

FROM THE CREATORS OF THE

AWARD-WINNING CLASSIC COMES

THE MOST REALISTIC

SIMULATION OF MODERN

GROUND WARFARE ANYWHERE.





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CHAPTER 1 INTRODUCTION

When the original *M1 Tank* Platoon was released in 1989, the centerpiece of the simulation, the M1A1 Abrams Main Battle Tank, had yet to be proven in real world combat. Since that time, it has not only proven itself a successful deterrent, but also a powerful force to ensure peace through superior firepower. In **Operation Desert Storm**, Army and Marine M1s destroyed thousands of enemy vehicles in less than five days, with minimal losses to combat action. Although this is clear testimony to the absolute dominance of the M1A2 Abrams MBT on today's mechanized battlefield, one must never forget that, devoid of highly trained, highly motivated crews, the M1 is little more than a very expensive Pentagon paperweight.

M1 Tank Platoon II allows you to fill these billets and experience the modern combat arena as never before. The emphasis of the game is tactical, rather than strategic, with actions resolved at the platoon and company level. Opposing forces might approach battalion strength—simply to provide an adequate challenge to a strong force of M1s—but don't expect to get bogged down in protracted toe-to-toe standoffs. The M1 is a superb open country tank, much like the Panther was in World War II, so the action centers on the key tactical axioms of fire and movement.

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To win, you will need to take advantage of terrain, coordinate supporting assets like artillery and air strikes efficiently, and—most important of all—take care of the men entrusted to your command. In modern combat, it is quite possible to accomplish the mission but still be subjected to censure if you allow "unacceptable losses." The same holds true in *M1 Tank Platoon II*, in which the inherent impact of public opinion on political decision making extends to the battlefield. It is a burden all real world commanders must bear, and to neglect to include it here would be a disservice to them.

Finally, despite the extensive media coverage of Operation Desert Storm and the publication of many references about modern armored warfare, both in print and on the Internet, it is probably safe to assume that most of you didn't purchase this game already equipped with all the knowledge you need to excel in command of a tank platoon. Therefore, we have taken the liberty of creating a multitiered training course to convey this knowledge. In addition to this manual, you will find two training campaigns with multimedia sections and the **M1 Tank Platoon II War College**, a MicroProse Digital Strategy Guide (DSG), on the CD-ROM. These will give you a thorough grounding in U.S. and opposing forces (OPFOR) doctrine before you enter the crucible of combat. For those players who insist on crossing the line of departure without this training, you need only familiarize yourself with the first two sections of this manual, **Navigating the Interface** and **Taking Command**, to begin play right away. Either way, button up the tank commander's hatch, because you are in for one hell of a ride!



Before you can proceed, you must make sure that *M1 Tank Platoon II* is installed and running on your computer system. This section is all you need to get started. If you have all the proper gear in your system, you're ready to install the game and begin playing.



REQUIREMENTS

For *M1 Tank Platoon II* to work, there are a few things your computer *must* have.

- The processor has to be a Pentium or better. The system speed should be at least 133 MHz (megahertz). For optimum play, we suggest a system speed of 200 MHz or more.
- You must have a double-speed (2X) or faster CD-ROM drive.
- Your computer must have at least 16 Mb (megabytes) of RAM (random access memory) installed. (This is the working memory; do not confuse it with the Mb of storage space on your hard drive.)
- You must have Windows 95 (or newer) installed and running on your computer.
- Since the installation program will copy parts of *M1 Tank Platoon II* onto your hard disk, you must have sufficient empty storage space on your hard drive. How much you need depends on the installation options you choose. The installation program advises you how much space you need and how much you have available.
- The graphics must be SVGA quality or better, capable of at least 256-color, 640 X 480 mode.

It's not required, but you'll get the best game experience and optimum realism if you have a graphics card with 3-D acceleration. *M1 Tank Platoon II* supports both the Glide and Direct3D formats, but no others.

- There must be a mouse (or a device that fulfills the same function) attached to the computer.
- You should have a working joystick attached to the computer. (This is not *absolutely* necessary. It is *possible* to play the game without a joystick, but it's tremendously difficult.)

If you think you have all of these, but still have a problem running the game, please contact MicroProse Customer Support for assistance.

TANKEPLATOON II

INSTALLATION

Before you can play *M1 Tank Platoon II*, the installation program must copy some files onto your hard disk. To have it do so, follow these instructions:

- Turn on your computer.
- Open the CD-ROM drive, place the *M1 Tank Platoon II* CD-ROM in there, and close the drive.
- This is a Windows 95 AutoPlay CD-ROM, which means that when you put the CD-ROM into your drive, the program starts itself. Click the **Install** button to start the installation program.
 - **Note:** If, for some reason, the AutoPlay feature does not function, here's how to start the installation program yourself:
- Open the **My Computer** window, then double-click on the listing for your CD-ROM drive (usually 'D').
- Touble-click on the file SETUP.EXE. That runs the installation program.
- The biggest decision you need to make during the installation process is to what directory you want to install the game. When you're prompted, you can accept the default, type in a directory path, or use the **Browse** button to seek out the directory. Click **OK** when you're done.
- After the game itself has been installed, the installation program moves on to a few necessary utility programs. If you do not already have these on your system, you're prompted to install each one. The utilities include Microsoft's DirectX drivers (version 5), and two sets of drivers for 3-D graphics accelerator cards: Glide and Direct3D.
- When the installation program is done, it returns you to Windows.



PLAYING

Once the installation and set-up are complete, the simulation is ready to play. To start:

Make sure that the *M1 Tank Platoon II* CD-ROM is in the drive.

Select *M1 Tank Platoon II* from the Windows 95 Start menu.

This section assumes you have followed the installation instructions for *M1 Tank Platoon II* (in the Technical Issues chapter) and are configured to run the simulation using a combination of joystick, mouse, and keyboard commands. When you first start up the game, you're treated to a stirring re-creation of some of the events that occurred during the Battle of 73 Easting. In future sessions, if you want to skip this animated sequence, simply press (Spacebar) to proceed directly to the Main Menu. On this menu, you find the following options:



NAVIGATING THE INTERFACE



TANK PLATOON

- Game Configuration: This option allows you to configure the overall parameters of the game to accommodate your style of play, as well as customize the levels of sound and graphic detail to optimize performance on your computer. For a detailed explanation of these features, see Configuration Options.
- Single Player: Select this option to play M1 Tank Platoon II solitaire against the computer opponent, which has been modeled to adhere to real world Soviet tactical doctrine. You can embark on any of the 10 prebuilt scenarios or five campaign actions. Each begins with an appropriate tactical briefing, but if you want to know more about that scenario or campaign prior to play, consult the Battle Briefs and Campaign Briefs sections of this manual.
- Multiplayer: This option permits either head to head or cooperative play via modem or local area network (LAN) connections for up to five players (four commanding M1s and one acting as the OPFOR commander). See Multiplayer Options for the details.

Training: The old adage, "Train like you fight, and fight like you train," separates the cadre of professional warriors from armchair generals. Superior training and operational readiness contributed more to the Coalition victory over Iraq than all other factors combined. To prepare for the challenge of *M1 Tank Platoon II*, you can embark on a course of instruction that includes concentrated study of equipment, tactics, and armored warfare doctrine and culminates in live fire exercises in a training environment. For an overview of this curriculum, read Training.

CONFIGURATION OPTIONS

M1 Tank Platoon II uses a terrain modeling engine far superior to that of its predecessor to model a wide variety of topographical features—from barren wadis in the desert to the rolling countryside of Eastern Poland—in a level of detail that promotes proper tactical use of these features. Naturally, this detailed 3-D environment places varied levels of demand on individual systems. This menu allows you to customize various settings to optimize the performance of the game on your particular computer system. To leave this screen and return to the previous menu, press the Esc key.

GRAPHICS

M1 Tank Platoon II takes advantage of the co-processing capability of many of the current generation of 3-D graphics acceleration boards. Since the performance characteristics of these boards vary, however, this menu provides you with control over the display capabilities of the game engine. At the *Low Detail* setting, you sacrifice some of the graphic detail of both vehicles and terrain features in return for a significant boost in frame rate (the speed at which on screen objects are animated). At the *Normal Detail* setting, which is the default setting for most computers, you find a good balance between graphic detail and speed. Newer machines equipped with Pentium 200 (or higher) processors and 3-D accelerators can run *M1 Tank Platoon II* at the highest level of detail without experiencing any degradation in frame rate.

SOUND & MUSIC

M1 Tank Platoon II is fully compatible with the Sound Blaster audio standard. Additionally, you can toggle both the background music and the digital sound effects on and off using this menu. For a more realistic battlefield experience, we encourage you to enable the sound effects and music.

Good simulation design requires creating a detailed imitation of real world operating conditions (at the highest degree of difficulty), while still providing easy accessibility for new simulations players (at the lowest difficulty settings). *M1 Tank Platoon II* accommodates the entire spectrum of player skill levels by providing not only modifiers to the enemy AI level, which is a standard feature of most simulations, but also handicaps to friendly force capabilities. Here is how these settings work.

TANK PLATOON

The OPFOR—or Opposing Force—uses CIS Doctrine and tactics at all of the settings, so the computer opponent will make proper tactical decisions even at the *Easy* level of difficulty. The choice of the level of difficulty determines enemy crew quality and the equipment used in the OPFOR force mix. As such, the impact of selecting either the *Normal* or *Hard* settings is to provide better equipment and more extensive support to the OPFOR forces.

The difficulty setting also influences the availability of support units, as well as the number and types of attached platoons in any given mission. Under the *Easy* difficulty setting, you can expect support from multiple artillery and air units, as well as additional tanks and infantry fighting vehicles attached to your platoon. When you use the *Hard* setting, artillery and air support is limited, and attached units tend to be lighter units.

SINGLE PLAYER

When you select **Single Player**, you are sent directly to the PLATOON RECORDS screen. You cannot enter either a single battle or a campaign without first selecting or creating a platoon to command. Once you select a platoon, you go to the SINGLE PLAYER screen. Here you are presented with three options: **Platoon Records, Single Battle**, and **Campaign Game**.

PLATOON RECORDS



This screen appears any time you select **Single Player**. You can also reach it from the SINGLE PLAYER screen, if you wish to change your platoon. The PLATOON RECORDS screen is a list of eight active platoons; each entry includes the following basic information about each unit:

Yelatoon Name

Yelatoon Status (Retired, Available, or In Campaign)

X Average Skill Level

Service (Marine, Army Armored regiment, or Cavalry Unit)

- Farent Unit's Name
- 🖉 Parent Unit's Crest

To select a platoon, simply move the mouse cursor over it (the border of that unit is highlighted) and left-click. At the bottom of the screen, you'll notice the following buttons: **Delete Platoon**, **Create Platoon**, view platoon and **Done**. Before you can create a new platoon, you must delete one of the pregenerated ones to provide an empty slot. (Make sure you review each platoon's record closely before selecting which you want to delete.)

TANK PLATOON

When you create a new platoon, you have the option of making it an Army Armored regiment, Army Cavalry regiment, or Marine Tank battalion. You can also select the parent unit of the platoon, by crest and battalion. The crests of all current active duty units in the U.S. Army and U.S. Marine Corps are included. The type of parent unit you select determines the type of artillery and air support you will receive and the type of attached units available in any campaign. This selection has no effect on the single battles.

PLATOON CONTROL



Once you've created a platoon, you automatically proceed to the PLATOON CONTROL screen, where you can review the skill ratings of the platoon and change the names of individual soldiers and tanks.

You can also name each of the four M1s in the platoon, if you wish. To change the name of one of your tanks, select **Edit**, then left-click on the **Name** field to erase the name and type in the new one. When you're satisfied with the name, press <u>Enter</u>.

Regardless of whether a tank is named or not, it will receive a two-digit military designator. The first digit specifies the platoon number (1–4). The second digit specifies the tank's position within the platoon, as listed under organization. For example, the Second Platoon Sergeant's tank would be designated 24.

1) Platoon Leader

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- 2) Leader's Wingman
- 3) Sergeant's Wingman
- 4) Platoon Sergeant

Each platoon consist of four tanks and their crew of four. This gives a total of 16 men and four vehicles. The table below shows crew member organization of the tanks.

| | Tank #1 | Tank #2 | Tank #3 | Tank #4 |
|----------------|---------|---------|---------|---------|
| Tank Commander | PLT LDR | TC2 | TC3 | PLT SGT |
| Gunner | GNR1 | GNR2 | GNR3 | GNR4 |
| Driver | DVR1 | DVR2 | DVR3 | DVR4 |
| Loader | LDR1 | LDR2 | LDR3 | LDR4 |
| | | | | |

To change the name of one of your crew members, select **Edit**, then leftclick on the **Name** field to erase the name and type in the new one. When you're done, press <u>Enter</u>. Each crew member possesses skills that affect the vehicle's combat efficiency. These skills correspond to the crewman's position on the crew and can increase as the crew member gains experience in that position. The skills and what aspects of the tank's operation they affect are:

TANK PLATOON

| Skill | Affects |
|-----------|--|
| Loader | Reload Time |
| Driver | Reaction Time and Exact Tank Positioning |
| Gunner | Accuracy and Target Acquisition Time |
| Commander | Spotting and Reaction Time |

DUTIES AND RESPONSIBILITIES OF THE TANK CREW, FROM U.S. ARMY TANK PLATOON MANUAL FM 17-15

TANK COMMANDER (TC)

The TC must know and understand the company mission and the intended battle plan to be prepared to assume the duties and responsibilities of the platoon leader or platoon sergeant and execute the mission in their absence if necessary. These requirements demand that the TC maintain situational awareness by using all available optics for observation, by eavesdropping on radio transmissions, and by monitoring the intervehicular information system (IVIS).

GUNNER

The gunner searches for targets and aims and fires both the main gun and the coaxial machine gun. The gunner serves as the assistant TC and assumes the responsibilities of the TC as required. He also assists other crew members as needed. He is also responsible for maintaining the IVIS digital links.

DRIVER

The driver moves, positions, and stops the tank. While driving, he constantly searches for covered routes and for covered positions to which he can move if the tank is engaged. He maintains his tank's position in formation and watches for visual signals. During engagements, he assists the gunner and TC by scanning for targets and sensing fired rounds.

LOADER

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The loader loads the main gun and the coaxial machine gun ready box; he aims and fires the loader's machine gun. Before engagement actions are initiated, the loader searches for targets and acts as air or antitank guided missile (ATGM) guard. He also assists the TC as needed in directing the driver so the tank maintains its position in formation.

PLATOON ORGANIZATION

None of these positions represents *you* (your in-game alter ego), and the game does not end if, for example, the Platoon Leader is killed in action. Rather, you are the "guiding spirit" of the platoon, coordinating their actions and seeing to their long-term survival. Nevertheless, the realities of war are such that casualties will eventually impact unit integrity and command and control. Periodically, your troops will have to fill open positions other than the ones they normally hold. Unless they have held these positions previously, their abilities in the new job may be limited. As the guiding spirit of the platoon, you need to understand the chain of command within individual vehicles and at the platoon level.

The Chain of Command within each vehicle is as follows, in decreasing order of seniority:

Tank Commander Gunner Driver Loader

Using the same order of precedence, the Chain of Command for the platoon is as follows:

PLT LDR PLT SGT TCs by seniority GNRs by seniority DVRs by seniority LDRs by seniority

After each mission, you have an opportunity to make more leisurely decisions about the replacement of combat losses, advancement of existing members of the platoon, and awards for meritorious service. For a complete rundown of these functions, see **Personnel Management** and **Awards & Advancement** in the **Commanding a Platoon** section.

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SINGLE BATTLES





This option allows you to fight a single, non-campaign battle. You can select any of the actions provided with the game (overviews of each are included in the **Battle Briefs** section) or choose **Random Action** to instantly go to war on a hostile battlefield against an enemy of unknown strength and composition.

The actions you can select are divided into two groups. The first group is a series of actions based on actual battles fought during the Gulf War. These battles are designed to reflect the real battles as closely as current information allows. The second group is based on the familiar NATO vs. the Warsaw Pact confrontation. These battles are based on a scenario of a post-Soviet Russia, controlled by an ultra-nationalist or neo-communist government, attacking a NATO that includes many Eastern European nations.

CAMPAIGN GAMES



The **Campaign** option is what you use to start or resume a campaign game using the platoon you selected. If the active platoon is currently involved in an unfinished campaign, the game loads that campaign and proceeds to the appropriate CAMPAIGN BRIEFING screen. If the platoon is not in the middle of an active campaign, you're prompted to select one from the THEATER SELECTION screen. For more information on the various campaigns, see the **Campaign Briefs** section. Regardless of the campaign you choose, it is important that you understand the differences between the *M1 Tank Platoon II* campaign system and those of other simulation games you might have played. Many games simply link multiple stand-alone, set-piece battles together sequentially and call it a campaign. This can lead to even the best game becoming stale and repetitive before its time. The *M1 Tank Platoon II* campaign system, by comparison, is fully dynamic.

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The Theater Commander of each campaign has many strategies to chose from, each of which flows logically from the opposing orders of battle and the military and political objectives of the operation. At the platoon level, you have no say in strategic decision making, only tactical execution. Further, you are only one unit out of many fighting across a broad front. As such, your initial deployment and tasking can change each time you begin a given campaign. Once a campaign is underway, your performance in a given mission, as well as the performance of all the other U.S. forces in the sector, affects both the type of mission you receive subsequently and how much of the enemy order of battle remains to oppose you. For example, if your first mission is a "move to contact," and the enemy stops you or other U.S. forces aren't as successful as you are, the next mission could be a "defend in sector." If you succeed in that assignment, you might be ordered to conduct a "hasty attack" next.

Most of this "follow-on tasking" will flow naturally from your prior experience on the battlefield, but there will be exceptions that you must understand. Remember, you are not fighting in a vacuum; there are other U.S. forces in the theater, spearheading operations on both of your flanks. Their success or failure rate may be quite different from yours on any given day. You don't have the big picture. Your Theater Commander does, so trust the orders you are given and execute them to the best of your ability. Also, if your unit has to be pulled off the line to replace losses—instead of just refueling and rearming to go right back out—you must understand that the entire strategic picture can change during your absence. The enemy forces are dynamically altering their battle plans, too. They will properly reorient themselves to meet your threat, based on the tactical situation and taking advantage of the terrain features—just as you must learn to do. You won't find the same RPG team hiding behind the same rock the next time you enter a given area of operations. To survive in such a fluid

environment, including the "fog of war" (the inherent confusion associated with battle), you must maintain your situational awareness and have the tactical flexibility to respond to changing circumstances in a timely fashion.

MULTIPLAYER

TANK PLATOON II



Use the MULTIPLAYER screen to enter a modem or network game. The multiplayer game functions almost exactly like single player, but with slightly customized game play that takes advantage of the personal interaction possibilities of a multiplayer game. There are three options on this screen: **Choose Service Provider**, **Host Game**, and **Join Game**.



CHOOSE SERVICE PROVIDER

Both the host and any players wishing to join a game must select the mode of communication used to connect with other players. There are 3 options:

- Use this to play on a local area network running the IPX **IPX LAN** protocol.
- If you're playing with one other player over a modem Modem connection, use this option.
- When you're playing over a direct serial cable hookup to one Serial other computer, select this.

Up to five players can participate in a multiplayer game using the IPX connection. Only two players can play using a modem or serial connection.

HOST GAME



Once you select Host Game, you are taken to the PLATOON RECORDS screen. You cannot host a game without first selecting or creating a platoon to command. The PLATOON RECORDS screen functions exactly as it does in single player mode. If a platoon that's involved in a campaign is selected, the multiplayer game takes place in the next battle in that platoon's current campaign. If the platoon selected is free, you're taken to the next multiplayer screen, where you can choose any of the single actions or start a new campaign. Details on the available actions are in the Battle Briefs section. All the normal campaigns are available for cooperative play. See **Campaign** Briefs for details on the campaigns.

JOIN GAME



This option takes you directly to the READY ROOM, where you can join any one of the listed multiplayer games. Unless you are initiating a new multi-player game, always use Join Game to enter a network game. Once players have filled all the available positions, the game is full and no longer listed as available.

READY ROOM

Once you've finished the multiplayer setup, you go to the READY ROOM. Here, you can join games, chat with other players, and coordinate your tactics before deployment. Once a game fills up, all players are given the battle briefing. Afterwards, all players proceed to the BATTLE PLANNING screen for their side. You have a limited amount of time to position units and any assigned supporting forces before the game begins. Take advantage of this planning period, so that you can avoid running around issuing initial battle plan orders after the rounds start flying. The chat mode remains active during the planning phase.

TANK PLATOON

ASSIGNING PLAYERS

The host of the game is responsible for assigning players to the open positions in each battle. In five-player games, four players are assigned to the individual tanks in the active platoon, and the fifth player is assigned as the OPFOR Battlemaster. In two-player games, both players can command tanks in the platoon, or one of the players can be the OPFOR Battlemaster and fight the other player.

If the current battle is a campaign battle, the host player is automatically the platoon leader. In single battles, the host can place himself in any of the five positions.

Once the battle is over, the game ends and all players go their separate ways. (Except for the multiplayer aspect, this functions exactly like the single player **Single Battle** selection.) After a campaign battle, the host can continue the multiplayer campaign by hosting another game using the same platoon.

TRAINING PROGRAM

TANK PLATOON II



Modern mechanized warfare is a challenging tactical environment in which speed, accuracy, and decisiveness determine the outcome. You don't want to enter this arena unprepared. Once the shooting starts, you don't have time to refer to this manual or any of the other supporting documentation. Fortunately, the training program provided with *M1 Tank Platoon II* is fairly extensive. It should prepare you to be properly proactive rather than reactive—when faced with moments of decision. In the following descriptions, we present the components of the training program in the recommended order of study. (This sequence assumes that you have already familiarized yourself with the entire contents of this manual.) Alternatively, you can simply use these components as a guide to find specific material you need to brush up on.



ARMOR SCHOOL



Your initial Basic Armor practical exam takes place at the Fort Knox armor school. Although the training is conducted as "live fire" exercises, rest assured that you're learning and practicing skills in a safe environment. Each training exercise begins with a detailed briefing on the objectives of the mission. On completing each mission, you're debriefed on your performance. Although it is not necessary to achieve perfect proficiency in everything before you're deployed to a hostile theater of operations, the troops in your platoon will certainly be more confident in your leadership if you do. The course of instruction is designed to be taken in a linear fashionone lesson after the other, in order. You may, however, proceed in any order you wish.

M1 TANK TOUR

This module takes you on an in-depth tour of the M1A2 Abrams. It features a 3-D model and photographs that illustrate the major features of the Main Battle Tank (MBT). Even if you are a veteran of the original M1 Tank Platoon, this is a good way to familiarize yourself with the updated features of the M1A2 variant. The topics presented include Physical Layout and Performance, Survivability, Weapons, Crew Stations, Sensors, and the Power Train.

NATIONAL TRAINING CENTER



On successfully completing the Basic Armor Course at Fort Knox, you are encouraged to proceed to the Advanced Armor Course, conducted at the National Training Center (NTC) in Fort Irwin, California. The NTC is designed to combine all of the elements learned in the previous sections and train officers to apply their knowledge in real world tactical situations. The experience gained in learning how to properly coordinate all of the tactical plans presented will serve you in good stead for the remainder of your career, regardless of the scenario or campaign you are deployed into. The available tactical lessons are:

> Movement to Contact Hasty Attack **Deliberate Attack** Defend in Sector **Defend a Battle Position** Counter Reconnaissance

Again, you can tackle these training actions in any order.

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In many ways the NTC (referred to jokingly by some survivors as the "National Trauma Center") is an excellent first campaign to undertake. It provides all the challenge of a real campaign within the safe confines of a training environment. Losses here generate lessons learned, not letters home to bereaved families.

TANK PLATOON

TANK PLATOON TACTICS

This module provides a brief overview of the basic action types and some basic armor tactics. These tactics are based on the U.S. Army's current tank, mechanized infantry, and scout platoon doctrine manuals and are taught via illustrations and animations. You are given an overview of typical platoon organization and introduced to the concept of a "wingman." Basic fire and movement formations are presented, as well as a number of standard battle drills (preset fighting contingency plans), including *Assault, Attack by Fire, Support by Fire*, and *Bypass*.

THE M1 TANK PLATOON II WAR COLLEGE

This curriculum is the culmination of the Armored Officer training pipeline. It provides the most detailed treatment of U.S. Army, U.S. Marine Corps, and OPFOR Combat Doctrine in the training program, as well as Vehicle Recognition Guides (VRGs) for all the forces you will encounter in *M1 Tank Platoon II*. In addition, you'll find intelligence briefings covering all the major hot spots in the world to which your platoon might be deployed. These references solidly ground any officer for combat command and should be kept close at hand for subsequent study once you reach a theater of operations.



TAKING Command The primary mission of the tank platoon is to close with and destroy the enemy. Nevertheless, not all missions assigned to your platoon are inherently offensive in nature. The greater strategic situation may dictate that the forces under your command defend a sector or cover a flank in support of the offensive missions of other units. Regardless, it is important that you coordinate your units properly to take advantage of their strengths and avoid their weaknesses. Whether offensive or defensive operations are the order of the day, your platoon's success depends on how well you use fire, maneuver, and shock effect in conjunction with combat support (CS) and combat service support (CSS) assets. When properly led and supported, your platoon is capable of conducting sustained operations against any sophisticated threat. This section is designed to prepare you for that task.



COMMANDING A SINGLE M1

M1 Tank Platoon II allows you to jump between the vehicles of your platoon at your discretion during an engagement. Thus, it is important that you understand how to control a single tank—and all the commands available to you—before you move on to command a platoon.

