su-7, a rugged swept-wing attack fighter dating back to the 50s. To improve the range and performance of the Su-7, Sukhoi modified the aircraft with pivoting swing-wings to produce the Su-17. A great number of models entered production until the family was finally discontinued in 1990.

Su-17M Fitter — Ground Attack		Su-17M Fitter — Ground Attack		Su-17M Fitter — Ground Attack		Su-17M Fitter — Ground Attack	
30mm HE	160	30mm HE	160	30mm HE	160	30mm HE	160
515kg bomb	6	266kg bomb	8	240mm HE	5	266kg bomb	1
						55mm HEAT	64
						275mm ATGM	4

Su-17M Fitter — Ground Attack		Su-17M Fitter — Ground Attack		Su-17M Fitter — Ground Attack		Su-17M Fitter — Ground Attack	
30mm HE	160	30mm HE	160	30mm HE	160	30mm HE	160
123kg bomb	2			515kg Cluster bomb	4	515kg Cluster bomb	2
275mm ATGM	2						

Su-17M3 Fitter — Ground Attack		Su-17M3 Fitter — Ground Attack		Su-17M3 Fitter — Ground Attack		Su-17M3 Fitter — Ground Attack	
30mm HE	160	30mm HE	160	30mm HE	160	30mm HE	160
515kg bomb	6	266kg bomb	8	240mm HE	5	266kg bomb	1
						55mm HEAT	64
						275mm ATGM	4

Su-17M3 Fitter — Ground Attack		Su-17M3 Fitter — Ground Attack		Su-17M3 Fitter — Ground Attack		Su-17M3 Fitter — Ground Attack	
30mm HE	160	30mm HE	160	30mm HE	160	30mm HE	160
123kg bomb	2			515kg Cluster bomb	4	515kg Cluster bomb	2
275mm ATGM	2						

■ Mig-27 Flogger-D / MiG-27K Flogger-J2

The MiG-27 is a variable swept wing ground-attack aircraft. Based on the same airframe as the Mikoyan-Gurevich MiG-23, the MiG-27 is essentially a specialized ground-attack version of said aircraft. Production of the line began in 1972, with just over a 1,000 aircraft being built.

MiG27K available beginning…1981

MiG-27 Flogger — Fighter Bomber	**MiG-27** Flogger — Fighter Bomber	**MiG-27** Flogger — Fighter Bomber	**MiG-27** Flogger — Fighter Bomber
30mm HE ... 260	30mm HE ... 260	30mm HE ... 260	30mm HE ... 260
515kg bomb ... 6	266kg bomb ... 8	240mm HE ... 4	266kg bomb ... 2
			Kh-25 275mm ATGM ... 4
MiG-27 Flogger — Fighter Bomber	**MiG-27** Flogger — Fighter Bomber	**MiG-27** Flogger — Fighter Bomber	**MiG-27** Flogger — Fighter Bomber
30mm HE ... 260	30mm HE ... 260	30mm HE ... 260	30mm HE ... 260
266kg bomb ... 2	Kh-25 275mm ATGM ... 2	515kg Cluster bomb ... 4	515kg Cluster bomb ... 2
Kh-25 275mm ATGM ... 2			
MiG-27K Flogger — Fighter Bomber	**MiG-27K** Flogger — Fighter Bomber	**MiG-27K** Flogger — Fighter Bomber	**MiG-27K** Flogger — Fighter Bomber
30mm HE ... 260	30mm HE ... 260	30mm HE ... 260	30mm HE ... 260
515kg bomb ... 6	266kg bomb ... 8	240mm HE ... 4	266kg bomb ... 2
			Kh-25 275mm ATGM ... 4
MiG-27K Flogger — Fighter Bomber	**MiG-27K** Flogger — Fighter Bomber	**MiG-27K** Flogger — Fighter Bomber	**MiG-27K** Flogger — Fighter Bomber
30mm HE ... 260	30mm HE ... 260	30mm HE ... 260	30mm HE ... 260
266kg bomb ... 2	Kh-25 275mm ATGM ... 2	515kg Cluster bomb ... 4	515kg Cluster bomb ... 2
Kh-25 275mm ATGM ... 2			

■ Su-25 Frogfoot

The Sukhoi Su-25 is a single-seat, twin-engine jet aircraft developed in the Soviet Union. It was designed to provide close air support for the Soviet Ground Forces. It is heavily armored and easy to service.