GAME CONTROLS

The interface is fairly complex, as befits a simulation of this detail. The keyboard controls are as follows:

VIEW CONTROLS

| F1 | Tank Commander (TC) Cockpit | | | |
|----------|------------------------------|--|--|--|
| F2 | Gunner (GNR) Cockpit | | | |
| F3 | Map Screen | | | |
| F4 | GNR's Primary Sight Screen | | | |
| F5 | GNR's Auxiliary Sight Screen | | | |
| F6 | TC's Vision Blocks Screen | | | |
| F7 | TC Hatch Open Screen | | | |
| F8 | Chase View | | | |
| F9 | Previous Vehicle | | | |
| (F10) | Next Vehicle | | | |
| Shift F1 | Move To Tank #1 | | | |
| Shift F2 | Move To Tank #2 | | | |
| Shift F3 | Move To Tank #3 | | | |
| Shift F4 | Move To Tank #4 | | | |

VEHICLE AND PLATOON ORDERS

TANK PLATOON II

| Α | Auto-drive Toggle for Current Vehicle |
|----------|---------------------------------------|
| Shift A | Auto-drive Toggle for Whole Platoon |
| S | Stop Vehicle |
| Shift S | Stop Platoon |
| F | Fire at Will: Platoon Only |
| Shift F | Fire at Will: All |
| Η | Hold Fire: Platoon Only |
| Shift H | Hold Fire: All |
| C | 1/3 Speed |
| V | 2/3 Speed |
| В | Max Speed |
| , | Platoon Engage Left |
| Shift, | Platoon Engage Forward |
| | Platoon Engage Right |
| Shift . | Platoon Engage Rear |
| Shift \ | Echelon Right Formation |
| (Shift)W | Wedge Formation |
| Shift L | Line Formation |
| ShiftC | Staggered Column Formation |
| Shift V | Vee Formation |
| Shift / | Echelon Left Formation |
| Shift Q | Quit Game |
| Shift P | Pause Game |
| ↑ | Driver Accelerate |
| ↓ | Driver Decelerate |
| ← | Turn Left |
| → | Turn Right |

Note: {T} Indicates a toggle function.

| | Tank Commander | TC Hatch | TC Vision Blocks | Gunner | GNR Primary | GNR Aux |
|------------|----------------------------|------------------|---------------------|-----------------------|-----------------------|------------------|
| 1 | Load Sabot | | | Load Sabot | Load Sabot | Load Sabot |
| 2 | Load HEAT | | | Load HEAT | Load HEAT | Load HEAT |
| 3 | Load MPAT | | | Load MPAT | Load MPAT | Load MPAT |
| 4 | Load STAFF | | | Load STAFF | Load STAFF | Load STAFF |
| 5 | Coaxial | | | Coaxial | Coaxial | Coaxial |
| 6 | | | | BattleSight | BattleSight | BattleSight |
| 8 | | | | Air/Ground | Air/Ground | Air/Ground |
| - | CITV Reticle - | | | GPS Reticle - | GPS Reticle - | |
| = | CITV Reticle + | | | GPS Reticle + | GPS Reticle + | |
| / | Smoke Gen. | Smoke Gen. | Smoke Gen. | Smoke Gen. | Smoke Gen. | Smoke Gen. |
| Bksp | Smoke Grenade (SG) | Smoke Grenade | Smoke Grenade | Smoke Grenade | Smoke Grenade | Smoke Grenade |
| Shift Bksp |)Arm SG | Arm SG | Arm SG | Arm SG | Arm SG | Arm SG |
| W | CITV W/B Hot | | | GPS W/B Hot | GPS W/B Hot | |
| E | | | | Manual Rng Entry | Manual Rng Entry | |
| Т | Thermal {T} | | | Thermal {T} | Thermal {T} | |
| | CITV Autoscan | | | | | |
| | CITV Search | _ | | | | _ |
| D | | | | Damage Display | | |
| G | CITV to Gun | Gun to Hull | Front | Gun to Hull | Gun to Hull | Gun to Hull |
| Shift G | Hull to CITV | Hull to Gun | | Hull to Gun | Hull to Gun | Hull to Gun |
| , | $CITV/GPS\left\{T\right\}$ | | | | | |
| Ζ | CITV 10x | | | GPS 10x | GPS 10x | _ |
| X | CITV 3x | Normal View | | GPS 3x | GPS 3x | |
| Spacebar | | | | Laser Range Finder | Laser Range Finder | |
| Enter | Engage Tgt | Fire Gun | | Fire Gun | Fire Gun | Fire Gun |
| Shift 1) 0 |]— | | | Manual Rng | Manual Rng | |
| | | | | | | |

TANK PLATOON

MAP SCREEN AND UNIT COMMAND AND CONTROL

| F9 | Previous Vehicle |
|-----------|------------------|
| Shift F9 | Previous Platoon |
| F10 | Next Vehicle |
| Shift F10 | Next Platoon |
| | Icon Toggle |

JOYSTICK CALIBRATION

TANK PLATOON II

This game uses DirectX joystick routines, and you should calibrate your joystick (and optional throttle and rudder controls) using the DirectInput function of DirectX. The *M1 Tank Platoon II* interface requires a joystick and supports the use of a throttle and rudder. Some joystick functions can be assigned to the keyboard, but others cannot. If you have a programmable joystick, you can modify the functions for your particular joystick. The default settings for the joystick controls are:

JOYSTICK CONTROLS

Note: {T} Indicates a toggle function.

| | Tank Commander | TC Hatch | TC Vision Blocks | Gunner | GNR Primary | GNR Aux |
|----------|-------------------|---------------|---------------------|-------------|----------------|-------------|
| Joystick | Move CITV | Move 50 cal. | Pan View | | Move Turret | Move Turret |
| JB #1 | Engage Target | Fire Gun | | Fire Gun | Fire Gun | Fire Gun |
| JB #2 | Laser | | | Laser | Laser | |
| JB #3 | Thermal {T} | NVG {T} | | Thermal {T} | Thermal {T} | |
| JB #4 | CITV 10X {T} | Binocular {T} | | GPS 10x {T} | GPS 10x {T} | |
| Hat up | Load Sabot | | | Load Sabot | Load Sabot | Load Sabot |
| Hat Dn | Load HEAT | | | Load HEAT | Load HEAT | Load HEAT |
| Hat Lft | Load MPAT | | | Load MPAT | Load MPAT | Load MPAT |
| Hat Rt | Load STAFF | | | Load STAFF | Load STAFF | Load STAFF |
| | Loud On all | | | Loud On an | Loud On an | Loud On all |

COMMANDER'S COCKPIT SCREEN



TANK PLATOON

The Commander's Cockpit is what you see when you enter an M1

While you're in direct control of any M1 in your platoon, you spend most of your time in the COMMANDER'S COCKPIT. At this central interface, you have access to all of the command and control functions needed in a fight, plus all the subordinate interface screens—like the GUNNER'S COCKPIT. What follows are explanations of all the control hot spots called out in the illustration. You can activate each of these by left-clicking on the indicated button or, where appropriate, you can use the associated keyboard command.

The commander's extension of the GUNNER'S PRIMARY SIGHT (GPS) screen F4 is described under **Gunner's Primary Sight (GPS)**. Essentially, sitting there you can observe the gunner's actions, or—using the joystick—override the gunner and take control of the main gun.

Vision Block F6 takes you to the COMMANDER'S VISION BLOCK screen, described in a section called (oddly enough) Commander's Vision Block.

CITV CONTROLS

TANK PLATOON III

The COMMANDER'S INDEPENDENT THERMAL VIEWER, or CITV, is one of the new features of the M1A2. It allows the commander to search for targets independent of the turret facing, providing true hunter-killer control of the tank. This area of the screen contains all the controls and displays for the CITV.

Reticle Contrast Buttons — and = control the brightness of the reticle and range displays of the CITV. This panel has two buttons; the left brightens the contrast of the reticle, and the right darkens it.

Gunner's Cockpit [F2] takes you to the GUNNER'S COCKPIT.

- Reticle is the primary aiming guide and the center of the CITV display. This is identical in function to the reticle in the GUNNER'S PRIMARY SIGHT screen. The reticle is used to aim the CITV. You can use it in conjunction with the CITV and Sight Mode buttons to aim and control the main gun or to designate targets in Hunter-Killer mode. Each magnification has its own reticle, scaled to provide proper ballistic solutions at that level of magnification. The bars above, below, and to the sides of the aim point and circle are for judging distance and lead in case of a computer malfunction. The CITV reticle is not tied to the laser range finder. The reticle functions as long as the CITV works.
- 4. TAKING COMMAND
- **Turret Clock** is a smaller version (in the CITV display) of the clock shown in the GUNNER'S PRIMARY and AUXILIARY SIGHT screens. It functions the same as those do.
- **Firing Data** shows the RANGE DISPLAY, COMPUTER FAULT, READY TO FIRE box, and MULTIPLE RETURN LINE in the CITV display. These function just like the ones in the GUNNER'S PRIMARY SIGHT. This data is only available if the CITV is in Gun LOS mode.

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CITV Control Modes determine how the CITV will function. There are two general modes: *Sight* and *CITV Only*.

In *Sight* mode, the **Gun LOS** button G slaves the CITV to the main gun's line of sight. This is the default setting. The second button 1 toggles between GPS mode and CITV mode (GPS mode is the default). In GPS (Gun LOS) mode, the CITV has no controllable function. If follows the main GPS and shows the gunner's view. In CITV (Gun LOS) mode, the CITV acts as the gun sight. The commander can use the CITV just like the sight in the GPS. This is the backup mode in case the GPS is damaged. In this mode, the joystick controls the turret and main gun, not just the CITV. In Gun LOS mode, the firing data is available. In *CITV Only* mode, the CITV is not slaved to the gun. The TC Cockpit has independent control of the CITV, via the joystick. To engage a target, the main gun must still be slewed to the bearing of the target selected in the CITV.

- **Search Mode** means that the CITV traverse and elevation are controlled by the joystick. This is the Hunter-Killer mode. Put the reticle of the CITV on a target and pull the trigger (joystick button). The gunner will automatically move to engage the designated target—as soon as he fires if he already has a target, or immediately if no target has been previously engaged. If the current target is out of range or cannot be shot at immediately for any other reason, the gun will engage the new designated target. You must hold the CITV on the target until the gun is laid on. In this mode, the firing data is not available, with the exception of the READY TO FIRE box, which lights to indicate the gun is on the designated target and the CITV is free to search again.
- Scan Auto Mode [] sees the CITV set to continuously pan back and forth across an area. In this mode, the CITV pans 45 degrees to either side of the current CITV direction. You can use the CITV Scan Knob and Turret Clock to change the scan area. Use the scan knob to move the CITV to one side of the new area and then to the other side. When you release the knob, the CITV begins a continuous scan between the two bearings you have set until you move the knob again. At that point, the CITV is returned to Search mode. If you wish to set new auto scan coordinates, repeat the procedure.

CITV Adjustment Panel includes three toggle buttons.

Magnification toggles the CITV between $3x \times and 10x = and 10x$

The *Thermal Polarity* switch W controls whether hot objects appear white or black. White as hot is the default setting.

IVIS CONTROLS

TANK PLATOON II

The Inter Vehicular Information System (IVIS) is the second major addition to the M1A2. This digital information system ties the tank into a network, allowing unprecedented situational awareness to the tank commander. This section of the screen contains all the controls and displays for the IVIS.

- **Small Map Screen** shows the world in a map view centered on the tank you currently occupy. This map mimics the appearance of the full screen map, but the scale is limited to show a 4 km by 4 km area.
- **Magnification** buttons switch the map display between the 2 km and 4 km settings.**Control Unit** centers the map on your current vehicle.
- **Display** buttons [F9], [F10], [Shift] [F9], and [Shift] [F10] allow you to move the damage display between the vehicles in the platoon.

Pause Game Shift P does just that.

Full Screen F3 takes you to the MAP screen.

Smoke Grenade Panel controls the smoke grenades. The Ready button
Shift Backspace arms the grenades. When they are armed, all three buttons are highlighted. You have two salvos of grenades; you can fire them after they have been armed by pushing the Salvo 1 and Salvo 2 buttons
Backspace. Once a salvo has been fired, the button turns red to indicate that the salvo has been expended. The launcher is reloaded at the end of each mission.

COMMANDER'S OUTSIDE HATCH

The traverse and elevation of the machine gun are controlled with the joystick. The joystick button fires the gun. You can also look through your binoculars (10x power) while the hatch is open by pressing [Z] or use the night vision goggles by pressing (T). To return to the normal view, press (X). You can also move to the COMMANDER'S VISION BLOCK screen from here.

TANK PLATOON

COMMANDER'S VISION BLOCK



The view through the commander's vision blocks

All you can do here is:

- Return to the COMMANDER'S COCKPIT F1
- Move to the OUT OF HATCH screen [F7].

Use the joystick controls to pan around the eight (8) vision blocks.



This is the Gunner's Cockpit

What follows are explanations of all the control hot spots called out in the illustration. You can activate each of these by left-clicking on the indicated button or, where appropriate, you can use the associated keyboard command.

- Gunner's Primary Sight F4 takes you to the Gunners Primary Sight screen, which is described later.
- Gunner's Auxiliary Sight [F5] takes you to the Gunners Auxiliary Sight screen, which is described later.
- Ammunition Select Panel displays the different types of ammo that are available for use in the main gun. The current ammo type is highlighted. To select a type of round to load, left click on any of the boxes or use [1], [2],[3], or [4] for APDFS, HEAT, MPAT, and STAFF rounds, respectively. If the main gun is loaded and you select a new round type, the new round is loaded only after the current round is fired. The loader does not unload the gun and reload the new round; the old one must be fired.
- Air/Ground Mode 8 switches between Air mode (used to engage helicopters) and Ground mode, which is the default.

Gun Select Panel (5) is a two-way switch. The up position selects the main gun, and the down position selects the coaxial machine gun. Each position has a small dome light that illuminates when the switch is in that position.

TANK PLATOON

- **Magnification Panel** consists of a lever that switches the GUNNER'S PRIMARY SIGHT between $3x \times and 10x = magnification$. Make sure you have locked onto a target before increasing the level of zoom, or you might lose sight of the enemy. This switch works in normal mode only.
- **Reticle Contrast Panel** and = controls the brightness of the reticle and range displays in the GPS's normal view mode. The panel has two knobs; the left brightens the contrast of the reticle, and the right darkens it. The keyboard controls for this function move both these knobs and the **Reticle Contrast Knobs**.
- **Thermal Mode Switch** T is a two-way switch. The up position turns the thermal power to Standby position; the down position selects Thermal mode. While in Standby, the sights are in normal mode, but Thermal mode is powered and ready.
- **Thermal Polarity Switch** (W), like the one in the COMMANDER'S COCKPIT, is a two-position switch that determines whether hot objects appear as white or black in the thermal sight. White as hot is the default setting.
- **Reticle Contrast Knobs** and = control the brightness of the reticle and range displays in the GPS's thermal view mode. The panel has two knobs; the top brightens the contrast of the reticle, and the bottom darkens it. The keyboard controls for this function move both these knobs and the **Reticle Contrast Panel**.
- **Thermal Ready Light** is a green dome light that illuminates when Thermal mode is available. If the system is damaged or in a cool down cycle, the light is out.
- **Thermal Fault Light** is a red dome light that flashes if the system is damaged. Otherwise, the light is off.
- Thermal Magnification Knob is a two-position knob. This switches the GUNNER'S PRIMARY SIGHT between $3x \times and 10x \times and 10x$ magnification. This switch works only in Thermal mode.
- Commander Cockpit F1 moves you to the COMMANDER'S COCKPIT screen.

Pause Game Shift P does just that.

Fire Control Mode Panel (6) is a two-position switch. The center position is the Normal Fire Control mode. In this, the default mode, you can enter a range into the computer using the computer data to generate superelevation and lead. The down position is the Manual or BattleSight mode, which must be used if the Fire Control Computer has been damaged. In this mode, you must manually lead and superelevate with the sight to hit the target. Each position has a small dome light that illuminates when the switch is in that position. There is a third light at the top of the panel that flashes red when the computer is damaged. This stops all computer assist and stabilization.

TANK PLATOON II

Gunner's Control and Display Panel consist of five parts. The display screen shows either the tank's damage display or the manual range you have entered. The Damage Display is similar to the one shown on the Commander's IVIS screen in the main cockpit, and it always shows the current tank's status only. The three buttons below the display screen control the display mode.



Damage Display D sets the display to show the tank damage display.

Range Input overrides the computer solution so that you can enter a range manually.

Enter E enters the value shown on the display into the computer.

The **Keypad** Shift 1-0 allows you to enter range data using the mouse.

All the other controls have no function in the game. These include the boresight controls, two contrast and sensitivity controls for the thermal mode, and the manual traverse and firing controls. Rather, they are included simply to maintain the authenticity of the cockpit.

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GUNNER'S PRIMARY SIGHT (GPS)



The Gunner's Primary Sight screen is the main functional cockpit for aiming and firing the main gun and coaxial machine gun

The Gunner's Primary Sight includes four hot spot controls and 11 information areas. The traverse and elevation of the sight are controlled with the joystick. Firing the gun and the laser are also joystick functions.

- The white area is the World View Area. This can be in one of three modes: visible light (normal), thermal (white hot), and thermal (black hot). The world is shown in one of only two magnifications, 3x (X) and 10x (Z).
- The **Reticle** is the primary aiming guide. In a tank with a fully functional laser and computer, the shell will hit the point under the aim mark when the gun is fired. Each magnification has its own reticle, scaled to the proper ballistic curve based on that magnification. The bars above, below, and to the sides of the aim point and circle are for judging distance and lead in case of a computer malfunction. Each bar is 4 miles long, A mil is 1/18 of a degree, or 1 meter at 1000 meters. This means that a 2-meter tall tank will be 2 mils high at 1000 meters, or only 1 mil high at 2000 meters, and so forth. If the Laser Range Finder is damaged, the reticle is lost in the normal world. The reticle in the Thermal views is generated in the thermal system and is still available in those views even if the laser is damaged.



- The **Range Readout** is the laser range finder display. The number shown is in meters, and is only updated each time the laser is fired at the target. If the laser is damaged, this readout is lost.
- The **Computer Fault** display shows an **F** any time the computer is malfunctioning or damaged. This means that the computer will not lead for range or movement. You must manually lead the target using the reticle mil lines if this occurs.
- The **Ready to Fire** box indicates that the gun is loaded and ready to shoot.
- The **Multiple Return Line** blinks on and off if the laser range finder did not hit the target, but some ground object instead. Try again. If the return is from a target (clean) no line is shown.
- The Ammo Indicator Boxes show how many rounds of each type of main gun ammunition are left, and which round is currently being used. The current ammo type has its box outline highlighted. The round numbers count down as each round is fired. To select a type of round to load, left click on any of the boxes or use 1, 2, 3, or 4 for APDFS, HEAT, MPAT and STAFF rounds, respectively. If the main gun is loaded and a new round type selected, the new round will be loaded only after the current round is fired. The loader does not unload the gun and reload the new round, the old one must be fired. Click on the **Coaxial MG** button 5 to fire the machine gun. This selection does not affect what round has been specified for use by the main gun.
- In the lower left side of the screen is the Turret Clock. This shows you the relationship between the different positions of the tank and the world. The outer part of the clock is a Fixed Compass Ring, which is oriented to the north and does not move. The Vehicle Indicators show the current facing of the tank's Hull, and Turret. Learn to refer to the Turret Clock often. It is an essential aid to your maintenance of good situational awareness in a fluid tactical situation.



GUNNER'S AUXILIARY SIGHT SCREEN



TURRET Clock AMMUNITION INDICATORS

The Gunner's Auxiliary Sight screen is the backup aiming and firing the main gun and coaxial machine gun.

- The white area is the **World View Area**. This area is shown in visible light (normal) mode only, and only at 10x magnification. Traverse and elevation of the sight are controlled with the joystick. Firing the gun and the laser are also joystick functions.
- The **Reticle** is the primary aiming guide. The section of the reticle you use depends on the current round. Each round has a section of the reticle calibrated for it. These graduated marks help you select the proper lead and superelevation for each shot. There is no laser range finder or computer assistance available when targeting the main gun via the Gunner's Auxiliary Sight.
- The **Stadia Reticle** is used to judge range to the target based on the size of the vehicle in the view. An example of how this works is in the illustration.

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Stadia Reticle - Full Height Target

Stadia Reticle - Target in Hull Defilade

The Range Readout, Computer Fault, Ready to Fire box and Multiple Return Line are not used in the AUXILIARY SIGHT.

The **Ammo Indicator Boxes** and **Turret Clock** function just like those in the Gunner's Primary Sight screen.

COMMANDING A PLATOON

When operating independently, even the powerful M1A2 MBT can be vulnerable to the hazards of the battlefield—both natural and man-made. Furthermore, a single tank crew cannot maintain proper situational awareness as adequately as can a platoon of four tanks, because responsibility for the areas of coverage can be divided between the units in the formation. Thus, the tank platoon is the smallest maneuver element within a tank company. The tank platoon is a part of both tank companies and armored cavalry troops. A platoon might also be cross-attached to a number of other organizations, such as a mechanized infantry company, to create "company teams." It might also be placed under operational control (OPCON) of a light infantry battalion. See **Unit Icons and Organization** for details on the typical force structures your platoon might deploy with. Once you have selected a campaign or scenario, you proceed to the BRIEFING screen.

BATTLE PLANNER, information on the location of enemy units is limited-based on the difficulty level setting. Further, this location data is only current at the beginning of the mission. Do not assume that enemy units will remain passively at these locations, as their orders are not dependent on yours. In other words, just because your mission is offensive in nature, you cannot assume that the enemy is in a static Defend in Sector posture. Their orders may also be offensive in nature, and they may well be on the move at the

NUET BREAMS

THE MAP AND FLEXIBLE WORKSPACE



your area of responsibility as well as enough additional area to help spot enemy outflanking attempts. It is divided into a 1 kilometer grid, which creates the grid location coordinate system for the game. The grid location system is the same one currently used by the army. Each 100 x 100 km area is called a Sector and is given a two letter designation. Each sector map consists of a 100 x 100 km area, with a 1 km grid superimposed over it. These grid lines are numbered 00 to 99, from south to north and from west to east. The location of a unit or object is stated as a six- or eight-digit number. The six-digit number gives the location to within 100 meters; the eight-digit location is good to within 10 meters. For example, a unit located 365 meters north of line 24 and 672 meters west of line 76 would be located at grid 244 767 in six-digit or at 2437 7667 in eight-digit mode.

beginning of the scenario.

TANK PLATOON II

Pay close attention to detail when you receive your tactical briefing

TANK PLATOON

Your briefing covers the enemy and friendly situation, the mission, and a basic description of how the mission should be executed, including any relevant phase lines, rendezvous points, and timing. The briefing format is modeled closely on the U.S. Army's standard five-paragraph briefing format.

The difficulty level affects the reliability of the Intelligence Section briefing. On the easiest setting, the briefing always provides accurate information on the enemy forces and intentions. On the higher levels, this information is less reliable and subject to errors. Once the mission begins, important information from the briefing is available via the IVIS screen in the COMMANDER'S COCKPIT of any vehicle in the platoon. When the briefing is complete, you proceed to the BATTLE PLANNING screen to deploy your forces and give your initial orders to the platoon.

During campaigns, a Daily Briefing is held every campaign day around 0600.

BATTLE PLANNING

The BATTLE PLANNER is what you use to modify the default settings of friendly assets prior to entering a battle. This is identical in function to the MAP screen, which becomes accessible once the engagement begins. In the



THE BRIEFING SCREEN

To the right of the map is the flexible workspace. This area displays the information and interface used to give orders, call for support, and review briefing information. The data in the flexible workspace changes as you interact with it.

TANK PLATOON

SELECTING UNITS

You can select a unit to be the *active unit* by one of two methods. The first method is to select the unit on the map using the mouse. Place the mouse cursor over the unit on the map and select it by left-clicking on it. This selects the platoon to which that individual vehicle belongs. To select an individual vehicle, right-click on it on the map or left-click on the vehicle entry in the workspace.

When a unit is active, the workspace displays that unit's current status.

Only certain units can be selected. In the platoon under your direct command, you can select any single vehicle or the entire platoon. In support platoons, you can only select the entire platoon using the keyboard or mouse. However, you can select individual vehicles on the flexible workspace.

UNIT STATUS

| Location 9405 7269 | In MIA2 ABRAMS 11 |
|--|--|
| 0 TVPE STATUS 11 MIA2 AURAMS DK 12 MIA2 ABRANS DK 13 MIA2 ABRANS DK | Concell Districts District |
| 14 MIA2 ABRAME DK | CAN WATER HEAT HEAT STARF |

The UNIT STATUS display is the default workspace for all units. The status information displayed differs depending on whether a single vehicle or a platoon is active. The STATUS window for each vehicle or platoon provides critical information on the current capabilities and intentions of that unit. In the BATTLE PLANNER, the information in the STATUS window is not modifiable, and is presented for informational purposes only.

PLATOON STATUS WINDOW

| The following information is presented in the PLATOON STATUS windo | ow: |
|--|-----|
|--|-----|

| Small Icon | Unit Designation | |
|---------------|-------------------------|--|
| Platoon Type: | (tank, scout, Mech inf) | |
| Vehicle Type: | (M1A2, M3, M8, LAV) | |
| Location: | (8-digit grid coord) | |

Vehicle Status:

| S |
|----------------------------------|
| lo Mobility, Weapons, Destroyed) |
| |

VEHICLE STATUS WINDOW

The following information is presented in the Vehicle Status window:

| Small Icon | Unit Designa | ition | | |
|-------------------------|--|-------------------------|--|--|
| Platoon Type | e Icon: (tank, scout, | (tank, scout, Mech inf) | | |
| Vehicle Type | : (M1A2, M3 , | M8, LAV) | | |
| Location: | (8-digit grid o | coord) | | |
| Crew Status | s: | | | |
| Tank CO | (Status) | | | |
| Gunner | (Status) | | | |
| Loader | (Status) | | | |
| Driver | (Status) | | | |
| Small Icon Location: | Unit Designation (8-digit grid coord) | Platoon Icon | | |
| | | | | |

STANDARD FORMATIONS: U.S. ARMY TANK PLATOON MANUAL FM 17-15

Formations are used to establish tank positions and sectors of responsibility during tactical operations. They facilitate control, alleviate confusion, and increase protection, speed, and the effectiveness of fires. Formations are not intended to be rigid, with vehicles remaining a specific distance apart at every moment. The position of each tank in the formation depends on the terrain and the ability of the wingman driver to maintain situational awareness in relation to the lead tank. At the same time, individual tanks should always occupy the same relative position within a formation. This will ensure that the members of each crew know who is beside them, understand when and where to move, and are aware of when and where they will be expected to observe and direct fires. Weapons orientation for all tanks should be adjusted to ensure optimum security based on the position

of the platoon in the company formation.