The Su-25 has an integrated GSh-30-2 30 mm cannon with 250 rounds.. There are eight pylons under the wings which can carry up to 4,000 kg of air-to-ground weapons, including 122 mm rockets, 515 kg bombs, and Kh-25ML ATGMs.

Available beginning.................1982

Su-25 Frogfoot — Ground Attack		Su-25 Frogfoot — Ground Attack		Su-25 Frogfoot — Ground Attack		Su-25 Frogfoot — Ground Attack	
30mm HE	250	30mm HE	250	30mm HE	250	30mm HE	250
515kg bomb	6	266kg bomb	6	123kg bomb	6	266kg bomb	4
80mm HEAT	40	80mm HEAT	40			80mm HEAT	40
						Kh-25 275mm ATGM	4

Su-25 Frogfoot — Ground Attack		Su-25 Frogfoot — Ground Attack		Su-25 Frogfoot — Ground Attack		Su-25 Frogfoot — Ground Attack	
30mm HE	250	30mm HE	250	30mm HE	250	30mm HE	250
123kg bomb	4	Kh-25 275mm ATGM	2	515kg Cluster bomb	6	515kg Cluster bomb	2
Kh-25 275mm ATGM	4			80mm HEAT	40		

Note: The SU-25 is a very rare and hypothetical asset for Cold War's base game, as by 1982 only a single squadron was operating, and that squadron was serving in Afghanistan.

■ FORTIFICATIONS

■ Bunker

A small reinforced concrete structure, which would typically be found around permanent defensive lines and installations. Bunkers provide excellent cover against small arms and light explosives, but are still vulnerable to direct-fire such as tank guns. Bunkers also provide an ammunition cache that can be used by infantry units to replenish and acquire ammo.

■ Bunker (Wood)

Bunkers made of wooden logs and sandbags can be found in hastily constructed defensive lines and impromptu strongpoints, where the occupying unit has had some time to set up hasty defenses. Although not nearly as protective as a concrete bunker, wood shelters can still provide valuable overhead protection from airburst shrapnel. Like the concrete bunker, wood bunkers also stock a large supply of infantry ammunition.

■ Trench

Trenches are usually part of larger defensive works and semi-permanent defensive lines. They allow for covered movement for units and formations and provide good protection against most enemy fire, and fair protection against indirect fire. Trenches "snap" together to form a line automatically when placed close together in the editor or Setup Phase.

■ Foxhole

Foxholes are makeshift defensive improvements usually dug hastily by infantry units. Unlike trenches, a foxhole unit usually only provides enough cover for a team of infantry. Foxholes offer fair cover against enemy fire.

■ Hedgehog Obstacles

Hedgehog obstacles represent any number of improvised structures that are meant to deny vehicle traffic for a short time. Often these are metal objects that jut out of the ground in a dense pattern, and would wreck the mobility of any vehicle that tried to cross them - even tanks.

■ Sandbag Wall

Sandbag walls are makeshift defensive fortifications to provide fair cover against enemy fire. Sandbag walls offer limited protection for both infantry and vehicles positioned behind them.

■ Barbed Wire

Barbed wire consists of a barbed wire fence on a wooden structure or a roll of concertina wire, and is meant to slow down (not stop) infantry units. Barbed wire "snaps" together to form a line automatically when placed in vicinity in the editor or Setup Phase.

■ Mines

There are three "flavors" of minefields in the game: anti-personnel, anti-tank, and mixed (meaning: a mix of both anti-personnel and anti-tank mines in the same field). Obviously, anti-personnel mines are meant to harm infantry primarily, while anti-tank mines are usually bigger and pack more punch, and are intended to disable or at least immobilize vehicles and

tanks. Anti-tank mines cannot be set off by infantry on foot, but anti-personnel mines can be set off by vehicles.

Troops moving through minefields have some ability to notice the mines without exploding them. This is much more likely when the soldiers are crawling or walking (and to a lesser extent, "hunting"), the soldiers are engineers or are experienced, and if the minefield has already been discovered (e.g. by setting off a mine)

Engineers have the ability to mark known minefields. After a minefield is marked by an engineer unit, other units may safely (but slowly) move through it without running the risk of setting off additional mines. See the Mark Mines command in the Command chapter of the engine manual for more details.