Column: The column provides excellent control and fire to the flanks, but permits less fire to the front. It is used when speed is critical, when the platoon is moving through restrictive terrain on a specific route, and/or when enemy contact is not likely.

Staggered Column: The staggered column is a modified column formation with one section leading and one section trailing behind to provide overwatch. The staggered column permits good fire to the front and flanks. It is used when speed is critical, when there is a

limited area for lateral dispersion, and/or when enemy contact is possible.





NK PLATOON I

Wedge: The wedge permits excellent firepower to the front and good firepower to the flanks. It is employed when the platoon is provided with overwatch by another element and is moving in open or rolling terrain. Depending on the platoon location within the company formation, the

platoon leader and PSG (with wingmen) can switch sides of the formation. When the platoon leader's tank is slightly forward, one flank has more firepower.



Echelon: The echelon formation permits excellent firepower to the front and to one flank. It is used to screen an exposed flank of the platoon or of a larger moving force.





b,

Vee: The Vee formation provides excellent protection and control, but limits fires to the front. This formation is used when terrain restricts movement or when overwatch within the platoon is required.

Line: The line formation provides maximum firepower forward. It is used when the platoon crosses danger areas and is provided with overwatch by another element or when the platoon assaults enemy positions.

COMMAND



The COMMAND display allows you to give tactical orders to the platoons prior to the start of the battle. This display is similar to the MAP screen inside the 3-D game and is used for the same purpose. However, the latter is more indepth and versatile to allow you to give orders rapidly to any vehicle, not just platoons.

SETTING WAYPOINTS

TANK PLATOON II

Your units move around the map based on paths you provide for them. A path can have up to six points that allow you to change the direction of movement from that point and give new reaction orders to the units. Each of these points is called a *waypoint*.

Select any platoon under your command. This opens the COMMAND menu in the workspace, which displays the waypoints and general path of travel for the unit. If a unit has no waypoints, or if you wish to add additional waypoints, you may do so by left-clicking anywhere on the map. This adds a waypoint where you clicked and a path leading from the previous end of the path to the new waypoint. Waypoints are numbered in the order you place them. You can move the location of any waypoint in a path using click-anddrag techniques. Delete any waypoint by right-clicking on the waypoint marker on the map or on the waypoint number in the workspace. The path is then updated and the waypoints renumbered accordingly.

ORDERS

You can give each platoon orders at each waypoint. If no orders are given, the waypoint generates orders based on the Default Battle Drills. To give orders at a waypoint, select the waypoint by left-clicking on it. You can also select a waypoint in the workspace by clicking on the **Waypoint** # setting. This activates the various menus in the workspace. To change the setting, simply select a new entry. In some situations, certain settings are not needed or allowed. In these cases, those settings are grayed out. The various settings and their options are given below.

Waypoint # Shows the current active waypoint.

Waypoint

| Туре | <i>Checkpoint</i> : This is the standard, default waypoint; type the unit moves to the next waypoint without stopping. | | |
|-------------|--|--|--|
| | <i>Fire Position</i> : When the unit reaches the waypoint, it assumes a firing position. | | |
| | Assembly Area: When the unit reaches the waypoint, it stops for a predetermined amount of time before continuing. | | |
| Orientation | Selects the general facing of the unit at the waypoint. | | |

TimeSelects how long the unit will remain in this position. If no
time is given, the waypoint is automatically a Checkpoint.

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- **Formation** Selects the formation used while traveling to the waypoint. The formation taken when a firing position is reached is always Line.
- **Combat Mode** *Assault*: The unit opens fire at the enemy and advances toward their position. Original orders are lost.

Engage: Unit can immediately open fire at any enemy sighted and engage that unit.

Contact: Unit can open fire on a sighted enemy, but it continues to move to the next waypoint.

Bypass: Unit does not engage and continues to move to its next waypoint.

TECHNIQUES OF MOVEMENT: U.S. ARMY TANK PLATOON MANUAL FM 17-15

The commander or platoon leader selects a technique of movement based on several battlefield factors:

The likelihood of enemy contact.

- The availability of another element to provide overwatch for the moving element.
- The terrain over which the moving element will pass.

In open terrain, such as deserts, one company will normally overwatch the movement of another company. In close terrain, such as rolling hills or countryside, platoons will normally overwatch other platoons. In restrictive terrain, such as mountains, forests, or urban areas, a tank section will rely on another tank section or dismounted infantry to overwatch movement.

The tank platoon must be able to employ any of the following techniques of movement:

Traveling. Characterized by continuous movement of all elements, traveling is best suited to situations in which enemy contact is unlikely and speed is important.

Traveling overwatch. Traveling overwatch is an extended form of traveling that provides additional security when contact is possible but speed is desirable. The lead element moves continuously. The trail element moves at various speeds and may halt periodically to overwatch the movement of the lead element. The trail element maintains dispersion based on its ability to provide immediate suppressive fires in support of the lead element. The intent is to maintain depth, provide flexibility, and sustain movement in case the lead element is engaged.

Bounding overwatch. Bounding overwatch is used when contact is expected. It is the most secure, but slowest, movement technique. There are two methods of bounding:

Alternate bounds. Covered by the rear element, the lead element moves forward, halts, and assumes over watch positions. The rear element advances past the lead element and takes up overwatch positions. The initial lead element then advances past the initial rear element and takes up overwatch positions. Only one element moves at a time. This method is usually more rapid than successive bounds.

Successive bounds. In this method, the lead element, covered by the rear element, advances and takes up an overwatch position. The rear element advances to an overwatch position abreast of the lead element and halts. The lead element then moves to the next position, and so on. Only one element moves at a time, and the rear element avoids advancing beyond the lead element. This method is easier to control and more secure than the alternate bounding method, but it is slower.

SUPPORT

The $\ensuremath{\mathsf{SUPPORT}}$ display allows you to review the artillery and air support available for the battle.

BRIEFING AND START GAME

You can review the briefing at any point in the battle planning process by selecting **Briefing**. In single player mode, you have an unlimited amount of time to plan the upcoming battle and modify your orders before the engagement begins. In multiplayer mode, this time is limited by the participants to a preset value. Once battle planning is completed in solitaire mode, select **Start Game** to begin the mission. In multiplayer mode, the mission begins once all players have selected **Start Game**—or automatically when the battle planning time limit is reached, whichever occurs first.



THE MAP SCREEN



Refer to the Map Screen often to keep the "Big Picture" on the tactical situation

The MAP screen is where you control the various units under your command during the mission. You reach this screen from the tank commander's position or by pressing F3. The command portion of the screen contains the same four functional areas as the BATTLE PLANNER, but also has some unique functionality that is unavailable there.

RETURN TO GAME

Exits the screen and returns to the TANK COMMANDER'S COCKPIT.

BRIEFING

Displays the information from the current battle briefing.

NEXT VEHICLE

Displays the unit display for the next vehicle in the current platoon. If a platoon is currently displayed in the workspace, the first vehicle (the platoon leader's) is displayed.

NEXT PLATOON

TANK PLATOON II

Displays the unit display for the next platoon. If a vehicle is currently displayed in the workspace, that vehicle's platoon is displayed.

SUPPORT

Opens the SUPPORT display, which allows you to call for artillery and air support.

SELECTING UNITS

You can select a unit to be the *active unit* by one of two methods. The first method is to select the unit on the map using the mouse. Place the mouse cursor over the unit on the map and select it by left-clicking on it. This selects the platoon to which that individual vehicle belongs. To select an individual vehicle, right-click on it on the map or left-click on the vehicle entry in the workspace. The second method is to cycle though the units using the next platoon and next vehicle buttons.

When a unit is active, the workspace displays that unit's current status.

UNIT DISPLAYS



The UNIT display is the default workspace for all units. The display is different for single vehicles and platoons. The STATUS window for each vehicle or platoon provides critical information on the current capabilities and intentions of that unit, and also the command interface used in the BATTLE PLANNER.


PLATOON DISPLAY

The platoon display contains all the information given in the BATTLE PLANNER PLATOON STATUS window, plus the commands contained in the COMMAND display. The function of these commands is discussed in **Command & Control**. The following information is presented in the PLATOON STATUS window:

Platoon Icon

| Small Icon | Unit Designation |
|------------|----------------------|
| Location: | (8 digit grid coord) |

Vehicle Status:

| Vehicle # | Туре | Status |
|-----------|------------|---------------------------------------|
| 11 | (M1A2 etc) | (OK, No Mobility, Weapons, Destroyed) |
| 12 | (M1A2 etc) | (OK, No Mobility, Weapons, Destroyed) |
| 13 | (M1A2 etc) | (OK, No Mobility, Weapons, Destroyed) |
| 14 | (M1A2 etc) | (OK, No Mobility, Weapons, Destroyed) |

Current Action:

Waypoint #: (list of waypoint number icons)

| Waypoint Type: 🖵 Checkpoint | | Assembly Area | | ∛Fire Position | |
|-----------------------------|--------------|---------------|----------------------|----------------|-----------|
| Orientation: (Arrow Box) | | | Time: (Clock and ↑↓) | | |
| Formation: F | ormation Lis | st | | | |
| SOP: | | | | | |
| Load Inf. | Unload Inf. | Fire at Will | Hold Fire | Smoke | Breakoff. |
| | Rejoin | Assault | Engage | Contact | Bypass |

Icon I.D. Window

VEHICLE WINDOW

The single vehicle display contains all the information needed for a thumbnail overview of the vehicle status, plus several command functions (which are discussed in **Command & Control**). The following information is presented in the Vehicle Status Window:

| /ehicle Icon | Vehicle Type & Designation | Platoon Icon |
|---|--|--------------|
| Parent Platoon Typ | e: (Player's, tank, scout | t, Mech inf) |
| ocation: | (8 digit grid coord) | |
| Crew Status | Vehicle Status: | |
| oader Driver oader Gunner Commander | Track Engine Laser Thermal CITV Comm Gear | |
| <u><u>o</u>, <u>i</u>, <u>i</u>, <u>i</u>, <u>i</u>, <u>i</u>, <u>i</u>, <u>i</u>, <u>i</u></u> | | |

Status is indicated by color. Green: OK, Yellow: Wounded, Red: KIA/Destroyed

Ammunition

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| Coaxial | AP: | HEAT: | MPAT: | STAFF: |
|---------|--------|--------|--------|--------|
| # Rnds | # Rnds | # Rnds | # Rnds | # Rnds |

Current Action: (Attached to Platoon) or same as Platoon if detached. **Current Action**:

| Waypoint # | ypoint #: (list of waypoint number icons) | | | | |
|-----------------------------|---|---------------|------------|----------------------|-----------|
| Waypoint Type: 🖵 Checkpoint | | Assembly Area | | Sire Position | |
| Orientation | : (Arrow Box | .) | Time: (Clo | ck and ît ∎) | |
| Formation: | Formation Li | st | | | |
| SOP: | | | | | |
| Load Inf. | Unload Inf. | Fire at Will | Hold Fire | Smoke | Breakoff. |
| | Rejoin | Assault | Engage | Contact | Bypass |
| Icon I.D. Wi | ndow | | | | |

COMMAND & CONTROL

The Command & Control system used during an engagement replicates the FRAGO (Fragmentary Order) system actually used in combat. In this system, platoons are usually told where to go, generally how to get there, and who to engage—but that's it. Individual vehicles are rarely given independent orders, and these are usually limited to "go here and shoot there." The *M1 Tank Platoon II* command and control system is representative of this type of fluid command structure, while remaining easy to understand and use. 57

The COMMAND display allows you to give tactical orders to your platoons. It is nearly identical to that used in the BATTLE PLANNING screen.

Current Action

The Platoon Display lists the unit's Current Action below the vehicle status section. This entry is a brief statement of the platoon's current general actions. The statement consists of two sections. The first indicates the unit's location or movement status: the second indicates enemy contact. The following examples provide an idea of the types of entries displayed:

Location

| Advancing to next {Waypoint} |
|----------------------------------|
| At {fire position/assembly area} |
| Awaiting Orders |
| Halted in place |
| Executing Battle Drill |

Enemy Contact No Contact Enemy Sighted In Contact **Engaging Enemy Bypassing Enemy**

TANK PLATOON

Each of these sections represents a specific event, as defined below:

- Advancing to next {Waypoint} is used when the unit is moving along a path between waypoints. It is usually combined with No Contact, Enemy Sighted, In Contact, or Bypassing Enemy.
- At {fire position/assembly area} is used when the unit has reached a final fire position, or is at a fire position or assembly area and is waiting for the specified time to expire. It is usually combined with No Contact, Enemy Sighted or Engaging Enemy.
- Awaiting Orders is used when the unit has reached its final waypoint. It is usually combined with No Contact or Enemy Sighted.
- Halted in place is used when the unit has stopped to fight at a non-fire position or en route to another position. This is almost always combined with Engaging Enemy.
- Executing Battle Drill is used when a platoon's orders have been overridden by a player Battle Drill Command. (see Battle Drills). The unit is carrying out the specified drill prior to continuing its previous orders. Almost always combined with Engaging Enemy.

| No Contact: | No enemy units are visible from the unit. |
|------------------|--|
| Enemy Sighted: | The enemy has been sighted but not engaged. |
| In Contact: | The unit is engaging the enemy but continuing to execute its orders. |
| Engaging Enemy: | The unit is decisively engaging the enemy. |
| Bypassing Enemy: | The unit is avoiding engagement with the enemy. |

Waypoints & Battle Drills

TANK PLATOON II

Each of your platoons is given orders in one of two modes. The Waypoint mode allows you to give multiple waypoints and orders to each platoon. Battle Drill mode is a more urgent set of instructions, usually used when you're surprised by the enemy. Each battle drill is a specific, practiced action the platoon takes in an emergency or a rapidly changing situation. In Battle Drill mode, a left-click on the map places a single waypoint, causing the platoon to break off from its current waypoint orders. Once the battle drill is complete, the platoon can revert or be changed back into waypoint mode without losing its original orders. Battle drills are executed, and then the unit returns to its prior orders. You can order these drills from either the COMMAND screen or the Tank Commander's interior cockpit. In order for you to give a Battle Drill to a platoon, that unit must be the active unit in the COMMAND screen—or your platoon if you're in the TC cockpit.

Setting Waypoints

For the active platoon, left-click on the map to set waypoints. If a unit has no waypoints, or if you wish to add waypoints, do so by left-clicking anywhere on the map. This adds a waypoint where you clicked and a path leading from the previous end of the path to the new waypoint. You can also move a waypoint using click-and-drag techniques. Delete a waypoint by right-clicking on it. The path is then modified and the waypoints renumbered accordingly.



Orders

You can give each platoon given orders at each waypoint. If no orders are given, the waypoint generates orders based on the previous waypoint or the default selections. The orders given in this section are identical to those described in **Battle Planner**. To give orders at a waypoint, select the waypoint by left-clicking on it. Alternatively, you can select the waypoint using the numbered icons in the **Waypoint** # setting. This activates the various icon areas in the workspace. To change the setting, click on the appropriate icon. In some situations, certain settings are not needed or allowed. In these cases, those settings are grayed out.

The various Settings and their options are given below.

| Waypoint # | 1234 | The current active waypoint is highlighted. One icon is shown for each waypoint for that unit. |
|---------------|--------------------|--|
| Waypoint Type | ∀ | Checkpoint: Unit reaches and moves to next waypoint without stopping or stops for a predetermined amount of time before continuing. Fire Position: Unit reaches waypoint and assumes a firing position. |
| Orientation | | Player selects the general facing for the position. |
| Time | | Player selects how long the unit will remain in this position. Used for Fire Positions and Assembly Areas only. |
| Formation | | Selects the formation used while traveling to the waypoint. The formation taken when a firing position is reached is always Line. |
| S.O.P. | | |
| Load Infantry | के य केद | Any dismounted infantry will move to load into their vehicles. If the vehicles are more than 500 meters away, the vehicles will move to the infantry. |

| Unload Infantry | | The platoon will dismount any infantry mounted in the vehicles of the platoon at the waypoint. This icon can be selected at any time, causing the platoon to immediately stop and unload its infantry. |
|-----------------|------------|--|
| Fire at Will | \bigcirc | The unit may fire at any enemy units in range and LOS. |
| Hold Fire | ÷. | The unit waits for a Fire at Will order before firing or for the enemy to close within 500 meters. |
| Smoke | ÷. | The vehicles in the unit turn on their smoke generators. They stay on until a second Smoke command is given. |

VEHICLE ORDERS

TANK PLATOON I

In order for you to give orders to an individual vehicle, that vehicle must be selected and its VEHICLE display visible. If the Platoon Leader's or Platoon Sergeant's vehicle in any platoon is given independent orders, their wingman will assume the same orders. The only way to send a single vehicle is to give a wingman orders or to specify that the wingman's tank rejoin the platoon.

In the lower part of the VEHICLE display, there is an Information entry for the **Current Action**: command. This entry displays one of two options. The first entry, **Attached to Platoon**, is the default, and it indicates that the vehicle is under control of the platoon and is following the current platoon orders. The second set of entries indicate that the vehicle has individual orders and is no longer following the platoon commands. These entries are identical to those used on platoon displays and are described fully elsewhere in this manual.



The procedure for giving vehicles independent orders is as follows:

The vehicle must be the active vehicle.

Waypoints are created and controlled as described for platoons.

Selecting the **Rejoin Platoon** icon instructs the vehicle to move to the current platoon position and rejoin the platoon.

DEBRIEF

When the mission ends, you return with your platoon for a full debriefing. Your performance as a battlefield commander is evaluated based on mission objectives completed, enemy losses inflicted, and friendly casualty rates. On completion of the debriefing, your game is automatically saved.

PLATOON CONTROL SCREEN

At the conclusion of the debriefing, you are sent to the PLATOON CONTROL screen. You can use this time to assign platoon personnel to new positions, replace casualties, and award decorations and promotions as appropriate.

Each crew's record is maintained and displayed whenever that unit is selected. This record displays the names, ranks, and awards of the individuals on the crew. During each battle, the platoon will accumulate "award" points and "promotion" points for events, such as the destruction of enemy units, the taking of objectives, and so forth.

At the PLATOON CONTROL screen, these points are used to both decorate and promote the members of the platoon. The Screen consist of four Crew sections and the Control sections.

The Crew sections are the heart of this screen. A Crew section contains data on each crewman. This data includes the character's **Name, Rank, Skill Level** and a **Picture** of the character. Both a rank icon and a three-or four-letter abbreviation in front of the character's name indicate the character's rank. In addition, the character's **Crew Position** is given, as well as the ribbons for any **Decorations**.

The **Control Section** is located at the bottom of the screen and consists of five Operation buttons, listed below:

Move Promote Medals Replace Done Exit Campaign

PROMOTIONS

You might have platoons from either the Army or the Marines. The names of the various enlisted ranks are different for the two services. A table of comparative ranks is given below (lowest to highest):

| Game Rank | U.S. Army | U.S. Marines |
|-----------|---------------------------|---------------------------|
| R1 | Private (PV1) | Private (PVT) |
| R2 | Private (PV2) | Private First Class (PFC) |
| R3 | Private First Class (PFC) | Lance Corporal (LCpl) |
| R4 | Corporal (CPL) | Corporal (Cpl) |
| R5 | Sergeant (SGT) | Sergeant (Sgt) |
| R6 | Staff Sergeant (SSGT) | Staff Sergeant (SSgt) |
| R7 | Platoon Sergeant (PSGT) | Gunnery Sergeant (GySgt) |
| R8 | First Sergeant (1SGT) | Master Sergeant (MSgt) |
| R9 | 2nd Lieutenant (2LT) | 2nd Lieutenant (2LT) |
| R10 | 1st Lieutenant (1LT) | 1st Lieutenant (1LT) |
| | | |

STARTING RANKS

Each position in the platoon has a starting and a maximum rank associated with it. In addition, the platoon also has a limit to the number of crew members who can hold any particular rank. Promotion costs vary with the rank bestowed. For example, it is cheaper in award points to promote a private to PFC than to promote a corporal to sergeant.

| Crewman | Starting Rank | Minimum Rank | Maximum Rank |
|---------|---------------|--------------|--------------|
| PLT LDR | R9 | R8 | R10 |
| PLT SGT | R7 | R6 | R7 |
| TC 2-3 | R5 | R5 | R6 |
| GNR 1-4 | R4 | R4 | R5 |
| DVR 1-4 | R2 | R1 | R4 |
| LDR 1-4 | R1 | R1 | R3 |



NUMBER OF CREWMEN BY RANK

The following totals, by rank, are allowed in the platoon: Note that only one Platoon Leader is allowed, but he can be R8, R9 or R10.

| Rank | Number |
|-------|--------|
| R1 | 16 |
| R2 | 8 |
| R3 | 8 |
| R4 | 8 |
| R5 | 8 |
| R6 | 6 |
| R7 | 1 |
| R8-10 | 1 |

PROMOTION ELIGIBILITY

There are three categories for promotion eligibility. Each one is determined by these rules:

- A crewman is Not Eligible for promotion if he meets any of these criteria:
- The cost of the promotion is greater than the number of Promotion points remaining.
- The crewman is a new replacement (has not been in combat with the platoon).
- The platoon already has the maximum number of crewmen at the new rank or in the next position tier.
- The crewman is the maximum rank for his crew position, and there are no unoccupied positions in the next tier. (Tiers = LDR, DVR, GNR, TC, PLTSGT, PLTLDR)

A crewman is **Conditionally Eligible** for promotion if the crewman does not meet the criteria for **Not Eligible** *and* meets *both* of these criteria:

- The crewman is the maximum rank for his crew position, and there are unoccupied positions in the next tier.
- The crewman meets the minimum rank requirements for the new position.

A crewman is **Eligible** for promotion if the crewman does not meet the criteria for **Not Eligible** or **Conditionally Eligible**.

To promote a crewman, select the **Promote** button in the Control Section. This places the screen in Promotion mode. At the same time, each crewman is highlighted to indicate promotion eligibility as follows:

> Bright: Crewman is eligible for promotion. Normal: Crewman is conditionally eligible for promotion. Dimmed: Crewman is *not* eligible for promotion.

PROMOTING CREWMEN

To promote a crewman, select an Eligible or Conditionally Eligible crewman by left-clicking on the Crewman's picture. This activates the PROMOTION POP UP box. The box shows the new rank icon and the promotion point cost of the new rank. The box has two buttons: **Accept** and **Cancel**. You can also cancel the promotion by using Esc or left-clicking on another crewman or another mode button. Left-clicking on the **Accept** button promotes the crewman, deducts the point cost, and updates the eligibility of all crewmen.

If a Conditionally Eligible crewman is promoted, a warning box appears, showing the unoccupied position that will be filled and giving you a chance to **Accept** or **Cancel** the promotion. If accepted, the crewman is automatically moved to the unoccupied next tier position and treated as discussed in the **Move** section below. After each move that includes a Tank commander, Platoon Sergeant or Platoon Leader, the command organization of the platoon is checked. See **Reorganization** below.

AKING COMINIAND

If more than one position is unoccupied, the selection is based on tank in the following priority:

Current vehicle
Vehicle #3
Vehicle #2
Vehicle #4
Vehicle #1

Note: The Platoon Leader's position (TC#1) does not count for Conditional Promotions except as noted for the Platoon Sergeant. It is not a Tank Commander tier position; it is a Platoon leader position. If the Platoon Sergeant has been promoted to R7, he can only be Conditionally Eligible for promotion if the Platoon Leader is eliminated. If he is promoted in this case, the platoon is immediately reorganized with the #4 tank and crew moved to the #1 position.



AWARDS

Like promotions, medal costs vary according to the actual medal awarded. The only exception is the Purple Heart, awarded to any wounded crewmen without cost. Crewmen are either eligible for an award or they are not.

A crewman is **Eligible** for a decoration *unless* he meets any of the criteria below:

- The cost of the medal is greater than the number of Award points remaining.
- The crewman is a new replacement (has not been in combat with the platoon).

To decorate a crewman, select the **Medals** button in the Control Section. This places the screen in Decoration mode. At the same time, each crewman is highlighted to indicate promotion eligibility as follows:

> Bright: Crewman is eligible for decoration. Dimmed: Crewman is *not* eligible for Decoration.

Select an Eligible crewman by left clicking on the Crewman's picture. This activates the *DECORATION POP UP* box. The box shows the five different medals and the Award point cost of each. If there are not enough award points to award all five types of medals, only those that can be awarded are shown. You can cancel the award by using the *Esc* key or left-clicking on another crewman or another mode button. Left-clicking on one of the ribbon icons awards that medal to the crewman, deducts the point cost, and updates the eligibility of all crewmen.

MOVING CREWMEN

Selecting the **Move** button places the screen in movement mode. This mode allows you to move crewmen around the platoon within the limits discussed below. Move mode is the default mode for the PLATOON CONTROL screen. Crewmen may be moved in two circumstances. The first is within their current position tier. The other is by advancing the crewman up one position into the next higher tier.

CREW POSITION TIERS

TANK PLATOON II

Each crew position belongs to a specific organizational "tier." These tiers regulate the movement of crewmen between positions. Crewmen can only move up one job tier at a time. A crewman can not be moved to a lower tier job. They must meet all rank requirements in order to be moved. The job tiers are listed below in order of lowest to highest:

Loader Driver Gunner Tank Commander (Vehicle #2 or #3) Platoon Sergeant Platoon Leader

Move a crewman by selecting that crewman using a left mouse click on the crewman's picture. This highlights that crewman. Any crew position that the selected crewman can be moved to remains normal. Any prohibited position is dimmed. To move the character, left-click on the new position. If another crewman occupies the position, the two crewmen swap positions. If the position is unoccupied, the crewman is moved to the new position and the old position is left unoccupied. After each move that includes a Tank Commander, Platoon Sergeant or Platoon Leader, the command organization of the platoon is checked.

MOVEMENT ELIGIBILITY

There are two basic types of movement, lateral and advancing. Each has its own internal requirements for eligibility. Crewmen may always be moved or traded with other crewmen or positions within their current job tier. In order to be advanced to the next tier, the following requirements must be met:

The crewman must have the minimum rank for the higher job.

The position must be unoccupied.

The crewman may not have already moved up a tier since the last battle.



REPLACEMENTS

When crewmen are killed or seriously wounded, they must be replaced. After you have completed advancing and moving any surviving members of the platoon, replacements for the remaining positions are automatically assigned when you exit the Platoon Control screen. Replacements are not eligible for promotion or decorations until after they have participated in combat.

There are three basic situations in which a crewman is replaced, and they are described individually below.

CREW CASUALTIES ONLY

If one of the platoon vehicles loses one or more enlisted crewmen during a battle—but the vehicle is not destroyed—new personnel replace the open positions. These new crewmen are placed in all open crew positions at the time that the replacements are requested. If you want to move experienced platoon crewmen to fill more advanced jobs, do this before replacements are called for.

ENTIRE VEHICLE LOSSES

If a vehicle is destroyed with its entire crew, a new crew and vehicle is given as a replacement at the end of the current mission. All crewmen in the new vehicle are at the minimum rank.

VEHICLE AND PARTIAL CREW LOSS

If one or more crewmen survive a destroyed vehicle, a new vehicle is received, and the crew are replaced.

PLATOON REORGANIZATION

Any time a crew move or promotion includes a TC, the PLT SGT, or the PLT LDR, platoon reorganization must be checked. If any changes are required, a message box will inform you that, "The platoon is being reorganized." If a crew is moved due to platoon reorganization, the *entire crew and vehicle* are moved to the new position in the platoon. The target organization for the platoon has the senior platoon leader (rank R8 to R10) in the #1 tank, the platoon sergeant in the #4 tank and the two junior Tank Commanders in the #2 and #3 tanks.



NATIONAL TRAINING CENTER TUTORIAL

The National Training Center at Fort Irwin, California is an outgrowth of an earlier Army training program called Red Thrust. Red Thrust was organized at Fort Hood, Texas in the mid-1970s with a cadre of Army personnel who had been specially trained to operate using Soviet tactics and doctrine. This OPFOR cadre was the predecessor of the infamous "32nd Guards," the undisputed champions of the desert north of Los Angeles, and the whetstone with which the Army hones the cutting edge of its combat battalions.

NTC's training environment is the closest thing you can get to real combat without breaking out the body bags. The heart of the concept is the multiple integrated laser engagement system (MILES). MILES tracks every "shot" fired and calculates its effect based on both the weapon and the type of target. Troops have to fire their weapons exactly as they would in combat. For example, TOW teams using the MILES sight must track their target for the normal duration of a missile's flight, just as if they were wire-guiding the missile in. They cannot score a direct hit unless they do. Likewise, MILES gives an infantryman no credit for firing his M16 at a Bradley unless there are crewmen exposed to his rounds. Individual sensors on each man's body indicate immediately if he has been hit. An intricate system of sensors and microwave relays overlaps the entire battlefield, allowing the Command Center to track and record the action.

TANK PLATOON

In *M1 Tank Platoon II*, the NTC cadre is trained to challenge your platoon as thoroughly as any OPFOR opponent you will encounter elsewhere in the game. You won't leave NTC with an overconfidence that could get you killed down the line. By the time you undertake this tutorial, you should have both completed the Armor School at Fort Knox and familiarized yourself with the Multimedia Training curriculum. The tutorial consists of eight missions. Four are offensive, three defensive, and one—the counter-reconnaissance mission—is a blend of both styles. Together, they introduce you to every possible type of mission you might subsequently encounter in the campaigns. Refine your skills without penalty by playing any of these mission types as often as you like. Every mission provides a fresh challenge, varying the supporting and opposing forces, deployment, terrain and enemy tactics to keep you on your toes. That's what you can expect in the "real world" as well, so you had better learn how to handle it.

You can undertake these missions in any order. However, it's probably best to familiarize yourself with a few of the particulars about each type of mission before actually diving in. Read up on your objectives, study a few recommended maneuvers, and pick up some tips from those who have passed through training before you. Then proceed to your briefing, where you'll hear specifics about the mission the instructors have prepared for you today.

MOVEMENT TO CONTACT

TANK PLATOON II

Movement to Contact missions are appropriate when you know—or believe—that an enemy force is in a sector, but you're not sure precisely where it is or what its intentions are. This type of mission is similar to pure scouting, in that its goal is reconnaissance; units are expected to locate the enemy and report on the situation. Once you've found an enemy force, however, the two mission types differ in the paths they then take. Pure scouting missions attempt to gather intelligence data while remaining undetected. Units then report to the Tactical Operations Center (TOC) so the Battalion or Brigade Commander can plan a Deliberate Attack. Movement to Contact units, on the other hand, engage and suppress the forward elements of the force until additional combat units can enter the battle. As such, Movement to Contact often precedes offensive operations like Deliberate Attacks and (more commonly) Hasty Attacks.

OBJECTIVE

Move across the combat area and find the enemy force. After locating the enemy, you must try to neutralize the threat and continue the mission. Terrain objectives are secondary objectives. Your primary goal is to destroy the enemy's advance elements while keeping your own casualties to a minimum.

SCHEME OF MANEUVER

As a forward element independent of your main force, you have little immediate support. Chances are that after making contact with the enemy, you will be outnumbered, so security is your primary consideration. Security usually comes in two forms: speed and surprise. Speed minimizes the time the enemy has to react, but it can be deadly should you stumble into a prepared enemy position. Depending on how open the terrain is, achieving surprise can also be difficult. Plan your avenue of approach to take advantage of the terrain that offers the best cover and concealment.

Be alert for choke points—natural terrain features that funnel movement through an area. These always bear the potential for ambush. When only one avenue of approach is possible, you can almost bet that the enemy is there. If sufficient support is available, you might consider calling in an air strike and artillery barrage on the choke point before exposing your forces to any surviving enemy elements. TANK PLATOON

EXECUTING THE MISSION

On contact with the enemy, your first responsibility is to determine what you are up against. When the initial rounds start to fly, you have, in all likelihood, encountered only the tip of the enemy "spear." To see how large and deadly it really is, you've got to probe further. Use the wingman team that located the enemy unit to lay down suppressing fire while your other team moves forward in a flanking maneuver. Don't leave either unit stationary for very long; you can be certain that enemy forward observers will be calling in artillery and air strikes on your positions.

If your maneuvering element uncovers additional enemies in static, dug-in defensive positions, consider using indirect fire to harass them. (You want to save your limited direct fire ammunition for mobile targets.) If enemy opposition is too concentrated, pop smoke, back up, and look for covered positions to engage them at range. Remember, the M1A2 has a distinct advantage in low visibility conditions. In addition, the penetrating capabilities of the APDFS round at extreme range exceed those of all other types of ammo deployed by either side. If you do choose a standoff attack posture, try not to make it easy for the enemy to target you with ATGMs or lay on artillery. Fire at most three rounds per tank, then move to a new position.

LESSONS LEARNED

The following general lessons from Army SOP are applicable:

- Do not move forward from an overwatch position or BP. Back away from your position and go around on the low ground.
- Stay on low ground as much as possible. Moving on top of ridge lines or over hilltops will silhouette (skyline) platoon vehicles.
- Select the formation and movement technique that maximize the platoon's battle space while minimizing gaps and dead space.
- If your move is being covered by an overwatch element, remember that the overwatch element cannot cover all of the platoon's gaps and dead space.

If the move is being overwatched, also keep in mind that the distance of each move (or bound) must not exceed the direct fire range of the overwatch element.

HASTY ATTACK

TANK PLATOON II

The important difference to understand between a Hasty Attack and a Deliberate Attack is that the former sacrifices preparation time for operational tempo and maintenance of the initiative. You do not have the luxury of bringing all the forces in the area to bear, but neither does the enemy. Think of it as a "come as you are" engagement.

Because of this, your contingency planning must be extremely flexible. Even though you have the benefit of some intelligence on enemy composition and disposition, the tactical situation remains just as fluid as it is in a Movement to Contact mission. OPFOR units will be following classic doctrine and attempting to amass sufficient forces in an area for subsequent operations. By pressing the attack, you hope to disrupt their plans and engage their forces piecemeal as they move into the area of operations.

NTC no longer differentiates between the Hasty Attack and counterattack mission profiles. Counterattacks are mounted to take advantage of the natural state of confusion and disarray that results when an enemy offensive loses its cohesion. Instead of allowing the enemy time to regroup into a coordinated defensive position—or to mount a follow-on attack with additional forces moving into the area—employ a counterattack. The counterattack is used both to shift friendly forces from a defensive to an offensive stance and to take the initiative back from the enemy.

There may be times when your platoon has a purely defensive mission like Defend in Sector or Defend a Battle Position—and you, the local area commander, determine that the time is appropriate to mount a local counterattack through fire and movement. In these instances, you won't have the luxury of planning your maneuvers before the rounds actually start flying. You will need to learn to recognize these situations on the fly and maintain tactical flexibility in order to capitalize on them.

For more information on OPFOR Doctrine and Tactics, see both **CIS Tactical Doctrine** and the **OPFOR Combat Doctrine** section of the **M1 Tank Platoon War College** training curriculum.

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OBJECTIVE

The Hasty Attack is designed for the immediate destruction of a previously located enemy force, whether of known or unknown composition. A Hasty Attack may also specify a particular terrain objective to occupy during the course of the engagement, but (as before) destruction of the enemy force remains the primary objective. Commanders should attempt to keep friendly losses to a minimum, to allow for rapid reorganization and to maintain a quick offensive tempo.

SCHEME OF MANEUVER

Speed of advance is more critical in a Hasty Attack than in a Movement to Contact mission. The more time you allow the enemy to group, the greater the firepower ratio he can mount against you. You must, therefore, dictate the tempo of the engagement by pressing forward as rapidly as possible but without unduly jeopardizing the security of your platoon. Your best plan is to adopt a traveling overwatch with alternate bounds.



Movement by alternate bounds

As before, be mindful of terrain features that offer concealed firing positions, either for your own forces or for those of the enemy. For example, call in artillery strikes on the reverse slope of prominent ridge lines (near the crest); that way, you allow your indirect fire support to suppress potential hull-down firing positions. In a Hasty Attack, you must assume that the enemy has had at least some time to prepare defensive positions. They are less likely to be moving in the open when you encounter them than in a Movement to Contact mission. As a result, you might want to deploy "fast mover" fixedwing air support if you have it. Consider sending it to reconnoiter the battlefield ahead of your approach; the air support is likely to pick out dug-in enemy formations. If you know where they are, you can concentrate on those positions instead of resorting to "action on contact" drills.

EXECUTING THE MISSION

TANK PLATOON II

Because you are operating with limited knowledge of the deployment and intentions of the enemy, you will likely have to modify your initial orders on the BATTLE PLANNER screen once you have made contact with the enemy. Don't be disturbed by this; in modern warfare, few plans survive combat unmodified. Victory often depends on how well the on-scene commander evaluates the tactical situation as it develops. A successful commander knows how to modify his unit's approach without losing sight of the original mission objectives. One of the greatest strengths of the U.S. military is a chain of command that authorizes those on-scene to make decisions. No one understands the immediate tactical situation better than the people experiencing it firsthand.

The easiest way for you to assess the overall plan and make tactical modifications on the fly is from the MAP screen. Here you can monitor the advance of your forces. (Make sure to give them "Contact Fire" orders; that way, they will engage all enemy units sighted along the way, but they will retain their original movement orders until you change the plan.) As enemy units fire on you—or come into line of sight of your units—they appear on the MAP screen. Maintain the axis of your advance unless a sufficiently large threat is encountered on either side of your plotted intended movement (PIM). If you encounter one off the axis of advance, don't attempt to bypass the threat by continuing forward so that it ends up on either your flanks or rear. Instead, use the MAP screen to reorient your formation and axis of travel toward the threat. That lets you not only bring the maximum firepower to bear on the immediate threat, but also use your strongest defense—your frontal armor.





Action drill with enemy contact

Each new contact must be evaluated in terms of potency and immediacy. A potent threat is one that might prevent you from accomplishing your mission. (A platoon of enemy T-90s popping up unexpectedly in your rear would be an example of a potent threat.) An immediate threat is an enemy unit within firing range of your units and capable of damaging them, but which doesn't have the firepower on hand to jeopardize the mission. A unit of BMPs engaging an M1 platoon would be an immediate threat; they don't have the punch to knock you out of action—but they might destroy sensors, thermal sights and other electronics, which will degrade your capability against more potent threats later in the mission. A BMP Headquarters unit positioned on a ridge line with a clear view of the battlefield would also be considered an immediate threat, even if you are outside the direct fire range of their weapons, because they can act as spotters for artillery fire or even call in air strikes against your position.

Since you rarely have the luxury of encountering only one enemy unit at a time, you must constantly evaluate the potential threat posed by each of the units you face. You need to determine the proper order in which to engage them. Use the following criteria to guide your decision making:

- Class "A" threats are both potent and immediate. If necessary, disengage from other units to address these threats first.
- Class "B" threats are immediate only.
- Class "C" threats are neither potent nor immediate, and you can deal with them at your discretion. Examples of this type of threat are anti-air vehicles without ground assault capability or combat services support vehicles like fuel trucks. Class "C" threats cannot imperil forces immediately, although they might support future enemy actions if left unmolested.

LESSONS LEARNED

ANK PLATOON I

The lessons you should take away from this training exercise will serve you in good stead in other types of engagements as well.

- Y Use supporting assets to reconnoiter the battlefield when available.
- Remain flexible and modify your tactical approach as the situation develops.
- To maximize offensive and defensive capabilities, orient your forces toward significant threats.
- Prioritize your threat-engagement queue based on potency and immediacy.

The platoon is capable of conducting limited counterattacks, either alone or as part of a larger force (usually the company team), to accomplish the following:

Complete the destruction of the enemy.

Regain key terrain.

Relieve pressure on an engaged unit.

Initiate offensive operations.

Two methods are available to the platoon: counterattack by fire and counterattack by fire and movement. In both types, coordination and control are critical to the success of the counterattack. Locations of routes and positions must be planned and disseminated to all units; this assists the counterattack force and other elements in controlling indirect and direct fires. If adjustments to any route or position become necessary, the counterattack force must take immediate action to ensure that other forces lift and shift fires; otherwise, fratricide becomes a distinct danger.

When the company team executes a counterattack by fire, one platoon conducts tactical movement on a concealed route to a predetermined BP or attack by fire position from which it can engage the enemy in the flank and/or rear. The remaining platoons hold their positions and continue to engage the enemy. The intent of this method is to use weapon standoff and/or cover to full advantage and destroy the enemy by direct fires.

The intent of Counterattack by Fire and Movement is to close with and destroy the enemy. The counterattack force uses tactical movement to gain a position of advantage from which it attacks the enemy (from the flank, whenever possible). It conducts hasty attacks and assaults based on the particular situation.

DELIBERATE ATTACK

TANK PLATOON II

Deliberate Attacks are designed to punch through prepared enemy defensive positions, clearing the way for follow-on forces. The follow-on forces can then exploit the breach and run roughshod through the enemy's rear areas. The only way to achieve the element of surprise in a Deliberate Attack is through operational deception during the actual maneuver. The enemy knows you are coming and has taken every possible measure to give you a hellish reception.

Your chain of command realizes this as well. You always receive at least one additional platoon in support, and there is a chance that you might get as many as two or three. These are rarely M1 platoons like yours. More often, they are Mechanized Cavalry platoons or Anti-Tank platoons. If enemy air power is a factor, you might also receive some Air Defense Vehicle (ADV) support. You can generally expect combat support assets like mortars, MLRS, or 155mm artillery. Rotary or fixed wing air support might also be provided—when it is not otherwise occupied.

On rare occasions, you might be granted control of a UAV reconnaissance drone. If so, it's best to assign the drone a waypoint pattern that zigzags across the battlefield to uncover as much of the enemy deployment as possible. Then, before you advance, pummel the most threatening positions with indirect fire and air support. This softens up their defenses prior to your assault.

OBJECTIVE

You are under orders to move into the contested area, destroy any defending enemy units (or force their withdrawal), and hold the objective until relieved by follow-on forces. You might have to move past the stated objective to properly secure the sector. By the time the main force arrives to exploit the breach you have created, the objective area must be clear of enemy fire. You must eliminate even indirect fire from ranged assets. As always, your aim is to destroy enemy forces while minimizing your own casualties.

SCHEME OF MANEUVER

Because the battalion has had time to conduct some reconnaissance and planning prior to the assault, the enemy threat axis should be fairly apparent. You might have some latitude, however (terrain permitting), when determining your axis of advance. That's where operational deception—OPDEC—can come into play. Very likely, one approach to the objective area may seem the most logical. Unfortunately, it is no doubt also the most heavily defended, since the enemy can "see" the ground just as you can. Consider probing attacks with some of your assets along expected avenues of approach. This might attract the enemy's attention, permitting you to move the main force circumspectly around the enemy's flanks.

TANK PLATOON

An alternative, given that you have at least one platoon in support (and possibly more), is to let the main force advance methodically. In this case, try using the traveling overwatch method of successive bounds with entire platoons, not just the wingman pairs within your platoon. When operating with two mechanized cavalry platoons, for example, your M1 platoon can move as one of the elements in the diagram, while either or both of the Bradley platoons form the second element in this overwatch plan. If you have the luxury, grouping the two Bradley platoons together gives you better balance between the left and right punch of this maneuver.



Movement by successive bounds provides the greatest overall security to forces in a high-threat environment. In the preceding example, you would want to station your M1 platoon as the unit on the right side. This platoon should move first to any new position, because it is the stronger of the two groups—both offensively and defensively. As long as your flanks are secure, form a line abreast to maximize your forward firepower. If there are potential threats on the flanks, however, consider a combat wedge formation during each bound of the advance—shift to a line abreast only when the unit assumes overwatch duties.

EXECUTING THE MISSION

TANK PLATOON II

Having developed a fire and movement plan that maximizes security against prepared defensive positions, your job is not done. You cannot assume that the enemy will remain in those positions forever and allow you to dictate the pace of the engagement. Counterattack is always a possibility. If you're not prepared for it, a well-timed one stands an excellent chance of disrupting your assault. Supporting platoons are in the greatest jeopardy when faced by a heavy armored counterattack.

As the force commander, you must assess threat priorities for the force as a whole. You can't afford to concentrate on a single platoon; instead, you have to devote your heavy firepower (the M1s) to defending the most vulnerable units against the most potent threat. Even following a successful mission with no casualties to the M1 platoon, you might still be relieved of your command if the supporting platoons were chewed up while your attention was elsewhere.

How you respond to a counterattack depends on the terrain and relative position of your forces when it occurs. Let's use the diagram labeled "Overwatch by successive bounds" to illustrate a couple of possibilities. Use these as building blocks for tactics in different situations.



TANK PLATOON



Direct fire

If the counterattack occurs between bounds (as in panels one or three) hold your defensive positions on the dominant terrain and engage the enemy forces on the move between ridge lines. As before, avoid remaining stationary for too long, lest you come under counter-battery fire. M1s should take two or three shots between each move along the ridge. Bradleys or Humvees ought to move after each TOW round fired. If after three such rotations the enemy counterattack still has not stalled, consider using the M1s to pin as many of the enemy as possible. At this point, the supporting platoons should take one of two measures. They can withdraw to new defensive positions from which to cover a fighting withdrawal of the M1 platoon. Alternatively, the supporting units can move behind and around the ridge to engage the advancing enemy formations on the flank. 83

The counterattack might come instead while the M1 platoon is moving forward to set up covering fire on the next ridge line (or any other piece of defensive terrain). In this event, pop smoke immediately and conduct a fighting withdrawal back to a position parallel with that of the overwatch element. If, on the other hand, the attack occurs after the M1 platoon is on overwatch, you have two options: hustle the supporting platoons up in a normal bounding overwatch maneuver and then fix into a parallel defensive position, or use the fact that these forces aren't in contact to conduct an immediate flanking maneuver and gain positional advantage on the enemy.

Don't forget to use up any remaining supporting assets against an enemy counterattack as well. By coming out of his prepared defenses, the enemy is clearly trying to take the initiative away from you. You must use everything at your disposal to preclude him from achieving that goal. If you break up his counterattack, his forces are likely to withdraw in disarray, so don't worry about needing these assets later in the battle.

LESSONS LEARNED

TANK PLATOON III

This training exercise is designed to teach you to use support assets (capable of both direct and indirect fire) to their fullest potential. It also represents the most difficult offensive problem you will face during the NTC course of instruction. You should internalize the following lessons from this training:

- Despite the best intelligence in the world, the enemy is always unpredictable. Plan for contingencies based on enemy capabilities, not intentions, as you will never know the latter with any certainty.
- Adopt a force-wide perspective when evaluating threat priorities and allocating fire.
- Consider the use of operational deception to mislead the enemy and achieve a limited element of tactical surprise.
- Avoid sacrificing the offensive initiative to the enemy. Dictate the tempo of the engagement.

DEFEND IN SECTOR

Although it is common knowledge that the best defense is a good offense, the best logistic chain in the world is incapable of sustaining continuous offensive operations. During those periods of resupply and reorganization, one must of necessity defend both friendly forces and any important terrain objectives that might be contested by the enemy. Defensive operations might also be ordered in one sector to allow the theater commander to shift forces behind the lines and mount an offensive elsewhere. As a result, the successful M1 tank platoon commander must be equally as adept at defensive planning and operations as he is at their offensive counterparts.

Successful defensive engagements are, as a rule, won or lost during the planning phase. In **Scheme of Maneuver**, you are introduced to defensive planning considerations which will serve you equally well for the initial phases of the other defensive mission profiles as well. Also, remember that when the opportunity for a well-timed counterattack arises, seize it!

OVERVIEW

The primary objective of the Defend in Sector mission profile is to destroy all enemy units attempting to cross the sector or to attack terrain objectives within it. At mission's end, no enemy units can occupy—or even be firing on—the designated objectives. Initially you should employ static defensive positions until contact is made. Then shift to a mobile defense, or even a counterattack when the situation warrants it. The important distinction between this mission profile and Defend a Battle Position, is that mobility generally plays a much larger role during Defend in Sector tasking. The enemy may be moving against several objectives simultaneously instead of one or two key terrain features. Therefore, you must position your force like a mobile reserve, able to counter each of his thrusts in the order of your choosing.

SCHEME OF MANEUVER

TANK PLATOON II

Ideally, you want to establish your primary defensive positions forward of the objectives you are charged with protecting. Terrain permitting, secondary fighting positions with overlapping fields of fire should be established on or nearer to the objectives. If sufficient supporting forces are present, deploy some of them in well-concealed positions along the flanks of the anticipated axis of advance. The idea is to create a killing zone (also known as a "fire sack") 2000 meters in front of your main defensive line. Multiple friendly units should be able to trap every enemy unit crossing this area in overlapping arcs of fire. You might sustain some casualties, but these can't be so severe as to compromise the integrity of your fire plan. Inflict maximum casualties on the advancing enemy with artillery and air strikes outside direct fire range, then continue attrition of the surviving units as they cross the "trigger lines" of each layer of your defense. This tactical approach is also known as "defense in depth."



The primary concern in selecting fighting positions is the platoon's ability to concentrate and mass lethal fires into its sectors of fire. Whenever possible, primary and alternate fighting positions should allow engagement of the enemy in the flank and from two directions. Supplementary fighting positions should always be planned to allow the platoon to defend against enemy forces that penetrate adjacent platoon positions or that move along additional avenues of approach for which the commander has assumed risk. Dispersion among fighting positions reduces vulnerability of platoon vehicles to enemy fires; however, dispersion increases the demands for local security in the area between vehicles.

Ideally, the platoon will occupy hull-down firing positions as the enemy crosses the direct fire trigger line. The trigger line should optimize weapon standoff, while the firing positions and the designated firing pattern should be selected to create the opportunity for flank engagements.

Primary and alternate fighting positions are oriented on the same sectors of fire. Supplementary fighting positions orient on different sectors of fire. Subsequent BPs are those that orient on sectors of fire along the same avenue of approach as the primary/alternate positions. Supplementary BPs are oriented on sectors of fire along different avenues of approach.

EXECUTING THE MISSION

Just as you have learned to use artillery as part of an offensive mission, there is a high probability that the enemy will use it against you when he is mounting an offensive. Minimize the impact of his efforts by planning for them in advance. When you have designated primary and alternate fighting positions for your units, even if the enemy drops a barrage on your position, you might be able to use the cover it provides to shift to your secondary positions—thereby (hopefully) gaining an unobstructed view of his possible approach routes.

The greatest danger you face in deploying units to the flanks in an area defense is to let them stray out of support range of one another. You cannot allow the enemy the luxury of engaging your units piecemeal. Once one of your units comes into contact with the main body of the enemy, the other units must be in position to rapidly bring their combat power to bear. Do not assume, however, that at the first sign of enemy activity you should immediately advance with all of your mobile reserves. Rather, you must evaluate the situation and maneuver to maintain contact with the maximum local firepower possible. This might entail pulling the units which initially made contact back from a threatened position-both for their own survival and to entice pursuing attackers deeper into your kill zone before engaging with the other units that form that zone. This approach is most effective when you are reasonably certain that your remaining units are in good cover and have not yet been detected. Though the enemy might have gotten in the first shot on whichever friendly unit made contact with them, an effective first salvo from the balance of your forces could still stall or disrupt the enemy advance.

TANK PLATOON II

When you must give ground in the face of enemy forces, do so in an orderly fashion. Employ movement by successive or alternate bounds (in reverse, of course). First one unit or pair of wingmen should lay down covering fire for the retreating element, then the elements should reverse their roles. Since you are conducting a fighting withdrawal, the distance between bounds should be shorter than when on the offensive. Otherwise, you risk exposing the covering element to excessive counter-battery fire while in a stationary position. Take this into consideration during the planning phase of operations, so you aren't trying to select defensive hiding positions in the midst of a firefight.