■ Target Reference Point

Target Reference Points (TRPs) are a special type of fortification unit, representing a pre-sited location for indirect fire support. Any fire support missions that target the immediate vicinity of a TRP will have a shorter delay until delivery, greater accuracy, and move directly to Fire For Effect without the need of a Spotting phase. Furthermore, the spotter unit does not need LOS on the TRP in order to order a fire mission.

Unlike all other units, TRPs are not restricted to set up zones and may be placed anywhere on the map during the Setup Phase. However, once the game has begun, TRPs can never be moved. TRPs can never be spotted by the opponent.

■ ICONS AND REFERENCE

Combat Mission: Cold War makes extensive use of various icons to allow the player to spot vital information in the game user interface at a glance. Below is a list of the most important icons used in the game and their description.

■ Vehicle Defenses Icons

HEAT warhead (e.g. ATGM, HEAT shell)

Large caliber (e.g. 105 / 125 mm tank shells)

Medium caliber (e.g. 25 / 30 mm auto cannon shells)

Small caliber (e.g. rifle, machine gun bullets)

■ Defensive Equipment Icons

Many armored vehicles are fitted with smoke launchers. When deployed, these launches eject multiple smoke grenades to the front of the vehicle and form a defensive smoke screen so that the vehicle can retreat or reposition safely. A few smoke launchers use IR-blocking smoke to prevent vehicles with thermal imagers from peering through the screen.

■ Instant Command Buttons

■ Communication Links

Voice

Visual (Close)

Visual (Distant)

Radio

■ Branch Icons

Branch insignia indicates what branch the selected unit belongs to, not the identity of the unit itself. Thus, a BMP that has been selected from a Tank branch formation will have the branch icon of a tank.

US Infantry Brigade

US Mechanized / Armored Brigade

US Armor Only (Quick Battles only)

Soviet Infantry Only (Quick Battles only)

Soviet Motor Rifle Regiment

Soviet Tank Regiment

■ Special Equipment

Night Vision Equipment

Numbers on this icon denote how many soldiers in the team or squad are equipped with any type of night vision equipment.

Binoculars

Binoculars increase unit spotting ability at long range. Commonly carried by small unit leaders, weapon crew members, scouts, observers, and officers.

Demolition charge

Demo charges are carried by engineer specialists as well as Breach teams. Demo charges can be used to attack vehicles at close range, or open entry points into buildings, walls, and fortifications with the Blast Command.

Launchers

The launcher contains the optics, launch tube, and/or targeting software for the missile or rocket system. Both the launcher and ammunition for the weapon system must be possessed by a unit in order to use the weapon system.

Dragon Launcher   **RPG-7 Launcher**

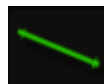**Stinger/Redeye Launcher**   **Strela/Igla Launcher**
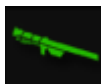
Anti-Tank Guided Missile

This item signifies one missile for a reusable ATGM launcher. Systems that use these include the Dragon, TOW, AT-3, AT-4, and AT-7.

Surface-to-Air Missile
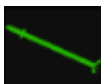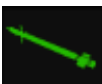
This item signifies one missile for a reusable MANPADS launcher. Systems that use these missiles include the Redeye, Stinger, Strela, and Igla.
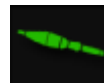
Disposable AT Launchers

These items are single-use launchers. Once the unit fires the launcher, it is discarded. Many vehicles that transport rifle squads will carry additional disposable launchers for acquiring.

M72A3 LAW   **RPG-18**

RPG Grenades

These grenade rounds are used for RPG-7 launchers.

■ Rank Icons

■ United States

Private (PV1)

Staff Sergeant

2nd Lieutenant

Private (PV2)

Sergeant First Class

1st Lieutenant

Private First Class

Master Sergeant

Captain

Specialist

First Sergeant

Major

Sergeant

Sergeant Major

Lieutenant Colonel

■ Soviet Union

Private

Sergeant

Lieutenant

Private

Senior Sergeant

Captain

Efreitor

Sergeant Major

Major

Junior Sergeant

Junior Lieutenant

Lieutenant Colonel

■ Floating Icons

Headquarters

Infantry

Combat Engineer / Sapper

Recon / Scout

Sniper
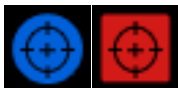
Forward Observer / Air Controller

Machine Gun

RPG / ATGM

Antitank Gun

MANPADS

Truck / Soft Vehicle

Scout Car

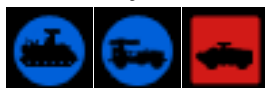**Armored Personnel Carrier (APC)**

Infantry Fighting Vehicle (IFV)

Tank

Tank Destroyer

Self-Propelled Anti-Aircraft (SPAA)

Continued on next page

Mortar

Grenade Launcher

Ammo Dump

Fortifications

Obstacles

Bunker

Mines

■ Stock Mod Tags

[ntc] - For camo patterns and terrain textures in the NTC region.