Use supporting arms only when you are certain they will have an appreciable effect on the engagement. You can't afford to use up every artillery call for fire on the first enemy units to appear. You might soon discover that you have squandered these precious resources on the advance guard of the main body, leaving yourself grossly outgunned and lacking further support. In addition, don't forget to take into account the time of flight and the enemy's rate of advance when calling in artillery. Nothing is more frustrating than to see firepower wasted in the wake of the enemy's passage, leaving them unmolested until you engage them with direct fire. Mobile defenses demand proper prior planning. The greater the number of tactical options and predesignated fighting positions you identify prior to the engagement, the greater your flexibility in the heat of battle. When you have only one option, it certainly can't be the "best" option.

TANK PLATOON

- Even in the face of enemy pressure, don't lose sight of your terrain and mission objectives. You cannot allow the enemy to consolidate a defensive position around any of your assigned objectives; with the limited forces under your command, it will be twice as hard to root him out again.
- Defending in depth does not mean defending in a piecemeal fashion. You do want the enemy to undergo attrition the farther he advances into your fire sack, but you don't want your forward-most elements to be outside mutual support range, either.
- You have to assume, as a minimum, that the enemy offensive possesses numerical superiority. Thus, you must employ indirect fire and air strikes to greatest advantage to even the odds a bit before all of your forces are committed in direct-fire engagements.
- Finally, anticipate the enemy's tactics based on the capability of his force and plan for contingencies to counter these possibilities. In other words, be ready for air action in case he is using these assets to scout out your positions. Be prepared to shift forces to alternate positions if he lays down an artillery barrage, and so forth. The more you have thought these things through, the smaller the chance that you will be surprised. Removal of the element of surprise goes a long way when you are on the defensive.

DEFEND A BATTLE POSITION

The primary difference between Defend in Sector tasking and Defending a Battle Position concerns mobility. Defend in Sector missions can have multiple terrain objectives, but the battles tend to be very fluid. You have the option of giving ground and conducting a fighting withdrawal, provided you can take the initiative back from the enemy when you have sufficiently weakened his forces. The key element for success is to prevent the enemy from controlling or firing on any of the mission objectives by the battle's end. The Defend a Battle Position mission profile is a little more rigid. Your tactical options are more limited, and victory is generally more elusive to the inexperienced commander.

OVERVIEW

In essence, you have been ordered to hold your ground despite the best the enemy has to offer. Granted, there are times when it is better to withdraw in the face of overwhelming odds, but this isn't one of them. If you allow the enemy to take the objective that you were ordered to defend, it could have drastic implications on the overall strategy for the theater of operations. By the same token, if most of your force is destroyed in holding the objective area, your mission still ends in failure. Remember the concept of unacceptable losses?

You are facing one of the most precarious positions a battlefield commander can find himself in—outnumbered and with little room to maneuver. Winning in restricted battle space is difficult, but there are a number of things you can do to increase your chances. Ideally, you want to remain concealed until you know the enemy force has committed to a particular avenue of advance. Then, and only then, you should call for indirect fire along the axis of his advance. Try to time your direct-fire attack to coincide with the arrival of the first artillery rounds. The idea is to win the battle of the first salvo by hitting hard and fast. This might well create confusion and disarray in the enemy ranks, letting you take the initiative away from him by a well-timed counterattack. In addition to developing mutually supportive positions (and alternatives) as in the Defend in Sector mission profile, you must also develop a strong fire-support plan to succeed in the static defense required by this mission profile. Since you won't have the option of using engineer assets to further channel the enemy's advance, you must plan your fire sack around the natural terrain features you encounter. When selecting hull- and turret-down fighting positions, you should take maximum advantage of background terrain that will keep your vehicles from being highlighted against the horizon. The following illustrations demonstrate the difference in concealment from the enemy's point of view for hull-down positions:

TANK PLATOON



As you can see, the more you can do to increase the level of cover and concealment of defending forces, the greater the likelihood that they will achieve surprise in the battle of the first salvo.

When developing the scheme of maneuver between your fighting positions, consider keeping the distance between an individual tank's positions relatively short. It is safe to assume that the enemy is advancing fairly rapidly. To avoid counter-battery fire, don't take more than two or three shots before changing positions. Too great a separation between fighting positions at any given moment unnecessarily degrades the available firepower on the defensive line. Keep to a minimum the lateral separation between primary and successive fighting positions, and ensure that units can move quickly between the positions without exposing themselves to direct fire in the process.

FIRE SUPPORT: U.S. ARMY OPS MANUAL

TANK PLATOON II

The platoon leader posts targets on his overlays (in both traditional and digital format). Although most fire support planning is done by the company FIST, the platoon leader can, if necessary, provide the FIST with nominations for additional targets for inclusion in the battalion fire support plan. As these targets are approved, he plots them on his overlays. If a target is disapproved, the platoon leader notes its grid coordinates so he can, if needed, submit a speedy call for fire using the grid method.

The platoon leader should plan and request artillery targets on potential avenues of approach, at choke points along the avenues of approach, at possible enemy support by fire positions, at obstacles, and in dead space within the platoon's battle space. He should also be prepared to request a mix of smoke and DPICM rounds in front of his BP to break an enemy assault or behind his BP to help the platoon disengage from the enemy.

Each artillery target should have a decision point overwatched by at least a crew or section. The decision point triggers the call for fire on a target to ensure that the impact of the rounds coincides with the enemy's arrival. The platoon's laser range finders or target-designation capabilities (on digitally equipped tanks) enhance its effectiveness in triggering artillery fires using decision points. The location of the decision point is based on the enemy's expected rate of advance over the terrain, the time of flight of the rounds, and the priority of fires. The company FIST should assist in determining all decision points.

The platoon leader should plan and coordinate mortar targets on dismounted avenues of approach. In addition, because mortar smoke is generally more responsive than smoke delivered by field artillery (FA), he may be able to gain a tactical advantage by employing mortar support in certain situations.

EXECUTING THE MISSION

The desired effect of all this planning is to allow you to determine when the battle begins—not in the sense of time of day, but at what range you wish to begin prosecuting the enemy. These points are also known as trigger lines. Because of the M1's distinct advantages, in terms of both accuracy and penetration power (at a range of 3000 meters), the initial impulse of most inexperienced commanders on the defensive is to set their trigger line for direct engagement at that range. The problem is that although this approach virtually ensures good attrition of the advance elements of the enemy force, it also gives the enemy time to reorient the axis of advance of the main body before it is committed to move through your carefully prepared fire sack. And that, generally, requires you to immediately reorient the entire defensive plan in the attempt to avoid being flanked. Not a good situation, but one that is also easily averted with a little patience.

TANK PLATOON

Instead, take advantage of the column and echelon advance of a full blown regimental attack to engage the advance guard and main body simultaneously, with the element of surprise. (See the section on CIS doctrine and the **M1 Tank Platoon II War College** for additional details on enemy tactics.) Set the artillery trigger line at 1750 meters. When the first elements advance to this point, call in artillery on their position. They will be well past that point when it arrives, but the main body which trails them should arrive just in time. Your direct-fire trigger line should be set at 1500 meters. That way, you can attack the advance element simultaneously with all of the platoon's firepower at roughly the same time artillery begins to pummel the main body. Should the advance element pause or slow down before reaching 1500 meters, engage them anyway when you hear the first rounds of the artillery barrage passing overhead.

Your intent is to ensure surprise, mass, and concentration of fire on as much of the enemy force as possible in the first minute of the engagement. By keeping the engagement between 1500 and 2000 meters, you are minimizing the danger to friendly units. (M1 tanks are fairly invulnerable until the enemy crosses the 1000 meter mark.) Furthermore, this ensures that most of the enemy units are far enough inside the kill zone that you will have multiple chances to destroy them before they can exit the zone. With two exceptions, you should always engage the closest units to your position first, then work your way toward the extreme end of the fire sack. The first exception involves special terrain features, like a very narrow choke point at the extreme end of your fire sack. If such a funnel exists, you should start by destroying vehicles at the rear of the enemy main body. (This blocks any possible retreat, thereby forcing the survivors to cross unfavorable terrain to exit the kill zone.) The other exception is when you can clearly identify a BMP or Tank Headquarters unit. Once the engagement begins, these assets should be attacked first, and at a higher threat priority than closer units—outside the 1000-meter danger zone—whenever they are subsequently identified. In essence, anything you can do to disrupt enemy command and control is a good thing. In addition, without HQ units to spot and call for fire, the danger from indirect fire is minimized as well.

LESSONS LEARNED

TANK PLATOON II

NTC graduates have always complained that they didn't receive enough supporting assets to properly conduct this mission. More often than not, their success or failure stemmed less from that than from how well they understood the mission and took advantage of the resources they did have on hand. Here are a few of the tips gleaned from the after action reports of successful platoons:

- Surprise can be even more devastating on the defense than it is on the offense, provided you have the patience and nerve to achieve it.
- Ensure that you spread the areas of responsibility evenly among units in the fire sack, and be prepared to shift firing responsibilities on the fly. You don't want multiple friendly units attempting to engage the same target. You also want to avoid situations in which several units are idle while one or two are overwhelmed in a target-rich environment.
- Once the direct-fire trigger line is crossed, call in available air strikes to supplement indirect and direct fires. Without further intervention from you, these units will seek out their own targets from the survivors that remain.
- Be wary of feints. Sometimes the enemy will begin to pull back in the attempt to entice you to leave your defensive positions early. If you come out in the open, he can engage you far more easily. Don't counterattack until you are certain he is sufficiently weakened as to be unable to withstand it.



COUNTER-RECONNAISSANCE

When planning a major offensive, it is helpful to learn as much as possible about the disposition and strength of enemy troop concentrations. Thus, in addition to conventional and unconventional means of intelligence gathering, the offensive commander will also frequently order probing attacks. Use these to verify what is suspected by the information gathered from these other sources. Counter-reconnaissance missions are performed to preclude the enemy from gaining information about friendly deployments that he might subsequently exploit. To succeed, the commander of a counter-reconnaissance mission must contain the enemy advance and keep it from penetrating the forward screening force of the main body.

OVERVIEW

As always, the primary objective of any contact with the enemy is the complete destruction of his force with minimal losses to friendly forces. In the counter-reconnaissance mission, this is even more important; the more enemy units that you allow to withdraw from the battle, the greater the accuracy of the tactical picture given to the enemy commander. If you can ensure that the only reports he receives back are the panicked radio messages of units witnessing the destruction of their brothers in arms, you can introduce a strong element of doubt into the enemy commander's mind. He may seriously reconsider the wisdom of the offensive he has been planning. The difficulty of counter-reconnaissance missions is that even if you kill six of the eight units the enemy commits to the mission, and only one of the two survivors reports everything there is to know about your positions, the enemy has still accomplished what he set out to do. As such, inflicting a high price on his intelligence-gathering attempts is not enough. You must kill all of his listening posts and scouts quickly and cleanly before they can damage your operational security.

SCHEME OF MANEUVER



U.S. Army Filed manual FM17-987

When you have supporting forces, these will generally be either Scout platoons or Mechanized Infantry. Supporting units should be deployed forward of the M1 platoon, on good terrain to observe the area. These forces are reconnoitering for the enemy scouts and recon elements at the same time as the enemy is trying to do the same. By positioning the M1 platoon to the rear of the recon screen, you can use it as a mobile reserve for "hammer and anvil" tactics—when one of your supporting platoons makes contact with an enemy unit, they should take it under fire to pin it in place (the anvil) while the M1s move forward to destroy it (the hammer). This seems easy enough in theory, but how do you ensure that all of the enemy recon elements are prosecuted in like manner? The answer lies in proper management of the available battle space.

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Battle space is comprised of surfaces and gaps. Surfaces are those areas within the sector where you have visual sighting and engagement capability. Gaps are the dead space in your deployment plan where terrain blocks your ability to either detect or engage enemy units. Battle-space management is important in every mission profile, but it is especially critical in counterreconnaissance operations. Ideally, you want to maximize surfaces and minimize gaps to ensure the greatest chance of success.

TANK PLATOON

As the counter-recon operation progresses, movement continuously alters the available battle space. You must take active measures to shape the battle space to your own advantage. (Rest assured that the enemy will be doing the same.) The better coverage you can obtain in your initial deployment, the less frequently you will have to move units to detect the enemy. Every time you must move a unit, you are increasing the chances of counter-detection. This mission profile is really a game of cat and mouse in which both sides have one or more of each species on hand.

TRANSITING DANGER AREAS: U.S. ARMY OPS MANUAL

During the execution of reconnaissance and security missions, scouts will encounter specific types of terrain or features that expose them to enemy fire. These areas are likely points of enemy contact due both to the vulnerability of the scout and to the cover, concealment, and observation offered to the enemy. These areas should be identified and highlighted when the platoon leader performs his map reconnaissance during troop-leading procedures. Once these areas are identified, the scout can employ specific reconnaissance methods and movement techniques to move through them quickly and with maximum security.

Open areas frequently afford the scout the opportunity to observe the enemy from long ranges. Conversely, they often require that the scout be exposed to possible enemy observation and fire for long periods of movement. Before moving across a large open area, the scout must make a thorough visual scan of the area. This should be done both dismounted and mounted, using all available optics. This scan focuses not only on finding potential enemy positions, but also on locating covered and concealed routes for bounding and a covered and concealed position to move to. If time and terrain permit, dismounted scouts may be used to move to the far side of the open area and secure it. In very large open areas, use of dismounts may not be feasible because of the distances between covered and concealed positions. Once the area has been cleared using visual means and/or dismounts, the scout team moves across it. The scouts use bounding overwatch because of the likelihood of enemy contact. If the open area is very large, the overwatch vehicle should only remain stationary until the bounding vehicle has moved a distance equal to half the effective range of the overwatching vehicle's weapon system. When that point is reached, the overwatch vehicle must move out, even if the bounding vehicle has not yet reached a position of cover and concealment.

When moving across large open areas where cover and concealment are limited, the scouts should consider the use of reconnaissance by indirect or direct fire to provide additional security as they move Additionally, indirect fire can provide concealment, with smoke either used alone or mixed with suppressive fires.

EXECUTING THE MISSION

TANK PLATOON II

Thermal sights are your best friend and greatest advantage over enemy forces during the counter-reconnaissance mission profile. Since enemy movement will generally be limited, your best chance to detect his forces including dismounted units—will be via their heat signatures. Air assets, when available, can also be ordered to detect and engage any enemies that might be lurking in the gaps or dead space of your scouting plan. Once all the enemies sighted in your initial deployment have been eliminated, keep friendly movement to the absolute minimum necessary to reposition and cover other potential enemy positions.

If you are supported by scouts equipped with Humvees, remember how vulnerable these units are. Sometimes it is better for them simply to report enemy movement than to attempt to engage and pin it via direct fire. You can always call in indirect fire support, as long as you know where the enemy is. If you issue hold-fire orders to the scouts, you nevertheless retain the ability to order them to engage any soft targets they might encounter. This helps avoid the possibility of losing the scouts precipitously should they fire at will against a target which outclasses them. If you are a particularly cautious commander, you can also issue similar orders to Bradley- or LAV-equipped units.

LESSONS LEARNED

Most of the time, the enemy will be looking for you more actively than you are looking for him. If you are patient and let him come to you, you will generally get the opportunity to fire the first shot. Dismounted infantry units are the possible exceptions to this rule, and, as such, they are often the greatest threat to mission accomplishment. Here are the final NTC lessons to store away in your footlocker for the battles ahead:

TANK PLATOON

- Patience does not equate to timidity. It simply means being judicious about when you choose to commit your forces—but once you commit, do so with vigor.
- Regardless of the mission profile, battle-space management begins in the planning phase and doesn't end until all mission objectives have been consolidated and you are in the debriefing tent.
- The greater the number of enemy reconnaissance elements you eradicate with indirect fire and air assets, the less you reveal about friendly troop dispositions.
- Watch for enemy offensives. If the enemy has decided to attack without prior reconnaissance, you do not have the firepower to stop them. It is usually better to withdraw to your own lines than to sacrifice your force in a doomed defense.
- Lastly, the most important lesson to take away from the entire NTC curriculum: Train like you fight—and if you don't get it right the first time, do it again and again until you do.

CHAPTER 6 BATTLE BRIEFS

These battle briefs cover the single mission selections available from the Main menu. Each entry is designed to give you a basic overview of the battle, a full rundown of the friendly assets at your disposal, a basic intelligence briefing on enemy strength and disposition, and any other useful information that is available. The execution instructions lay out a general scheme of maneuver for the mission, including all phase lines. You must conform to this general guidance, but you are free to plan your deployment and tactics beyond that to suit your style of command. You are also encouraged to replay each battle several times to compare the results of various approaches. Such preparation will help you refine your tactics even further before you begin campaign play.

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There are 10 single mission scenarios to choose from, five historical and five hypothetical. The five historical engagements are from the Gulf War: 73 Easting, Wadi Al-Batin, Highway 8, Medina Ridge, and Kuwaiti Airport. The substitution of M1A2 tanks into the Gulf War scenarios is intended to let you explore the "what if" potential of these vehicles. In general, these scenarios are relatively easy, since the Iraqis have old T-72s. You should play these games with the objective of winning with fewer casualties than occurred in the actual battle.

TANK PLATOON

The five hypothetical engagements revolve around the classic showdown once expected between advance elements of NATO and the now defunct Warsaw Pact armies. These include Fulda Gap, Black Horse Cav, Into the Breach, Stick in the Eye, and They Shall Not Pass. Choose a selection, and you proceed to the appropriate briefing screen for that engagement.

73 EASTING

26 February, 1991, day G plus 2 of the ground war. Eagle Troop, 2nd Cavalry Squadron, 2nd Armored Cavalry Regiment has orders to find the Iraqi armor and pin it in place, allowing the 1st and 3rd Armored Divisions to pass through and destroy it. So much for the plan.

ENEMY FORCES

The Iraqi units involved in the battle formed the advanced-security Task Force of the 18th Brigade of the Tawakalna Republican Guards division. This force comprised over 30 T72-M1 tanks and a dozen BMP-1 infantry fighting vehicles.

FRIENDLY FORCES

Eagle Troop, 2/2 ACR, consists of a troop HQ section of M1 tanks, two M1 tank platoons, and two M3A3 Bradley CFV Sections.

SUPPORT UNITS

The part of the battle depicted in this scenario occurred so quickly that no artillery units were able to deploy to support Eagle troop.

TANK PLATOON II

Eagle Troop is to transit the given operational area and neutralize all enemy opposition encountered. Once Phase Line 70 Easting is reached, the team will halt and await further orders. Phase Lines are for orientation purposes only. Primary objective is the destruction of enemy advanced elements with minimum casualties.

EXECUTION

Your team will operate in a zone defined by the following Phase Lines: Forward advance boundary line is Phase Line 70 Easting; North and South sector boundaries are listed as 97and 00 South. Overlays and mission data downloaded to all units' IVIS.

HISTORICAL RESULT

At 1525, Eagle Troop crossed Phase Line 65 Easting. Shortly thereafter, one of the scout sections engaged some Iraqi infantry and an anti-aircraft gun in a small village. Moments after the village was cleared, the command M1 moved over a small rise and spotted the Iraqi tanks. The order was given to push through the enemy position and consolidate on the other side. Six minutes later, about 50 Iraqi vehicles were burning without a single American casualty.

WADI AL-BATIN

26 February, 1991, day G plus 2 of the ground war. C company, 1-37 Armored Regiment, 3rd Brigade, 1st Armored Division, has become the lead unit in a hasty attack against the 29th Brigade of the Tawakalna Republican Guards division. The ensuing battle saw the only loss of U.S. tanks to enemy action of the war, in a close-range battle many now call "Fright Night."

ENEMY FORCES

The Iraqi units involved in the battle represent the main defensive position of the 29th Brigade of the Tawakalna Republican Guards division, dug in near the ridge at Phase line 48 East.

FRIENDLY FORCES

You control two M1 tank platoons of C company, 1-37 Armor.

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HIGHWAY 8

26 February, 1991, day G plus 2 of the ground war. Task Force 1-18th Infantry. Attached to the 24th Infantry Division, exits the Great Dismal Bog and begins its attack to cut Highway 8. Once this is accomplished, the Iraqi units in Kuwait will be cut off from Baghdad.

ENEMY FORCES

TANK PLATOON II

The Iraqi units involved in the battle represent elements of the 49th Infantry Division and the 3rd Republican Guards Commando Regiment, with elements of the Hammurabi Republican Guards Division approaching the area.

FRIENDLY FORCES

Friendly forces in this operation will consist of your M1 tank platoon, two M113 Infantry Platoons, and an HMMWV Scout Section.

SUPPORT UNITS

Access is granted to the following artillery assets:

M109A6 155mm SPG Battery with HE

M109A6 155mm SPG Battery with DPICM

No rotary or fixed-wing aircraft assets are available for this mission.

MISSION

You are to attack the enemy units defending An-Nasiriyah, grid 271 491, and the Tallil Airfield at grid 330 481. Primary objective is to ensure that terrain objectives are clear of enemy and not under enemy fire, with minimum casualties. Destruction of enemy units is a secondary objective

EXECUTION

Your Team will operate in a zone defined by the following Phase Lines: Forward advance boundary line is Phase Line 50 North; Flank sector boundaries are listed as 27 and 33 East. Overlays and mission data downloaded to all units' IVIS.

HISTORICAL RESULT

While not one of the most famous battles of the war, this was one of the most important. Once the 24th Infantry Division cut Highway 8, the Iraqi army was trapped in the Kuwait Theater of Operations.

SUPPORT UNITS

Access is granted to the following artillery assets: M109A6 155mm SPG Battery with HE M109A6 155mm SPG Battery with DPICM

No rotary or fixed-wing aircraft assets are available.

MISSION

Delta Company is to attack the enemy units defending Phase Line 48 East. Terrain objective is for orientation purposes only. Primary objective is the destruction of enemy defending units with minimum casualties.

TANK PLATOON

EXECUTION

Your team will operate in a zone defined by the following Phase Lines: Forward advance boundary line is Phase Line 49 East; North and South sector boundaries are listed as 23 and 27 South. Overlays and mission data downloaded to all units' IVIS.

HISTORICAL RESULT

The Iraqi commander in this action was one of the most capable encountered in the war. The Iraqi armor was deployed into a reverse slope defense, which negated the Abrams' long-range advantage and turned the battle into a confused, close-range knife fight. As a result, two M1s were put out of action—the only M1s destroyed by enemy fire during the war. Even so, the design of the Abrams was decisive. Both crews escaped without fatality.



BATTLE BRIEFS

MISSION

TANK PLATOON II

Alpha Company is to attack the enemy units defending Phase Line 27 East. Terrain objective is for orientation purposes only. Primary objective is the destruction of enemy defending units with minimum casualties.

EXECUTION

Your team will operate in a zone defined by the following Phase Lines: Forward advance boundary line is Phase Line 28 East; North and South sector boundaries are listed as 05 and 08 South. Overlays and mission data downloaded to all units' IVIS. Platoon leaders update and send to subordinate units after this briefing.

HISTORICAL RESULT

The full battle of Medina ridge involved the entire 1st Armored Division against the entire Medina RG Division. This scenario is only a small part of the entire battle, the most decisive of the Gulf War. The Iraqi commander in this action attempted to deploy in a reverse slope defensive position. Unlike the commander of the Tawakalna division at Wadi-al Batin, the Medina commander made a critical mistake in his deployment. The Iraqi armor was deployed too far from the protecting ridge line. As a result, the ridge provided the American tanks with ideal hull-down positions from which to dominate the Iraqi positions.

KUWAITI AIRPORT

27 February, 1991, day G plus 3 of the ground war. The 1st Marine Division, including the 1st Marine Tank Battalion, engages an Iraqi counterattack on the approaches to the Kuwaiti International Airport.

ENEMY FORCES

Intelligence estimates you will encounter an attack by elements of the 55th Mechanized Division. The attack is expected near the division's forward command post.

FRIENDLY FORCES

Friendly forces in this operation will consist of your M1 tank platoon and an LAV platoon. You are to relieve the Division Forward TOC, defended by an LAV unit and an infantry platoon.

27 February, 1991, day G plus 3 of the ground war. Task Force 4-70th Armor, 2nd Brigade, 1st Armored Division is the left flank unit of the 1st AD. The division is approaching the known location of the Medina Republican Guards division.

ENEMY FORCES

The Iraqi units involved in the battle represent elements of the 2nd Brigade of the Medina Republican Guards division, dug in approximately two kilometers east of the ridge at Phase line 24 East.

FRIENDLY FORCES

Friendly forces in this operation will consist of two M1 tank platoons and an M2 Bradley platoon.

SUPPORT UNITS

The following aviation assets are operating in your area or are on call:

Attack Helo section (Apache)

No artillery support is available at this time.



106 MUTANK PLATOON

SUPPORT UNITS

Access is granted to the following artillery assets:

81mm Mortar Battery

The following aviation assets are operating in your area or are on call:

Attack Helo section (Cobra)

MISSION

Your force is to destroy any enemy units attacking the Division TOC located at grid 017 049. Primary objective is to defend this command center with minimum casualties, while causing maximum damage to any enemy units.

EXECUTION

Your team will operate in a zone defined by the following Phase Lines: Forward advance boundary line is Phase Line 08 North; Flank sector boundaries are listed as 00 and 06 East. Overlays and mission data downloaded to all units' IVIS. Platoon leaders update and send to subordinate units after this briefing.

HISTORICAL RESULT

The resulting close-range combat in the oil-fire-dimmed afternoon was the largest tank battle in U.S. Marine Corps history. It was also planned to be the major lraqi counter-offensive of the war. The unexpected heavy opposition the Marines put up destroyed the attack before it could gain momentum.

FULDA GAP

This is the classic non-nuclear nightmare scenario that analysts predicted would occur at the beginning of World War III. Soviet and Warsaw Pact forces attempt to breach pre-positioned NATO defenses at the Fulda Gap in a breakthrough attack. You are responsible for countering one of the battalions that comprise the larger attacking force.

ENEMY FORCES

Intelligence estimates you will encounter an attack by a reinforced Motor Rifle battalion with heavy artillery and air support probable. The attack is expected in your sector of operations.

FRIENDLY FORCES

Friendly forces in this operation will consist of your M1A2 tank platoon, an M2A3 Bradley infantry platoon, an HMMWV Anti-Tank section, and a Bradley Air Defense section.