[rubble] - Turns Ground Heavy Rocks into urban rubble.

[night] - Adds camouflage face paint to soldier faces. Can also be used for other nighttime-related textures such as special camo patterns.

[cold] - For environmental textures and camouflage patterns in cold (not snow) weather.

[muddy] - For muddy environmental textures.

[spring] - For spring environmental textures and camouflage patterns.

[autumn] - For autumn environmental textures and camouflage patterns.

[lawn] - Turns Ground Red Dirt into mowed lawn grass.

[trash] - Turns Ground Hard into landfill trash.

[trashsoft] - Turns Ground Sand into landfill trash.

■ COLD WAR CREDITS

Cold War Leads
Bil Hardenberger
Justin Miller
Warren Miron

Game Design
Charles Moylan
Stephen Grammont

The Battlefront Team
Charles Moylan
Stephen Grammont
Cassio Lima
Mike Duplessis
Christopher Nelson
John Costello

Programming
Charles Moylan

Lead Tech Support
John Costello

3D Models / Animations
Cassio Lima Studio

User Interface Artwork
Jean-Vincent Roy

2D Artwork
Mike Duplessis
Cassio Lima
Christopher Nelson
Jean-Vincent Roy
Pete Wenman

Title Art
Cassio Lima

Game Manuals
Bil Hardenberger
Justin Miller
Warren Miron
Christopher Nelson

Quick Battles
Matt Adema
Karl White

Campaign Designers
Bil Hardenberger
George McEwan
Kelson Miron
Warren Miron
Pete Wenman

Scenario Designers
Matt Adema
Mike Duplessis
Brent Fox
Gregory Keller
Chad Lennerts
Jon Martina
George McEwan
Justin Miller
Kelson Miron
Warren Miron
Markus Mohr
Kari Salo
Karl Saville
Pete Wenman
Thomas C. West
Karl White

Beta Testers
Pete Abrams
Matt Adema
Boris Ajdukovic
David Anderson
Kip Anderson
Steven Burke
Joe Callan
Jean-Charles Hare
Scott Coulson
Alan K. Davis
Ben Donaldson
Rick Felger
Brent Fox
Gregory Keller
Jerry Lenaburg
Chad Lennerts
Ian Leslie
Jon Martina
Robert Massart
George McEwan
Ken McManamy
Justin Miller
Kelson Miron
Markus Mohr
John Osborne
Josh Peterson
Philip Rassudin
Kari Salo
Karl Saville
Ian Schwulst
Joe Shaw
David Sluiter
Jeffrey Smith
Phil Stanbridge
Luke Wallace
Pete Wenman
Thomas West
Continued on next page

TO&E Special Thanks
Alan K. Davis
Philip Rassudin

Music
Alexander Vasenin
sigmadelta

Misc Sound Effects
Alan K. Davis

Still Images
U.S. National Archives

Maps
OpenStreetMap

Matrix Games

CEO
Iain McNeil

CFO
JD McNeil

CMO
Marco A. Minoli

Technical Director
Philip Veale84

Creative Director
Richard Evans

CEO, Matrix Games LLC
Erik Rutins

Senior Producer
David Sharrock

Producers
Mark Hardisty
Neil McKenna

Project Manager
Josh Fan

Assistant Producers
Jenny Zsibrita
Anny Sims

Marketing Coordinator
Francesca Passoni

Brand Manager
Alberto Casulini
Roberta Migliori
Francesco Mantovani

Social Media Manager
Bruno Bontempo

Media Relations
Paolo Paglianti

Production Design
Adriana Bienati

Lead Artist
Pat Ward

Artist
Koen Bekkema

Manual Layout
Myriam Bell

Operations Lead
Matthew Ravenwood85

Operations Team
Sam O'Neill
Joseph Stephenson

Administration
Dean Walker

Admin Assistant
Richard Baker

Customer Support Staff
Paulo Costa
Joseph Miller

Web Development
Valery Vidershpan
Andrea Nicola
Fernando Tur