SUPPORT UNITS

Access is granted to the following artillery assets:

81mm Mortar Battery

M109A6 155mm SPG Battery with HE

No air support is available at this time.

MISSION

Your team is to destroy any enemy units attacking in your given sector. Primary objective is the destruction of the enemy attackers with minimum casualties while preventing enemy breakthrough.

EXECUTION

Your team will operate in a zone defined by the following Phase Lines: North and South sector boundaries are listed as 70 and 74 South. Overlays and mission data downloaded to all units' IVIS. Platoon leaders update and send to subordinate units after this briefing.



BATTLE BRIEFS

MISSION

TANK PLATOON II

Your team is to engage any enemy units attacking in their given sector. elements with minimum casualties, while preventing enemy breakthrough. in your sector should be considered as a mission objective.

Battalion headquarters has issued a warning that advance friendly units might try to rejoin the main body through your operational sector. All elements should be on the alert for these units and take all precautions to avoid fratricide incidents.

EXECUTION

Your Team will operate in a zone defined by the following Phase Lines: Left and right boundary lines are shown as Phase Lines 105 and 110 East; North and South sector boundaries are listed as 24 and 29 South. Overlays and mission data downloaded to all units' IVIS. Platoon leaders update and send to subordinate units after this briefing.

INTO THE BREACH

After stopping the Warsaw Pact thrust, NATO forces go over to the attack. Your forces will spearhead the NATO counterattack. Be advised: Soviet reserves are also moving into the area of operations.

ENEMY FORCES

Intelligence estimates you will encounter an under-strength Motor Rifle battalion with heavy artillery and light air support probable. Reconnaissance assets have identified a reserve tank unit and an Air Assault unit in the enemy rear, which might be deployed in reaction to any advance.

FRIENDLY FORCES

Friendly forces in this operation will consist of your M1A2 tank platoon, an M2A3 Bradley infantry platoon, and a Bradley Air Defense section.

Primary objective is to ensure the safe withdrawal of 7th Panzer Divisions The protection of any command post, artillery, logistics, or air defense units

FRIENDLY FORCES

probable. The attack is expected in your sector of operations.

allow time for the main defensive line to form.

Friendly forces in this operation will consist of your M1A2 tank platoon, two M3A3 Bradley CFV platoons, and an M901 TOW section.

This more difficult situation places you in the position of the covering

Intelligence estimates you will encounter an attack by a reinforced tank

battalion of the 5th Guards Tank Division, with heavy artillery and air support

Armored Cavalry. Your goal is to delay and disrupt a Soviet-style attack to

TANK PLATOON

Allied units in the area include elements of the retreating 7th Panzer Division, including headquarters and artillery units.

SUPPORT UNITS

ENEMY FORCES

The following aviation assets are operating in your area or are on call:

Air Cavalry section (Kiowa/Apache) Fixed wing CAS flight (A-10) No artillery support is available at this time.



BLACK HORSE CAV

TANK PLATOON

SUPPORT UNITS

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Access is granted to the following artillery assets:

81mm Mortar Battery

M109A6 155mm SPG Battery with HE

The following aviation assets are operating in your area or are on call:

Air Cavalry section (Longbow)

MISSION

Your team is to attack the enemy units defending Objective Badger at Grid 045 330. Terrain objective is for orientation purposes only. Primary objective is the destruction of enemy defending units with minimum casualties.

EXECUTION

Your team will operate in a zone defined by the following Phase Lines: Left and right boundary lines are shown as Phase Lines 109 and 103 East; North and South sector boundaries are listed as 32 and 35 South. Overlays and mission data downloaded to all units' IVIS. Platoon leaders update and send to subordinate units after this briefing.



STICK IN THE EYE

The key to a successful defense is a successful counter-reconnaissance operation. You must prevent Soviet recon units from finding the weak point in the NATO line and identify the axis of the main attack.

ENEMY FORCES

Intelligence estimates you will encounter an under-strength Motor Rifle Company with light artillery and light air support probable. Reconnaissance assets have identified an Air Assault unit at the Podlaska airfield, grid 317 286, which might be deployed in reaction to any advance.

FRIENDLY FORCES

Friendly forces in this operation will consist of your M1A2 tank platoon, an M2A3 Bradley infantry platoon and an HMMWV Scout Section. The British 7th Armored Division reports that several battle groups have punched through the enemy lines and might be operating near your operations area.

SUPPORT UNITS

Access is granted to the following artillery assets:

81mm Mortar Batterv

The following aviation assets are operating in your area or are on call:

Fixed-wing CAS flight (A-10)

MISSION

Your team is to attack the enemy units defending Podlaska, Objective Thunder at Grid 297 266, and the Podlaska airfield, Objective Lightning at Grid 317 286. Terrain objective is for orientation purposes only. Primary objective is the destruction of enemy defending units with minimum casualties.

EXECUTION

Your team will operate in a zone defined by the following Phase Lines: Left and right boundary lines are shown as Phase Lines 27 and 33 East; North and South sector boundaries are listed as 25 and 30 South. Overlays and mission data downloaded to all units' IVIS. Platoon leaders update and send to subordinate units after this briefing.



THEY SHALL NOT PASS

Conduct a hasty occupation and defend a Battle Position (BP) after an amphibious assault on Norway. The security of the beachhead and the build-up of NATO forces on this flank depends on your success.

ENEMY FORCES

Intelligence estimates you will encounter the advance guard units of a Motor Rifle Regiment. This normally consists of possible reconnaissance platoons supported by, at maximum, a reinforced tank company, with medium to heavy artillery support and possible air support.

FRIENDLY FORCES

Friendly forces in this operation will consist of your M1A2 tank platoon, a LAV Reconnaissance Platoon, an HMMWV Anti-Tank section, and an LAV Air Defense section.

SUPPORT UNITS

Access is granted to the following artillery assets:

M109A6 155mm SPG Battery with HE

M109A6 155mm SPG Battery with DPICM

The following aviation assets are operating in your area or are on call:

Attack Helo section (Cobra) Fixed wing CAS flight (AV-8B) UAV support flight

MISSION

You are the advance guard of the 3rd Marine Expeditionary Force, recently landed in Norway. You are to advance and secure the pass, grid reference 420 570, Objective Tarawa. You are to destroy any enemy units attacking Objective Tarawa. Primary objective is to maintain Tarawa clear of enemy and not under enemy fire, with minimum casualties. Destruction of enemy units is a secondary objective. Overlays and mission data downloaded to all units' IVIS. Platoon leaders update and send to subordinate units after this briefing.



OK, now it's time for all that training to pay off. Things are heating up around the world, and the U.S. is being called on to respond to ongoing and emerging threats on many fronts. We are being spread awfully thin, gentlemen, so it is even more critical that every ounce of our combat power be used wisely. To that end, we are prebriefing all combat ready units on each theater of operation that is currently threatened. Your unit may be called up in any or all of these areas before the current crisis subsides, so be prepared.

Each briefing gives you an overview of the current or projected political situation, including the military implications and intentions when these are known. Additionally, you receive the standard background notes on the theater, including an overview of the prevailing topography in various regions, major population centers, transportation networks, and so forth. Because so much needs to be covered and time is of the essence, these overviews are relatively generic. More detailed theater briefings are preloaded in the appropriate sections of your deployment packets (see the M1 Tank Platoon II War College). Be sure to consult these sections during predeployment work-ups to ensure that you become intimate with the environment in which you will be fighting and take the necessary maintenance and training precautions while time permits.

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TANK PLATOON

Once you arrive in a theater of operations, you are given initial tasking and an overall concept of operations by the theater commander. Follow-up tasking depends on your performance in the field. If you develop offensive momentum against the enemy and resist his attempts to counterattack, chances are that you will continue that type of tasking until the conflict is resolved. This is the best-case scenario, gentlemen, because we need to resolve each crisis swiftly to be able to disengage as much combat power as we can and redeploy it elsewhere.

Conversely, if your attacks are less than decisive, you might find yourself on the defensive very rapidly. At best when this happens, you will have unnecessarily prolonged the operation. At worst, you will have jeopardized not only our approach in that theater, but potentially the global strategy as well. Need I repeat myself? A lot is at stake here, and each of you is personally responsible for doing your part to make it all happen! Now, let's get on with the briefing.

TANK PLATOON II

Saddam Hussein stages another invasion of Saudi Arabia and Kuwait, believing that world opinion has changed enough to prevent another Coalition from opposing him. While this may be true, two other things are also different. This time the Kuwaiti Army is ready for him, and they are

King Kalir Saudi Arabia Rivadh

supported by forward-deployed U.S. Security Forces.

The Iragis learned a bit from us during the Gulf War, and they appear to be concentrating their major offensive thrust south through Wadi al-Batin toward King Khalid Military City (KKMC), home to three of the four major airfields in the area, and then to Riyadh, the Saudi capital. Naturally, this means that the Iragis have already violated the 7000 square kilometer neutral zone established between the two countries in the 1975 accord. Our Arab allies are deployed to the east, in Kuwait and to counter the threat to the Saudi oil fields, which represent 26% of the world's proven petroleum reserves. The only forces in position to oppose the main attack are the Saudi 4th National Guard Brigade, which has suffered greatly in the opening round of the invasion, and your brigade, in training north of KKMC.



TOPOGRAPHY

The terrain along the Saudi Arabian border near Irag is largely composed of open, arid desert. The sand is as fine as talcum powder and will get into everything unless you take appropriate precautions. The air filtration system for intakes of the M1 Gas Turbine propulsion plant is particularly critical. Even the smallest amount of sand will erode your high-speed turbine blades in just hours of unfiltered operation. As

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7. CAMPAIGN BRIEFS

such, unless you want to spend the war doing depot-level engine changeouts, follow the maintenance schedules.

In areas where ground cover is sparse, frequent northwesterly winds also create billowing sandstorms that can blot out the horizon entirely, particularly during the summer months. Use your GPS systems and thermal sights to advantage when under low visibility conditions. The enemy does not have the same luxury. The downside of this condition is that it will strip you of close air support.

TANK PLATOON

The desert landscape is punctuated by large outcroppings of bare mountain range. Between that extreme and the open plateaus and sand dunes, you will find smaller ridge lines with scrub vegetation. Many of these features can be used as good overwatch terrain by either side.

The most significant feature of the area is the Wadi al-Batin. The wadi is a deep ravine running past KKMC and providing an excellent invasion route.

CLIMATE

The Saudi climate is characterized by extremes. During daylight hours, temperatures in excess of 100 degrees are the norm, but once the sun goes down they might drop as much as 70 or 80 degrees before daybreak. Such a differential can be devastating to troops who haven't prepared for it or who lack the proper equipment for either extreme. Since the operational tempo is expected to be high, don't wait and try to solve these types of issues in the field, when the logistical train will already be focused on higher priorities. Make sure you have what you need now.

TRANSPORTATION

TANK PLATOON III

Despite the relative wealth of the nation, the Saudi transportation infrastructure is relatively primitive in some respects. This isn't an oversight on the Saudi's part, however, as much as it is a natural outgrowth of population distribution. Most of the country is settled around the coast and near well-irrigated areas (of which there are few). Thus, there has been little need to build a large network of roads to the outlying areas. Depending on how you want to define a road, Saudi Arabia has between 74 and 150 thousand kilometers of roadway, but only about 35 thousand kilometers are paved. Rail-lift capacity is limited to barely over a thousand kilometers of track, and although Saudi sea lift capacity is respectable, it will likely not come into play, because we are doing everything to avoid a protracted conflict this time out. Saudi Arabia has 14 runways long enough to support Military Airlift Command heavy-lift assets. We expect these to be sufficient for the logistical support of this limited action. Don't put us in a position of having to reconsider that evaluation.

NORTH AFRICA

The relations between Libva and Egypt take a drastic nose dive after a failed assassination attempt on the Egyptian president is traced back to Libya. In the deteriorating situation, Egypt finds itself with most of its best troops—as part of the Arab Coalition forces-still

Libya Egyp

stationed in Saudi Arabia. This gives the Libyans a great advantage, which they try to capitalize on. The Egyptian president calls in markers dating from the Gulf War and requests U.S. troops to stop the Libyan invasion. The only force available in time is the brigade currently deployed to Egypt as part of an upcoming "Bright Star" exercise.



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The concept of operations for this theater is for U.S. forces to counter the Libyan incursion into Egypt, then carry an offensive inside the contiguous border of Libya. This decision has not been made to seek any "correction" to the current Egyptian/Libyan border, rather to ensure that subsequent peace negotiations can be made from a position of strength. Consequently, to properly prepare you for this operation, we must brief you on both Egyptian and Libyan topography, climate and infrastructure.

TANK PLATOON

TOPOGRAPHY

Egypt is the land where four major deserts converge: the Sahara and Nubian deserts to the south, the Arabian desert to the east, and the Libyan desert to the west. Over 90% of the land mass is not arable, so most of the population has naturally settled around the River Nile, which bisects the country. Most of the area outside the inhabited delta region, and excluding the mountains of the Sinai peninsula, consists of one vast desert plateau. There is little change in elevation, and finding cover and concealment can be a real problem.

Nearer the Libyan border, and continuing into Libya, the flat terrain gives way to undulating low hills, plains, plateaus, and small depressions caused by wind and water erosion over thousands of years. Covered positions are easier to come by here, particularly the closer you move to the coast. Sand and sandstorms are a problem just as in the Saudi desert, but since the soil is more coarse, you won't encounter the same equipment maintenance issues faced on the Saudi Arabian peninsula.



CLIMATE

TANK PLATOON II

During most of the year, Egypt is hot and dry. The weather is mildest near the coast, as one might expect, but most of your operations will take place farther inland. Heavy rains are common during the winter months, but again these are less of a problem in the interior than they are on the coast. Temperatures can fall below freezing during the winter, however, so make sure you are well supplied with the proper additives for your cooling and lubrication systems. Finally, in the spring there is a seasonal wind known locally as the *khamsin*, which is very similar to the *Santa Ana* winds of southern California. Reduced visibility operations will be the norm during this period.

TRANSPORTATION

The Egyptian infrastructure is fairly well developed for the size and population density of the country. Almost 5000 kilometers of rail lines are available for mobilization support, along with nearly 50,000 kilometers of improved roadway, over two-thirds of which is paved. Egyptian sea-lift capacity is impressive, with 14 Ro-Ro (roll on, roll off) heavy lift ships and over 150 other cargo- and passenger-capable transports. Currently, the country has 91 operational airfields, 11 of which can land the C-5 Galaxies of the Military Airlift Command (MAC).

Libya's logistics network is far less developed. They have not had a functioning railroad of any kind since 1965, and obviously, in light of the current situation, the one they have discussed building between Tobruk and Cairo isn't likely to happen any time soon. Further, they only have 20 thousand kilometers of roadway, less than half of which is paved. Sea-lift capability is almost nonexistent, with only 30 operational merchant ships, most of which are in severe need of modernization. Finally, although they have plenty of airports and more than twice the number of heavy lift airfields than the Egyptians have, they don't have the aircraft to use them.



It is readily apparent that the Libyans cannot sustain offensive combat operations for long without strong support from an outside source. Finding such a source will be difficult, and part of our job is to minimize the amount of time they will have to look for one. If we allow them any appreciable level of success in the early going, they just might find a backer that will complicate things considerably. To avoid that possibility, we must hit them fast and hard and not let up until we are camping in Tobruk. Then we will have done our job, and the guys with the suits and briefcases can sort everything else out on their own schedule.

FAR EAST

Large sections of army troops in the Russian Far Eastern Military District have mutinied in favor of a nationalist Siberian separatist faction. They are currently preparing to attack the ICBM and naval facilities at Vladivostok. The Russian president has no reliable units in



TANK PLATOON

range to reinforce the few loyal troops holding the bases. In an unprecedented move, the Russian president has asked for U.S. assistance in securing the bases until loyal Russian forces can reach the area. The U.S. president commits U.S. forces from Japan. "Rebel" forces have nearly encircled the bases. U.S. forces are being landed and will be forced to fight their way into the base complex and then hold until relieved by loyal Russian forces.

TOPOGRAPHY

Russia is almost twice the size of the United States, so it isn't surprising that both the geography and climate vary wildly. The region near Vladivostock, where you will be operating, borders on Peter the Great Bay and the Northern Sea of Japan. In this area, the vast tundra and coniferous forests of Siberia come almost right up to the ocean. Those of you who have operated in REFORGER training exercises in Germany will find some comparison to the terrain of northern Europe, but this region features a greater number of open basins and valleys between widely set hills than the compact topography of northern Europe. This means that overwatch positions will have lengthy fields of fire, and to maintain proper security, you must conduct proper reconnaissance during your advance.



TRANSPORTATION

TANK PLATOON III

The Russian transportation network is advanced. Because of the strategic significance of the naval base at Vladivostock during the cold war (it was home to the Soviet Pacific Fleet), a vast hub of paved roadways and rail networks converge in this area. You can expect that the rebels will be using these natural avenues of approach. Consequently, due to the nature of this relief mission, most of them will be of little tactical or strategic importance to the success of the first phase of this operation. Choose an axis of advance that takes advantage of other topographical features until you have established a defensive perimeter, after which Seventh Fleet and USAF assets stationed in Japan can conduct interdiction efforts to delay additional rebel units from moving into the area.

MOLDAVIA

Six months ago, the former Soviet republic of Moldavia petitioned to rejoin Romania. After two months of near civil war and the deployment of a combined Russian/NATO peacekeeping force, the situation remains tense. Two weeks ago, in a surprise move, the Russian contingent



Subarctic air keeps this region well

withdrew from the UN force, reducing the force by over half and paving the way for the Ukraine to prevent this merger by force. The invasion is to be met by the remaining NATO contingent, which must hold on long enough for additional NATO troops located in Germany and Poland to arrive.
TOPOGRAPHY

Although part of the vast European plain, Moldavia is dominated by the Carpathian mountain range. Numerous rivers, ravines and gorges intersect the landscape.

The northern area of Moldavia in which you will be operating is characterized by heavily broken terrain that naturally favors the attacker. Cover and concealment exists in abundance, and it is easy to find good defensive positions, but much more difficult to predict an attacker's axis of advance. As such, you must be able to flexibly respond to a very fluid tactical situation to avoid being flanked.



CLIMATE

The Moldavian climate is more temperate than that in most of the other theaters of operation we are briefing you on. Average temperatures and rainfall vary slightly from the northern to southern border, but conditions approximate those of the U.S. central eastern seaboard (from North Carolina

TANK PLATOON

to Maryland). Fog and humidity may produce occasional conditions of reduced visibility, but, as a rule, neither offensive nor defensive operations will be hindered by the weather.

TRANSPORTATION

The contested area has adequate road and rail networks, which can be used for transport and logistical support by whomever controls them. The routes through the Carpathian mountain range are natural choke points, which could easily be blocked should the strategic situation warrant such a move. 7. CAMPAIGN BRIEFS

WORLD WAR III REVISITED

TANK PLATOON II

A new hard-line ultranationalist government has taken power in Moscow. They immediately start rebuilding the army to its Cold War levels. Their first priority is the reformation of the Soviet Union. In the meantime, Poland and several other ex-Warsaw Pact nations have joined NATO as



either members or associates. A new Iron Curtain rises on the border of the new Soviet Union. In an attempt to regain its lost buffer zone, the revitalized Red Army attacks into Eastern Europe, starting the dreaded East-West war just several hundred miles east of the old border.

TOPOGRAPHY

Many historians point to the superiority of *blitzkreig*—lightning warfare tactics as the major contributing factor in the Wermacht's rapid conquest of Poland during the Second World War. Certainly, Guederian's tactics were impressive, but to ignore the impact of Polish geography criminally inflates the importance of those tactics. Poland has almost no geographical barriers near its borders, and therefore the country has always been a ripe target for invasion.

The northern and central portions of Poland are relatively flat. Although they are broken by a series of small rivers and other bodies of water, none of these are natural obstacles to a rapid advance. In the south, the land slopes gradually toward the Sudenten and Carpathian mountain ranges, but, again, remains flat enough to support rapid movement. Fairly extensive forests once broke up the otherwise unspectacular terrain, but logging, air pollution, and acid rain from unregulated factory emissions have taken their toll over the last 50 years. Since decisive terrain features will be hard to find, you will need to be creative to find good cover and concealment, and you should use artillery liberally when assets allow. However, it will also be relatively easy to catch large Russian formations on the move in the open. When you find yourself presented with one of these opportunities, make the most of it.

CLIMATE

The Polish winter can be very cold, even subarctic when low pressure air masses draw winds down out of the north. Easterly winds can drop the wind-chill factor 20 to 40 degrees below the prevailing temperatures, so make sure you take every precaution to protect both your troops and your equipment. During the summer months, heavy thunderstorms are very common, and the ground can become saturated quickly, degrading offroad mobility.



TRANSPORTATION

The Polish transportation network is fairly extensive for a nation of its size, primarily due to the relatively strong industrial base. The rail system has over 25 thousand kilometers of usable track, many spurs of which are connected to major port facilities at Gdansk, Warsaw, and other coastal cities. Most of NATO's second echelon forces will be arriving via these facilities. Poland also has 367

TANK PLATOON

thousand kilometers of roadway, more than two-thirds of which has been paved and improved for heavy transport. Only two airfields are currently capable of accepting C-5 Galaxy aircraft, but engineers are hastily improving other facilities to correct this shortfall. While these and other improvements are taking place, your units must help buy us time. We know that you won't turn this bear around in a day, but if you hurt him every time you meet him, he just might slow down. That could be enough to let us build up the strength to tame him once and for all. Modern tank cannons are developing into a standard smooth bore, high velocity, gun firing sabotted rounds. The noted exception is the British, who still use rifled cannons. Rifled cannon provide better accuracy at long range, but they have a shorter barrel life and require more complex rounds. The sabot allows a cannon to fire sub-caliber rounds at higher velocities, with the sabot being discarded as the round leaves the barrel. Sabot rounds fired from a rifled cannon require the addition of a free-rotating driving band, increasing both the cost of manufacture and the failure rate of the round. Anti-tank ammunition uses either kinetic energy projectiles or shaped-charge warheads, while the near future will see the introduction of the first "smart" cannon rounds. For additional details on all of these rounds, consult the applicable section of the M1 Tank Platoon II War College on the CD-ROM.



MAIN GUN ORDNANCE



APFSDS



Armor-Piercing, Fin-Stabilized, Discarding-Sabot ammunition is the standard kinetic energy round used by most tanks. This round consists of a long rod penetrator, which uses fins to stabilize it in flight. The rod is made of a hard, dense material—either tungsten or depleted uranium. This type of round penetrates armor by causing severe hydrodynamic stress and ductile failure of the armor. Once the round penetrates, the interior of the vehicle is destroyed by high velocity fragments. Depleted uranium rounds cause additional damage due to their pyrophagic qualities. During and after penetration, flakes of the material ignite, causing anything flammable to burn. This includes the ready round in the autoloaders of most Russian designed tanks, causing the vehicle's fuel and ammunition to detonate.

HEAT



High-Explosive, Anti-Tank rounds are the main alternative to the kinetic rod. HEAT rounds use the shaped-charge principle to penetrate armor. The warhead consists of a high-explosive filling formed around a conical metal liner. The nose of the shell is hollow and designed to detonate at the proper stand-off distance, in order to focus the maximum force against the armor. When the shell strikes the target, the explosive detonates from the rear, releasing a tremendous pressure wave. This wave crushes the liner in on itself, creating a high velocity jet of metal along the axis of the cone. About 20% of the metal forms the jet, with a velocity of eight or nine thousand meters per second. The remainder forms the slower speed plug. Armor penetration is achieved solely by the vast kinetic energy at the tip of the jet. The main damage caused by the HEAT round is the result of both the jet and the armor spall created by the warhead.

MPAT

TANK PLATOON II



Multi-Purpose, Anti-Tank rounds are a variation of the standard HEAT round. While retaining a shaped-charge warhead, they increase the fragmentation effects of the round at the expense of the round's overall penetration. The new MPAT round has a dual-mode fuse, which is set at the time of loading. The ground mode employs standard impact fuses, while the air mode uses a proximity setting. The MPAT round is designed for use against softer vehicle targets, infantry, and (in air mode) against helicopters.



STAFF



Smart, Target-Activated, Fire and Forget (or STAFF) rounds are the first generation of "smart" warheads for tank cannon. The round uses an Explosively Formed Penetrator, sometimes called a self-forging warhead. This is basically a shaped-charge warhead with a greater standoff distance. The STAFF round has a radar seeker that scans the shell's line of flight, looking for a target. The seeker is smart enough to discriminate targets from battlefield clutter and counter measures. Once it finds a target, the shell rolls its warhead into alignment with the target and fires, its self-forging warhead. The shell hits the center of target, with impact from the top. This top attack capability allows the round to attack both partially and fully hidden targets.

CHAPTER 9 MISSILES

The anti-tank guided missile is the successor to the anti-tank gun and bazooka of the Second World War. All ATGMs consist of a shaped-charge warhead, a propulsion system, and a guidance system. They usually can deliver their warhead with extreme accuracy from several kilometers away. After the 1973 Arab-Israeli war, the anti-tank guided missile was seen by some as the ultimate answer to the tank. Additional analysis and experience over the last 25 years has produced a more balanced view. In hindsight, it appears that the ATGM has become just another player in the ongoing competition between lethality and protection. To learn more about ATGMs and their associated guidance systems, consult the appropriate section of the **M1 Tank Platoon II War College** on the CD-ROM.

TANK PLATOON

WIRE GUIDANCE

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The oldest guidance system is optical wire guidance, still used on the U.S. TOW2 missile. In this system the missile trails a fine wire which links it to the operator. The operator holds an optical or thermal sight on the target. The guidance system compares the missile's current position with the aim point, using a flare on the back of the missile, and sends course corrections through the wire, guiding the missile to the target.

LASER GUIDANCE



In many systems, wire guidance has been superseded by laser guidance. This system functions just like that used for laser guided bombs. The controller "paints" the target with a laser using an encoded signal. The missile has a seeker head that guides the missile to the painted target. This system has many advantages over wire guidance. The firing unit does not have to be the laser source, it is not as susceptible to counter-measures like Dazzlers, and it eliminates the limitations of a guidance wire. All Russian gun-launched missiles and most helicopter-launched missiles are now laser guided.

IR GUIDANCE



The newest guidance system is the infrared fire-and-forget system. This type of guidance is based on the same principle as the infrared air-to-air missiles that have been in service for decades. The new systems are sensitive enough to see each vehicle as a unique thermal signature. The operator locks the missile on to a specific thermal image, fires the missile, and can leave. The missile guides itself to the locked image without any external control input. It is a true fire-and-forget system. The only example currently in service is the U.S. Javelin system.



TANDEM WARHEAD



Tandem warheads were designed to defeat targets equipped with early reactive armor. The missile contains two separate shaped-charge warheads, arranged in tandem (hence the name). The first charge detonates on impact and sets off the reactive armor, which disrupts the jet of the first charge. The second charge detonates a few microseconds later, so that its jet hits the target's armor after the reactive armor charge has dissipated.

TOP ATTACK



Top attack warheads are another attempt to defeat reactive and composite armors. These warheads work on the theory that the top armor of almost all armored vehicles offers the least protection. There are two main methods of top attack. The simplest is for the missile to dive on the target from above. As simple as this sounds, it can only be accomplished by fireand-forget missiles, fiber-optic guidance, and helicopter-launched laserguided missiles.

The second method of top attack is to use a downward-facing warhead, usually an Explosively Formed Penetrator, sometimes called a self-forging warhead. This is the method used by most advanced ground-launched missiles equipped with wire or laser guidance. It requires the missile to fly just over the target, and a sensor in the missile triggers the warhead at the correct moment.



When you look at the history of armor development, bigger and thicker is not always better. Tank design must take many factors into account beyond offensive firepower and defensive staying power. The most obvious considerations that directly impact armor configurations are weight and mobility. The introduction of shaped-charge warheads forced designers to consider alternative materials for armor. Some of these were more lightweight than rolled steel but, when combined and layered with steel, had higher penetration resistance than all-steel plates of even 1.5 times the thickness. As offensive weaponry becomes more deadly, defensive systems will evolve to counter them, keeping the defense procurement dance very much alive and well. In the headings that follow, you are given a very brief overview of the current state of armor and non-armor-based defensive systems. For additional detail, consult the appropriate section of the M1 Tank Platoon II War College on the accompanying CD-ROM.



CHOBHAM COMPOSITE ARMOR



Originally known as "Burlington," this compound armor system (developed by the Royal Army R&D establishment near Chobham, England) is better know as "Chobham" armor. While the actual construction of this armor is highly classified, some general details are known. Chobham armor consists of a series of different materials, including ceramics, plastics, and alloys. The different layers are set at odd angles to each other in a series of baffles. The result deflects the penetrating rod or shaped-charge jet at various angles, reducing its penetration ability and breaking up the round. Thick sections of standard armor provide protection from smaller-caliber impacts. As technology advances, the mix of the armor can be changed on the vehicle, avoiding major remanufacture expenses. Recent U.S. advances have resulted in the inclusion of a layer of woven depleted uranium encased in steel. This provides even greater protection from armor piercing rounds.

REACTIVE ARMOR



Reactive armor is another attempt to protect tanks from shaped-charge warheads. It consists of a series of steel boxes containing explosives, bolted to the outside of the tank. When a box is hit by a shaped-charge warhead, the box detonates. This pushes the metal plate into the forming jet and disrupts it before it can penetrate the armor. The introduction of tandem warhead missiles has resulted in a new generation of reactive armor. This type uses a larger box that incorporates a second rear plate. As the box detonates, the outer plate disrupts the first warhead jet. The rear plate bounces off the vehicle and then is in place to disrupt the main warhead. In addition, this double-plate system has a significant chance to break a long-rod penetrator, providing protection from both armor-piercing and HEAT rounds.



10. ARMOR

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NON-ARMOR DEFENSIVE SYSTEMS (SHTORA, ARENA)

The former Soviet Union developed two very unique defensive systems, both designed to reduce the effectiveness of anti-tank, guided missiles. The first is called "Shtora." It consists of one or two thermal dazzlers mounted on the turret roof, or on either side of the main gun. These dazzlers mimic the guidance flares in the rear of wire-guided missiles. They are designed to fool the missile guidance into giving incorrect signals to the missiles, sending them out of control. The second system is still in development and is called "Arena." It consist of phased-array radar and a series of small charges. As the radar detects an incoming missile, one of the facing charges is launched into the air. It acts, essentially, as a large shotgun shell that shoots down the incoming missile. How effective the system is remains unknown. FM 100-5 has been the bible of the Army's war-fighting doctrine since it was first distributed in the early 1970s. This document has undergone a number of revisions over several administrations, and it's more of a work in progress than canonized dogma. Troops in the field are expected to live and die by the concepts of the current edition. Before delving into those concepts, we must give some attention to the tactical thought that preceded them. Only then can you fully appreciate how the current doctrine has evolved and why it represents the most effective use of available resources on a battlefield that has become increasingly deadly.



U.S. ARMY TACTICAL DOCTRINE

GENERAL DEPUY

When the first edition of FM 100-5 was published, General Depuy was the Commander of TRADOC, the Army training command headquarters. The doctrine promulgated in this volume was that of "Active Defense." Faced with overwhelming Soviet numerical superiority in the European theater of operations and the never-far-from-immediate threat of a Soviet attack through the Fulda Gap, Depuy endorsed a doctrine which drew heavily on Carl Von Clausewitz's principles of war, as well as the German experience during World War II.

Active defense relied on firepower attrition and using the minimum force structure necessary to stall the threat until reinforcements could be brought to bear. To achieve this economy of force, *defending forces* would have to achieve the element of surprise, inflict maximum damage on the enemy, and also carefully husband their very limited combat power.

Since Western forces were so grossly outnumbered on the border, the principal of economy of force was at least partly motivated by political factors. Additional divisions were unavailable for deployment to Europe, first due to U.S. commitments in Vietnam, and subsequently because of the extensive reduction in forces that occurred immediately after that conflict. Any other approach would have been nothing more than a paper tiger, without teeth. Even so, as you might have guessed, the teeth in Active Defense weren't particularly long or sharp.

Lt. General Don Starry was in command of the forces at the line in the Fulda Gap during Depuy's tenure at TRADOC, and he was an avid and active opponent of Fm 100-5's doctrine statement. Starry believed it to be more hype than help in the accomplishment of his very difficult mission. In 1977, he was given the opportunity to "put up or shut up," when he succeeded Depuy as the Commanding Officer of TRADOC.

GENERAL STARRY

TANK PLATOON II

At the head of a good staff of professional junior officers, Starry developed the first draft of the Air-Land Battle Doctrine (ALBD). The success or failure of this edition of the ALBD hinged on four key principles: depth, agility, initiative, and synchronization.

Depth is achieved via accurate and timely intelligence collection and dissemination to combat forces which, in turn, could interdict enemy reserves and second and third echelon troops before they could reach the front. In a perfect world, these interdiction operations would also strip firstechelon enemy formations of the logistic and combat service support they need to maintain the tempo of offensive operations.

Mobility is a contributing factor to agility, as defined in this version of the ALBD, but 'flexibility' is a more precise word for the concept Starry was trying to convey. Individual unit commanders must not only be able to react more quickly than their counterparts on the other side, but also do so in a coherent fashion that fits the tactical situation. All of the contingency plans, Battle Drills, Formation Drills, and Actions on Contact that remain in use today evolved from the principle of agility. Further, the fact that we have developed and trained with these tactical drills and systems to the point that they have become almost reflexive supports the third principle of ALBD as well.

Initiative at the lowest possible level of the chain of command has remained the greatest difference between the American serviceman and his counterparts abroad. At the time Starry and his staff authored the ALBD, they also realized quite well that the Soviet soldier took almost no initiative without guidance from fairly high up in the chain of command. This was a weakness that ALBD was designed to exploit. ALBD elaborated beyond the obvious, however. In its context, initiative also meant "offensive spirit, boldness, audacity and the propensity to take risks in the heat of battle." There certainly weren't many risk takers on the other side, so why not foster a little "he who does not risk will not win" mentality among our troops? The tactical philosophy of initiative was to gain contact with the enemy and relentlessly maintain that contact. The idea was to never allow him the opportunity to regroup and regain a clear picture of the battlefield. This not only allows small, determined forces to appear stronger than they really are, but it also has a tremendously negative psychological affect on the enemy, who is pounded day and night.

The final principle, that of synchronization, is really an evolution of the combined-arms concept. When most people think of combined arms, they don't go beyond the common and very basic understanding of it. Artillery and air bombardment softens up the battlefield prior to a ground assault with tanks and infantry. Synchronization is a much more sophisticated concept than that, involving all of the combat and non-combat force multipliers at a commander's disposal.

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Non-combat force multipliers include electronic warfare, psychological operations, combat engineering, operational deception, and the element of surprise, among others. Each of these multipliers has its proper place in the sequence of engagement, from the planning phase through movement, combat, and consolidation after the mission is over. All of the combat arms and support services have their individual roles to fill in the sequence of engagement, and these differ from one type of unit to the next.

Synchronization is the commander's ability to blend all of these diverse elements into a cohesive whole, such that they support the battle plan in the proper time and sequence to achieve a decisive affect. Perhaps the best analogy is to think of the battlefield commander as an orchestra leader, building woodwinds, brass, string, and percussion sections to a rousing crescendo that the audience cannot resist. All of these individual assets are used to maximum effect when synchronization is achieved, and therefore, friendly casualties are minimized and economy of force is achieved. The following brief excerpt about Major General Griffith's 1st Armored Division, a quote from Brig. Gen. Robert H. Scales, Jr., taken from *Certain Victory: The U.S. Army in the Gulf War*, illustrates the principle of synchronization, as well as that of depth, extremely well.

"The fight around Al-Busayyah was little more than a skirmish, but it was first blood for the Division. First, the fight confirmed, if only on a small scale, the superiority of Griffith's tactic of simultaneous attack in depth. To his front, Griffith created a carpet of combat power that stretched twentyfour hours and nearly a hundred kilometers ahead of his lead maneuver elements. At the greatest distance, Apache aircraft struck with Company sized attacks as far as fifty to sixty kilometers forward of the advancing tanks. At thirty kilometers, MLRS's began to inundate targets uncovered but as yet undestroyed by air attack. Once within direct observation of scout helicopters and forward observers, cannon artillery joined in the crescendo of firepower. Only after these four successive waves washed over the Iraqi defenses did Griffith carefully maneuver to achieve overwhelming tactical superiority and finish the fight with direct fire."

GENERAL OTIS

TANK PLATOON III

General Starry may have developed the original ALBD concept, but it had undergone additional revisions before being implemented in the preceding example from the Gulf War. General Otis, Starry's successor at TRADOC, was the guiding force behind a 1982 revision that developed the concept of "Operational Level Warfare." Traditionally, military thought resided in one of two camps, strategic or tactical. The former can be further divided into "Grand Strategic," which involves the movement of entire armies in support of political policy, and "Strategic," which focuses on the movement and employment of corps and divisions within those armies. Tactical thought lies at the other end of the spectrum, dealing with company, platoon, and squad fire and movement plans in response to specific battlefield situations. In other words, grand strategy conceived the Normandy invasion during World War II, strategy was used to assign beaches and landing zones to the various units which participated in that operation, and tactics were employed by those units to overcome the obstacles they encountered once they arrived onshore.

General Otis recognized that this traditional division left a very broad area of military operations undefined, specifically the planning and coordination of regimental and battalion staffs, which is the natural interface between strategy and tactics. Some of the functions these staffs performed fell neatly into strategy, others cleanly into tactics, but far more of them involved blending both schools of thought. As such, Otis rightfully believed that a new level of military philosophy needed to be defined and studied. Under his guidance, the 1982 revision of FM 100-5 established the concept of *Operational Level Warfare.* Unlike Depuy's original approach of "Active Defense," the Operational Level Warfare concept was immediately embraced as doctrine by subordinate units, because, in essence, it simply canonized what they were already doing. The battle was far from over, however, and one of the most sacred cows of the military bureaucracy still had to be slain before ALBD would mature to its current stage of development.

TANK PLATOON

THE IMPORTANCE OF BEING "PURPLE"

For Operational Level Warfare to succeed, virtually all of the well constructed, carefully nurtured barriers that existed between the various components of the armed forces (Army, Navy, Air Force, and Marines) had to be torn down brick by brick. This was not an insignificant task. Anyone who thinks that inter-service rivalries are embodied only in sporting events like the Army-Navy football game has been living under a rock. In peacetime, the various services duke it out for the limited funding that each considers essential to equip, train, and maintain their ability to accomplish their mission in peace and war. In wartime, the stakes go even higher, and when things go wrong, fingers tend to get pointed across service boundaries far too frequently. That was the norm in the early 1980s, and it was built on at least 40 years of institutional momentum. Nevertheless, proper implementation of the revised ALBD meant that the Army had to count on the Air Force to conduct deep interdiction, for example, and both had to be able to coordinate their efforts at the operational level to achieve the aforementioned concept of synchronization. In other words, generals and admirals would no longer have the sole privilege of carving up battlefield responsibilities (after which each service would handle their share of the load relatively autonomously). The Joint Operations concept begins with just such a meeting, but it doesn't end there. Once the concept of an operation has been approved at the higher level, operational level commanders and their staffs, many of which now contain representatives from the other branches of service, must coordinate the execution of that plan at all levels as if inter-service boundaries do not exist. "Purple Ops" became the slang for Joint Operations between the various armed forces, after some wiseacre determined that blending all of the various uniform colors together would produce the color purple.

TANK PLATOON II

Initial resistance to Joint Operations was squashed after the failed Iranian hostage rescue attempt illustrated that interoperability issues between the services needed to be resolved. Decades of independent research and development programs, service-specific doctrine statements, segregated support functions that wasted funding, and provincial attitudes had created a balanced force of four elements, each of which was fairly good at performing its assigned mission, but-with the possible exception of the Navy-Marine Corps team—was lousy at supporting the missions of the others. Communications frequencies and protocol varied from one service to the next, logistical planning and support functions weren't standardized, intelligence gathering assets weren't shared, and the list goes on and on. Many of these issues are still being refined, but the important thing to understand is that had this renaissance in military thought not begun between 1982 and 1986, the conduct of the Gulf War would have been entirely different. Granted, the outcome would have probably been the same, but both the duration and the cost of that conflict would likely have been much higher.

11. U.S. ARMY TACTICAL DOCTRINE

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TODAY'S AIR-LAND BATTLE DOCTRINE

The current iteration of the ALBD relies on Joint Operations as an integral component and has incorporated a number of other lessons learned from recent operations. For example, when friendly casualties must be kept to a minimum, as is almost always the political reality of modern warfare, operations must be conducted swiftly and with overwhelming force. Night operations, though difficult to coordinate and execute, also contribute to this secondary goal. When collateral damage and civilian casualties are potential pitfalls to the conceived operations, precision-guided munitions can simplify the commander's task. Each of these lessons refine our ability to conduct ALBD, but their impact is more evolutionary than revolutionary. The heart of the concept remains the same.

ALBD stresses becoming "proactive," rather than reactive, as soon as the opportunity permits. Do not allow the enemy to dictate the tempo of operations. Use the concepts of depth, agility, initiative, and synchronization to break up the first wave of any enemy attack, then move from a defensive to an offensive posture. Use air strikes, artillery, special operations units, cruise missiles, and other non-combat force multipliers to confuse, delay, and even break succeeding waves of enemy troops moving into the theater of operations. While this state of disorganization exists, exploit it with the synchronized application of *joint* firepower assets. These include rotary and fixed-wing attack aircraft, MLRS, naval gunfire and artillery (indirect fire), and optimal employment of fast, mechanized forces to achieve decisive effect on the ground to seize and hold territory which supports the objective of the operation.

11. U.S. ARMY TACTICAL DOCTRINE

YOUR ROLE IN ALBD

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As an *M1 Tank Platoon II* commander, you support the execution of ALBD at the tip of the spear. To do so, you must understand the intent of your superiors, as conveyed in the Warning Order and Briefing you receive before each scenario. You must also understand your purpose within that intent. Simply stated, you must always think of the mission first, again when the rounds start to fly, and when all else fails, remember the mission. The most common mistake that junior officers make is to give their attention to the plan, not the mission. Plans rarely survive the friction of initial contact with the enemy, and the inability to modify them on the fly in the face of fluid circumstances is deadly. To understand the difference between the battle plan and the mission objective, consider the following example.

Bravo platoon has been ordered to depart phase line Alpha at 0600 and move to checkpoint Charlie as the jumping off point for a deliberate attack on a suspected enemy defensive position on a ridge line 3000 meters east of the checkpoint, code named Delta. Bravo is to conduct a hasty occupation of the ridge line by 0630, establish a defensive battle position, and assume overwatch duties for a friendly supply convoy that must transit the sector at 0630 to support other units.



This is the plan, but what is the commander's intent? Is it to occupy the ridge line by 0630 or to neutralize any enemy threats in the area before 0630 such that the friendly convoy can pass unmolested? Ideally, you want to do both, but the actual tactical situation you encounter may handicap your ability to do so. Your intelligence might be faulty, the enemy could be deployed somewhere else entirely—on dominant terrain other than ridge line Delta—forcing you to alter your battle plan once you arrive at the Checkpoint. Reorient to attack and take that terrain, and perform your overwatch duties from there if you don't have time to move to Delta.

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Consider another situation in which very light forces—RPG equipped troops, for example—are dug in between checkpoint Charlie and ridgeline Delta, but the high priority threat, entrenched T-72s in hull down fighting positions, are on the ridge. You must concentrate on the T-72s as the highest priority threat and, in a hasty attack without additional tasking, you might even bypass the RPG troops altogether, leaving them to be mopped up later. Since you have the secondary responsibility of protecting the otherwise lightly defended supply convoy, you cannot bypass these skirmishers and must find a way to deal with them *and* the enemy tanks. Perhaps you call in artillery on the dismounted RPG troops while you focus your direct fire attack on the tanks, or perhaps you call in smoke to minimize the enemy tank threat long enough to deal with the infantry first. Whatever approach you choose, the point is that you must demonstrate all of the aforementioned key principles of ALBD in tactical execution down to the lowest possible level of the chain of command.

The other point of these illustrations is that the inexperienced commander will often focus on secondary objectives, such as the occupation of ridge line Delta by 0630 come hell or high water, to the detriment of the commander's intent as portrayed in the mission statement. In this case, the commander's intent and the purpose of the platoon were one and the same—to secure the area before the convoy arrived.

Experience may make the difference in understanding what you need to do, but situational awareness is the trait that helps you do it both well and consistently. Situational awareness is far more than just being alert and aware of the enemy's presence. It can also be thought of as keeping the "big picture" of the engagement in your head in three dimensions. If you can't do this, you won't be able to make the best tactical choices in each situation.

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Some aspects of situational awareness can't be taught. The simple fact is that some people have trouble visualizing spatially in three dimensions. Remember those tests in which you are shown a shape laid flat on a table with dotted lines to show where the folds go, and then you must select what the shape will look like once it's folded? Those tests evaluate spatial ability, and people who have trouble thinking that way simply aren't well suited to think of terrain features tactically, or to rapidly evaluate both the threat of new targets and the ability to engage them, based on armor facing, intervening terrain, and other factors.

However, most of the rest of the factors that comprise good situational awareness can be taught. In fact, the biggest task you face is simply to become disciplined and habitual in using them. Take observational discipline, for instance. Good tank commanders and gunners keep their heads moving at all times, scanning both the ground and the air for the presence of the enemy. Cycle through your views routinely, shifting back and forth between levels of magnification, normal, and thermal views as you do. Don't get locked into tunnel vision with your eyes glued to the gunsight at maximum magnification all the time; you will miss the enemy that kills you. Use your vision blocks and even open the tank hatch (when the situation permits) to get a broader view of your surroundings. And don't forget that the IVIS, however wonderful it may be for keeping the big picture, isn't infallible. Targets don't appear on there before they are discovered through some other form of observation. So be proactive in finding new targets instead of simply reacting once they appear on your screen. Learning to detect the enemy as early in the engagement as possible is only the first step, though. Next, you must learn how to evaluate your observations.

The reason you need to place all of this information in context and keep a 3-D picture of how all of the various units are positioned in relation to one another is so that you can properly prioritize the threats. Each enemy contact you hold must be evaluated as a threat to mission accomplishment—your purpose in the commander's intent—based on two criteria: potency and immediacy. Potent threats are those enemy units which have the capability to prevent the accomplishment of your mission. Immediate threats are those which can damage friendly forces but have a low probability of impacting the mission. There are degrees within each grouping (see the **NTC Tutorial** section for additional guidance), and you, as the commander, must prioritize the engagement queue according to these degrees.

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SUMMARY

The Air-Land Battle Doctrine is a proven concept that will continue to undergo additional refinements as the years pass and new weapons systems are developed, but the core of the doctrine should remain very recognizable into the second decade of the next millennium, and perhaps even beyond that. For additional detail on ALBD, see the **U.S. Army Doctrine** section of the **M1 Tank Platoon War College** on the CD-ROM.

You know yourself, but you don't know your enemy as well as yourself. That's the next step on the road to victory and the subject of the section which immediately follows this one: **OPFOR Combat Doctrine**.



One of the natural outgrowths of the bipolar nature of the Cold War was that after it was over, almost any opponent the U.S. could face has either been trained in Soviet Combat Doctrine or in ours. The latter isn't outside the realm of possibility, but the probability of it happening is relatively low. Since we know our own doctrine intimately, it's time to gain a similar level of familiarity with that of the enemy—which will be referred to (somewhat generically) as OPFOR (OPposing FORce) doctrine. At its core, OPFOR doctrine is built, like U.S. doctrine, on several key principles of war-fighting. You have already learned that *Initiative, Agility, Depth.* and *Synchronization* are the guiding principles of U.S. Air Land Battle Doctrine. OPFOR doctrine calls out a slightly more complicated list:

TANK PLATOON

🖌 Speed

🖋 Mass

Surprise

Shock

Conformity

Coordination

Y Offensive Orientation

Preservation of Effectiveness

Speed addresses the maintenance of a high tempo of operations. OPFOR forces are expected to maintain day and night effectiveness for up to a month of sustained combat operations. *Mass* involves the concentration of sufficient force at the point of contact with the enemy to overwhelm even a well prepared opponent. There is a Russian proverb that "Quantity has a Quality all its own." *Surprise* should be achieved whenever possible, as it is a highly prized force multiplier than minimizes both the enemy's reaction time and your own casualty figures. *Shock*, although called out as a principle in its own right, is really the combined affect of the first three principles when properly applied. The objective is to send an enemy reeling in retreat, or even a full-blown rout if possible.

Conformity has to do with adhering strictly to the objective. This should be viewed in the same context as the discussion of the commander's intent and the unit's purpose within that intent, as presented in the previous section. There are fundamental weaknesses in this OPFOR principle that do not exist in the Western counterpart. However, these are mostly related to the rigidity of OPFOR command and control. The U.S. chain of command delegates authority (concurrent with responsibility) to the lowest possible level. As such, U.S. battlefield commanders are empowered to change "the plan" should the tactical situation dictate that necessity, provided that they still accomplish the mission. Their OPFOR counterparts do not enjoy a similar measure of trust from their superiors. Thus, once an OPFOR battle plan is in motion, it develops a great deal of inertia in a fairly predictable direction. Further, that plan won't be modified without intervention from the top—by some staff officer far from the front who is trying to sort through hundreds of battle reports in something approximating real time. Sever this line of communication (cut off the head if you will) and the body will continue walking along blindly. No one understands the tactical situation better than the man in the trench, and because it stresses Conformity over ALBD's concepts of Initiative and Agility, OPFOR doctrine is inherently weaker.

TANK PLATOON II

The principle of *Coordination* is the OPFOR equivalent of the combined arms concept. If you will remember from the previous section, this is slightly less sophisticated than ALBD's concept of synchronization. Although OPFOR units may achieve synchronization in an initial assault, subsequent phases of the operation have greater difficulty, because information must flow up the chain of command and down a different branch to a supporting unit, rather than traveling laterally at the lowest possible level to minimize response time. Artillery support is an exception to this rule. OPFOR units regularly train in indirect calls for fire and spotting. Further, dedicated communications nets exist for these assets. Consequently, you will find OPFOR artillery to be one of the greatest threats you encounter.



The principle of *Offensive Orientation* concerns the maintenance of an offensive spirit, even while conducting defensive operations. Attrition also lies under the surface of this principle. The Russian historical experience has been that you can trade space and time for bodies. They did so with the best units that both Napoleon and Hitler had to offer. Therefore, even while in withdrawal, OPFOR units strive to inflict maximum attrition on their pursuers.

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The final principle, that of *Preservation of Effectiveness*, involves efforts to keep morale high despite the high tempo of operations, maintain unit integrity throughout contact with the enemy, and preserve effective command, control, communications, and intelligence (C3I) despite the enemy's attempts to disrupt these functions. Again, these are weak areas that ALBD seeks to exploit at every turn.

Beyond these guiding principles, the major difference you will notice between ALBD and OPFOR doctrine is that the former is equally applicable to offensive and defensive operations, while the latter clearly discerns between the two at almost every level of command. Consequently, we will organize the remainder of our exploration of OPFOR doctrine as they do, into two distinct sections—offensive and defensive operations.

OFFENSIVE OPERATIONS

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OPFOR doctrine recognizes three basic forms of offensive operation: meeting engagements, breakthrough attacks, and pursuits. Meeting engagements are defined as encounters with the enemy in which both forces begin the engagement on the move. Movement to Contact is the Western counterpart of this mission profile. Breakthrough attacks are the equivalent of the Western Deliberate Attack. The objective is to confront and overwhelm a well entrenched defender, so that follow-up units can exploit the breach created by the attack and carry the offensive into the enemy's rear area. Pursuits are attacks against an enemy that is attempting to withdraw and regroup his forces. Regardless of which type of offensive operation is being conducted, however, OPFOR units will employ very similar schemes of movement while traveling—schemes that you can exploit to advantage. The size of the attacking unit influences the frontage of his formation, but not the formation itself. OPFOR units will travel in parallel column formation to maximize their speed of advance (30–40 km/hr in daylight and 20–30 km/hr at night or during low visibility conditions) until contact with the enemy is made or seems imminent. Individual vehicle spacing varies between 15 and 50 meters on improved roads (which OPFOR units will use whenever they are available) and 50 to 100 meters for offroad travel.

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Each such formation is preceded by an advance guard of as much as onethird of the combat strength of the formation it is screening for. This guard travels in similar alignment, 10 to 15 km ahead of the main body. Flanking and rear guard units might also be present in battalion and regimental sized formations. Theoretically, the advance guard is supposed to shield the main body, which is still in column formation, from direct attack. They are to accomplish this by locating and fixing enemy forces while the main body shifts formations and moves to add its combat power to the line. In practice, however, the speed of modern combat is such that determined aggressors in a Move to Contact mission can sometimes interject themselves between the advance guard and the main body before either become aware of it. In this scenario, the proper application of direct and indirect fires can have a devastating affect on vehicles that are so closely spaced.

Once the OPFOR formation reaches its deployment line (or makes contact with an enemy force as just described), it must shift from the march configuration to a combat formation. Company columns reorient into wedge, line, and echelon formations by individual platoon. A company-sized attack would have about 1000 meters frontage and would attack as a single echelon. A full strength battalion conducting such an assault could have a frontage of as much as 3000 meters, battle space permitting, and could attack either as a single echelon or with two companies forward and one back as a second wave.

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The third company is not a reserve in the Western sense of the term. All of the units in the echelon are committed to the attack. The spacing simply dictates the timing of each unit's arrival in the contested area. By holding one of the three units back, the OPFOR commander is seeking to create a breach with the first two that the third can exploit at full combat strength. The Russian theory of combat has no place for the Western reserve concept. OPFOR commanders always use second echelon units to reinforce success. If a commander had three units under his command, one making slight headway against tough resistance, one making no headway, and one being pushed back by a counterattack—and all calling for help—how would he divide his second echelon forces? The answer is simple. The unit advancing would receive all of the available support. The other two units do not deserve support, and in his view they would be wrong for asking for it.

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Another tactical choice is to deploy one unit forward to fix the enemy force and contain it, while the two units following it displace laterally to either flank and attempt to envelop the defender. The forces attempting to envelop always remain within direct fire support of their parent unit. This type of maneuver, called the *Okvhat*, is the dominant tactical approach of all battalion level units and below when the OPFOR commander feels sufficient force is available to conduct it.

The Breakthrough Attack has been romanticized by historians and military analysts alike, but the realities of current force structures and the potential for use of NBC weapons virtually ensures that this scenario will not play out for long. Taking this into account, OPFOR doctrine has changed in the past few years. Breakthrough attacks are no longer viewed as opportunities to roll forward deep into the enemy's rear, which risks triggering massive retaliation. Rather, once a breakthrough succeeds, all of the forces that can flow through it are to turn and apply as much conventional firepower as they can to the unsupported flanks of the breached defensive line. This is not only smart in military terms, it is politically smart as well. OPFOR commanders understand that high body counts are not conducive to sustained political resolve in the West.

Finally, let us address Pursuits. In essence, operations that follow up on a successful breakthrough are a combination of meeting engagements and pursuits while the defenders attempt to regroup and close the breach. Pursuits support the guiding principles of Speed and Offensive Orientation, and it's clear that the OPFOR view of the Pursuit is as a series of small battles in which the pursuer harasses the flanks and rear of the enemy to force him to turn and fight at a disadvantage. Despite the long-standing belief that we can exploit command and control weaknesses to disrupt large scale coordinated attacks after the first wave, we must also recognize that OPFOR units have trained to fight on a broken battlefield where friendly and enemy lines are comingled beyond comprehension. Regardless of the relative weaknesses of doctrine, this and other things make them deadly adversaries, worthy of our respect.

12. OPFOR COMBAT DOCTRINE

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Although OPFOR units train in offensive tactics four times more frequently than they do in defensive operations, any assumption that they are unprepared to conduct the latter is foolhardy. OPFOR defensive doctrine is built on a greater body of real world combat experience than virtually any other military doctrine of any nation in the world. Though most of this experience comes from World War II, modern examples exist as well. Egyptian employment of this doctrine severely hampered Israeli counter offensives during the 1973 war, and they came very close to decisively changing the outcome of that war. The only factor that precluded that eventuality was Israel's attainment of unquestioned air superiority.

TANK PLATOON

OPFOR defensive doctrine emphasizes delaying the advance of a superior enemy force through attrition, creating defensive strong points around critical terrain which are not easily bypassed, and defending in depth until conditions favorable for the resumption of the offensive can be attained. Philosophically, there are many parallels to General Depuy's rejected concept of Active Defense (related in the previous section). The fundamental difference between the two is that the OPFOR generally has sufficient numerical superiority in an area to make this a viable approach.

OPFOR doctrine accepts two basic types of defenses: the hasty defense and the deliberate defense. As in ALBD planning, the primary difference between the two is in regard to preparation time. OPFOR further recognizes that the hasty defense will be far more prevalent, given the tempo of modern armored combat. Nevertheless, the greater the amount of preparation time they are afforded, the more elaborate defensive scheme they will construct. When time permits, OPFOR defensive deployments mirror their offensive combat formations. Due to their experience against the *Wermacht* in World War II, and perhaps buttressed by their own offensive predisposition toward envelopment attacks, OPFOR doctrine eschews coordinated lines of contiguous defense in favor of strong points. Each strong point is arranged to defend a circular perimeter, such that units stationed near the "front" of it can still provide supporting fire to the sides and rear. In other words, each defensive position is well prepared to become a miniature version of Stalingrad, fighting doggedly to inflict the maximum attrition on the enemy. Further, if any enemy chooses to bypass one or more of these strong points, they will not only find more strong points to their front, they will also face a threat from the rear should one of the bypassed strong points shift to offensive operations—which they are predisposed to do as soon as opportunity permits.

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Skirmishers and pickets are posted as far as 50 kilometers forward of these strong points, both to report the advance of the enemy and also to call in artillery and air strikes on advancing elements. Behind this reconnaissance screen, you will encounter the OPFOR Security Zone. In this defensive layer, which might be as much as 15 kilometers deep, you will encounter second echelon troops in well-entrenched ambush positions. These units might also be supported by mobile tank reserves. The objective of units in the Security Zone is, again, to inflict maximum damage on advancing formations using coordinated firepower and to further slow the momentum of the attack to buy time for the main defenses to prepare.

The next units you encounter will be first echelon elements of the main defensive position, deployed up to five kilometers forward of that position and generally oriented along a different axis than the main position. This creates an element of doubt about the orientation of the latter, which might lead an enemy to approach it from an unfavorable axis. This is an important point. Throughout each layer of defense you encounter, you will find that individual units deploy such that direct assault on one will expose the flank of the attacking force to direct fire from another. Also, once you have engaged the forward elements of the strong point, you will find a greater number of ATGMs contributing to these overlapping fields of fire.

OPFOR units in defensive positions have fixed areas of responsibility within the fire sack they create, and all of their weapons are pre-sighted to cover these responsibilities. However, because the concept of maneuver in OPFOR doctrine includes the maneuver of fire as well as of units, each unit will also have at least one additional pre-plotted field of fire well off-axis from their primary. In essence (as alluded to earlier in this section) the defenders have two or three preconceived, well rehearsed fire sacks around their positions, greatly increasing the chance that they will catch you in one of them without having to reorient their position to deal with an unexpected avenue of advance.

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Defensive deployment at the strong point is coordinated from the battalion to the platoon level. Individual platoons will deploy in whatever formation is appropriate for the terrain they have been assigned (line, wedge, echelon right, etc.) and dig their own miniature strong point. Company strong points are complexes of interlocking and mutually supporting platoon strong points. Battalion strong points are comprised of multiple Company strong points, and so forth. Each Battalion strength strong point will also have a mobile reserve, which is prepared to initiate a counterattack as soon as conditions permit. When these reserves are committed, they fight according to the offensive doctrine for a meeting engagement.

As you can see, the defensive deployment doctrine also relies on successive waves of troops to inflict the guiding principles of OPFOR doctrine on any would-be attacker and bleed him dry before he can achieve his objectives. Since maintaining offensive momentum is already inherently harder than mounting a credible defense in the face of it, the task of the *M1 Tank Platoon II* commander is greatly compounded when he must face determined OPFOR defenders. Your adversaries have varied ability to execute this doctrine, depending on which theater of operation you deploy to, but you cannot underestimate the strength of the underlying concepts. Some adversaries will do it justice, others less so, but you won't know which you are up against at any given moment. Plan for the worst and hope to be pleasantly surprised.



THE FUTURE OF ARMORED CONFLICT

Any discussion about the future of conflict, armored or otherwise, is by nature more of a discussion of politics and technology than of military theory. Eventually, military thought will be modified by developments in each of these other camps, just as readily as popular opinion drove troop reductions after the Vietnam conflict and development of the aircraft carrier proved battleships to be obsolete. To properly analyze this subject, though, it is better to focus on the root causes of the change rather than the manifestation of it. One need look no further than *Popular Mechanics, Newsweek, Time*, or military and defense trade publications like *Armor, Proceedings*, and *Aviation Week and Space Technology* to find scintillating ongoing debates about how the next major weapon system is going to "revolutionize the battlefield." Scads of material exists on electromagnetic rail guns, "undefeatable" countermeasure systems, and even robotic weaponry. These discussions do have their place, but it is often a place far removed from the political reality of the day.

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The impact of the current political climate on the military industrial complex isn't surprising to anyone who has the proper appreciation of its historical roots. Reductions in strength always follow a period of major conflict, and two major conflicts have ended in the last decade: the Gulf War and the Cold War. Many people don't think of the latter as an actual "war" *per se*, because they didn't see most of the daily "battles" that occurred. Also, U.S. casualties were low—less than two thousand according to a recent account in *VFW*—and spread over many years. It was a war in virtually every other sense of the word, and it did drive a military buildup—with costs that dwarfed our expenditures during the Second World War.

When reduction is further complicated by legislation mandating a balanced budget and reduction of the federal deficit (which rose to precipitous heights during the Cold War), the political climate isn't amenable to funding R & D for a variety of whiz-bang weapons systems. The reality of this climate is that, pending unforeseen political shifts or the outbreak of a full-blown large scale war, the military will be expected to do more with less than it has had in the past. Now, let's examine how that trend is playing out in the realm of mechanized warfare.

ABRAMS TODAY, TOMORROW, AND BEYOND

The dazzling success of the Abrams MBT during the Gulf War served a secondary and less welcome purpose. It alerted all future adversaries to a deadly predator that could one day prowl in their midst. Anti-tank technology advances daily, and, in a climate that precludes Army developing a clear successor to the Abrams, it must counter these technological advances with improvements of its own. Amid an increasingly vocal contingent claiming that missiles are going to render the direct fire capability of MBT obsolete (just as the cruise missile eradicated the threat of naval gunfire and changed ship design forever), the Army is looking for ways to keep the Abrams viable until at least 2015.

The method they plan to use to accomplish this objective is common to all branches of the armed forces—the service life extension program (SEP). SEP initiatives and Engineering Change Proposals (ECPs) are natural outgrowths of a procurement system in which 20-year development cycles for new weapons systems are not uncommon. As such, they are necessary bandages—ways to derive the benefits of new technology swiftly and keep deployed units at the maximum combat level of readiness.

During the buildup phase of Operation Desert Shield, over a thousand M1s were upgraded with M1A1 ECP packages in the field, including replacement of the 105mm main gun with the more capable 120mm gun barrel. Prior to that conflict, most of these changes hadn't even received funding, but the imminent threat of war tends to loosen the purse strings. Between periods of conflict, improvements are made more gradually. Since the end of the war, the Army has introduced a further block upgrade in the production line, and over 1000 M1A2 tanks have rolled off the assembly lines. But most of the existing fleet of earlier variants have yet to receive the significant performance upgrades integral to the newest models. Before we examine the current schedule of when these upgrades will occur—and also a bit about the third production block tank, the M1A3—let's take a closer look at the benefits of the M1A2 over its predecessors, who helped to win the ground phase of Gulf War decisively.

M1A2 ENHANCEMENTS

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With the basic design element of crew survivability relatively well addressed by the M1A1, the primary focus of the M1A2 upgrade was to increase both the reliability and operability of the tank. The Inter-Vehicular Information System (IVIS) is the centerpiece of the new upgrade. Incorporating parallel circuitry, redundancy in micro-processing and bus transmission capabilities, and built in diagnostic functions, the IVIS is battle hardened to withstand shock, battle damage, and environmental extremes. IVIS drastically improves situational awareness, an essential component of survivability and mission effectiveness (see the **U.S. Army Doctrine** section for additional detail on situational awareness). Situational awareness is improved because the electronic sensors and subsystem components of the IVIS simplify target identification, driving, and navigation functions, all of which can detract from the crew's primary focus of using the tank to fight (sometimes referred to in military circles as "fighting" the tank). These improvements free commanders and gunners to spend more time with their eyes "outside" the tank, scanning for targets, instead of focusing on where they are in relation to other friendly units or other administrative functions.

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Observational capability is further enhanced by the addition of the Commander's Independent Thermal Viewer (CITV). This system affords the commander an all-weather 360-degree view of the battlefield and the ability to designate targets and pass them off to the gunner. In other words, while the gunner is engaging a previously designated target, the commander can queue up the next target, so that the turret slews to it automatically when the current engagement is completed. The M1A2 upgrade also includes dual axis stabilization for the gunner's sight, as opposed to only elevation stabilization on the M1A1. This greatly increases the speed at which he can focus on any new target. In a target-rich environment, a well disciplined M1A2 crew can get off six to eight accurate shots a minute using these systems.

Additional features of the M1A2 block include preconfigured wiring and accommodation for other ECPs that will be part of the M1A3 production run, but which either were not funded or were not completed in time to be part of the M1A2 run. These include the Multi-purpose Integrated Chemical Agent Detection system (MICAD), the Battlefield Combat Identification System (BCIS), and other modifications designed to improve both survivability and combat effectiveness.

M1A2 SEP

The first M1A3 Abrams MBTs aren't slated to begin rolling off production lines until the year 2000, and over 1000 of them are budgeted for production between then and 2016. When the last of these is completed, most of the M1A1 production run (including upgraded M1s) will be an average of 30 years old. Naturally, the trickle-down theory of military procurement is in effect, and most of these older models will be stationed with Reserve and National Guard units by that time. The bigger point to take away from that timeline is that the current generation of M1A2s will remain on the front lines at least that long. Let's examine the integral steps the Army is taking to upgrade the M1A2 so that it doesn't become a poor little sister to the new M1A3.

About a thousand M1A2s are currently funded for the SEP program, bringing the 2016 level of M1A2(SEP)/M1A3 MBTs to around two thousand, with about five thousand older model tanks in reserve. The focus of the M1A2 SEP program, as alluded to at the beginning of this section, is primarily to counter recent and projected advances in anti-tank technology. Don't make the mistake of thinking the only counters to AT technology are defensive in nature, however. Many SEP improvements are designed to make the Abrams even more lethal. Remember, the best counter to a threat is to kill it *before* it can act.

The most striking planned improvement the SEP should accomplish is inclusion of improved Forward Looking Infra-Red (FLIR) optics. The newest generation of this technology far surpasses what you experience in *M1 Tank Platoon II.* Not only are the heat signatures of vehicles and individual troops easily detectable, but the threshold of temperature differential at which they become visible has also been lowered considerably. So much so, in fact, that at the lowest settings you can now detect trace heat left by the passage of an enemy that might be an hour old. This doesn't apply to just large vehicles either; these FLIR sights can pick out the footprints of individual soldiers!

The aforementioned Battlefield Combat Identification System provides an additional classification input to the IVIS. This is a significant aid when prioritizing threats. As you have learned elsewhere in this manual, whenever contact with the enemy is held, it is the responsibility of the commander to prioritize the engagement queue of targets to deal with those that are the greatest risk to the mission first, followed by all other threat priorities (see the **NTC Tutorial** for more details). This can become a very difficult task in a target-rich environment, especially while people are shooting back at you. Any aid to threat classification is an immediate, tangible force multiplier.

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Like the passive electronic warfare sensor suite used on naval warships to classify targets over the horizon, the BCIS processes audio, electronic emissions (such as millimeter wave radars like the Longbow), visual data, and other inputs against a database of known characteristics. Naturally, some redundancy is present among various threat platforms, so unless a discrete emitter (one that is only found on a single threat platform) is present, system operators must further refine the classification by matching multiple emissions on a single threat bearing to possible profiles. When the tactical situation requires immediate threat classification without operator intervention, a default mode presents the worst case scenario for the emissions detected. In this manner, the chance that a potent threat will be overlooked or under-classified is minimized.

The MICAD system is an extremely sensitive suite of sensors that are precalibrated to warn the crew of the presence of NBC agents so that appropriate actions can be taken. Although some analysts believe that the likelihood that weapons of mass destruction, including biological and chemical arsenals, will be used has decreased dramatically, many others say just the opposite. In the absence of a polarized, well-defined conflict such as the Cold War, many smaller nations feel that they have the autonomous right to develop and use such weaponry. Certainly, Iraq's recent behavior supports the more pessimistic point of view.

Other SEP improvements include improved GPS navigation and installation of the Enhanced Position Locating Reporting System (EPLRS), which works in conjunction with the GPS to reduce the circle error probable (CEP) on both friendly and enemy contact information introduced to the IVIS data link. Standardization of the Army's Command and Control reporting structure is also supported via a software upgrade known as the Common Operating Environment (COE). Naturally, all of these new systems further increase the drain on the tank's electrical plant and also increase the level of heat being generated inside the crew compartment. As such, the M1A2 SEP package also incorporates installation of the Under Armor Auxiliary Power Unit (UAAPU). This unit increases the amount of time the interior electronics suite can remain on-line while the main power plant of the tank is shut down (a situation known as "silent watch"). In addition to increasing the stealth and endurance of tanks in defensive positions, the UAAPU has the secondary benefit of decreasing fuel consumption and engine wear. This extends the effective range of the tank (driving range, not gunnery range) and also increases the operational time between maintenance cycles.

THE M1A3

TANK PLATOON II

The first M1A3s are scheduled to arrive at their commands with all of the M1A2 SEP and ECP changes incorporated as part of the initial production run. What of the new changes which are soon to follow as part of the natural and inevitable evolution of the platform? At the time of this writing, no such programs have been funded, but there are a great many of them under discussion. We will touch on a few of these briefly, without any insider's knowledge as to which ones will actually come to fruition.

Some of the offensive improvements that have been discussed include aviator style head up displays (HUDs) on crew combat visors to increase situational awareness even further. As more of the tank's other functions become automated with digitally redundant systems, the M1 could become as easy to fight as the fly-by-wire systems perfected on the F-16 and F-18. When this occurs, HUD displays are a natural peripheral to include, because they would use the additional attention span and brain power freed up by the automation of other functions where it matters most, finding and killing the enemy.

Other lethality improvements under study include automated target tracking and hands off engagement. Such upgrades are already present in other weapons systems, such as the Aegis sensor suite on modern naval cruisers and destroyers, and modified versions could be software—not hardware—upgrades to the existing IVIS system. Although a larger bore main gun isn't planned, additional variants of smart munitions that can conduct both top and defilade attacks are in the pipeline. On the defensive side of the coin, refinements continue to be made to Chobham armor, and future models may incorporate an outer layer of radar absorbing material (stealth technology) to minimize detectability against even the new millimeter wave radars. Smoke grenades that block Longbow detection are already in use, but, naturally, the duration of their affect is limited.

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As ATGMs become more sophisticated, fire-and-forget weapons—with increasingly short times of flight—onboard defensive systems must be developed to counter these threats automatically, without crew intervention. Again, many parallels to the development of naval weapons countermeasures exist. Some of the indigenous defensive systems being researched employ chaff (thin metal strips which confuse a radar seeker head), flares to confuse infrared seekers, false target generators, and a bunch of other proven (old) tricks to defeat missiles—bundled together in a shiny new package for tanks. Even small versions of the Vulcan Phalanx have been considered to achieve hard kills on inbound missiles, but the specific doppler and horizon angle conditions necessary to generate a proper window of engagement would be much harder to achieve on land than at sea. Other hard kill systems are in consideration, though, including versions of reactive armor that respond to inbound threats *before* impact.

The upshot of all this discussion is that technology may continue to shape the battlefield, but the developments that naturally flow from it are more often evolutionary than revolutionary. The Main Battle Tank is not a dinosaur, as some analysts would like you to believe, destined to extinction in the ALBD concept of the next century. Rather, given current service life projections, the M1A3 will remain in service until at least the middle of the first century of the next millennium.

GLOSSARY



| AAR | After-Action Report; a written form of debriefing that also presents "lessons learned" for dissemination within the unit and, when applicable, to other units. |
|-----------------------|--|
| ACR | Armored Cavalry Regiment. |
| AGM-65 | See Maverick. |
| AGM114 | See Hellfire. |
| AH-1 | Huey Cobra, a U.S. attack helicopter. |
| AH-64 | Apache, a U.S. attack helicopter. |
| Alternate Position | A secondary fighting position normally occupied when it is undesirable to remain in the primary position. Alternate positions must be located such that they still support the unit's role in the platoon fire plan. |
| APC | Armored Personnel Carrier. |
| APFSDS | Armor-Piercing, Fin-Stabilized, Discarding-Sabot round; also known as a Long-Rod Penetrator. These rounds are made of depleted uranium and can penetrate the armor of every potential OPFOR vehicle currently deployed. |
| AOBC | Armor Officer Basic Course; located at Fort Knox, Kentucky. |
| Assembly Area | A designated area where forces gather to prepare for further action. |
| AT -# | NATO designation system usually used to identify Soviet Anti-Tank Guided Munitions. The number following the hyphen designates the model or variant for tactical purposes. |
| ATGM | Anti-Tank Guided Missile. |

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| Avenue of Approach | The chosen route of travel of an attacking force; also known as the Axis of Advance. | GLOSSARY |
|----------------------------|---|----------|
| Battle Position (BP) | A defensive position chosen along an enemy's expected avenue of approach. | |
| Blazer | The NATO nickname for first-generation explosive reactive armor developed by the Israelis. | |
| BMP-# | A Russian Infantry Fighting Vehicle, the counterpart of the Bradley series. The higher the number designator, the newer and more capable the platform. | |
| C3I | Command, Control, Communications, and Intelligence. | |
| Challenger I | The first British main battle tank to use Chobham armor. The Challenger I was deployed in the 1980s. | |
| Challenger II | The current variant of the British Challenger series. The Challenger II upgrade has second-generation Chobham armor, which makes it even more resistant to shaped charge rounds like HEAT penetrators. This tank also carries an improved electronics suite and a 120mm main gun. | |
| Chobham Armor | Ceramic composite armor between steel plates, developed by the British Army research facility at Chobham, England. Chobham armor is a major factor behind the survivability of the M1 Tank in high threat environments, and its specifications and manufacturing process are closely guarded NATO secrets. | |
| CID | Commander's Integrated Display. | |
| CINC | Commander In Chief. | |
| CITV | Commander's Independent Thermal Viewer. | |
| Close Air Support (CAS) | Rotary and fixed wing assets engaging enemy targets in close proximity to friendly forces. | |

| ECM | Electronic Counter-measures. | SOTE |
|---------------------------------|--|------|
| Economy of Force | One of Clausewitz's principles of war. Use only the force necessary to get the job done, so that you can mass additional forces at the decisive point of the battlefield (see also <i>Mass</i>). | SARY |
| Engagement Area | The place where a commander expects to engage and destroy an enemy force. Engagement areas are further divided into sectors or fields of fire, and individual units or small groups of units are assigned responsibility for each of these. See also <i>Fire Sack</i> . | |
| Explosive Reacti (ERA or RA) | ve Armor A secondary level of armor protection which is not indigenous to the vehicle's hull. ERA charges are high explosive sandwiched between steel plates. When a second generation ERA packet is hit by either a shaped charge (like a HEAT round) or a long rod penetrator (like an AFPDS), it explodes outward to counter the force of the hit and minimize damage to the tank hull. Once used, the unit provides no further protection in that spot on the hull and must be replaced. | |
| FAADS | Forward-Area Air-Defense System; a Bradley variant that replaces the TOW launcher with four Stinger SAMs. | |
| FASCAM | Field Artillery SCAatterable Mines; both anti-personnel and anti-tank mines can be delivered in this fashion. | |
| Fire Sack | A well-conceived engagement area that employs both direct and indirect fire from multiple sources to trap and utterly destroy an enemy formation before it can escape the area. | |
| FIST | Fire Support Team; a battalion level asset that coordinates indirect fire support for company and platoon operations. | |

TANK PLATOON I

| Combat Multiplier | See Force Multiplier. |
|----------------------|--|
| Combination Armor | The CIS/OPFOR term for armor that is a composite of ceramic and steel layers; it is less effective than Chobham armor. |
| Comanche | The RAH-66 scout/attack helicopter; designed as a follow on to the Apache, this unit is still in prototype development. |
| Dead Space | An area which cannot be observed or covered by fire due to obstructing terrain, the minimum or maximum range of weapons systems, or limitations of the sensor or system which trains the weapon to a specific bearing. |
| Decisive | |
| Engagement | One in which a unit is fully committed and cannot extricate itself from the situation. Decisive Engagements must be won or lost to be resolved. |
| Decisive Terrain | Terrain that has a critical impact on mission accomplishment; also known as "Key Terrain." |
| Defilade | To set up on the rear of a slope or terrain feature, thus protecting friendly forces from observation or direct fire attack by the enemy. Defilade does not protect against indirect fires like Artillery and MLRS attacks. |
| DID | The Driver's Integrated Display on the M1A2. |
| Displace | To leave one position to move laterally to another. |
| DPICM | Dual Purpose Improved Conventional Munitions. These artillery rounds drop clusters of bomblets on known or suspected enemy positions, carpeting the area in a highly destructive blast pattern. |
| Dragon | A portable anti-tank missile that is wire-guided and optically tracked, like the TOW. |

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life.

| FLIR | Forward-Looking InfraRed. | HE-VT | High-Explosive, Variable-Time fuse. | GLO |
|------------------|---|---------------|--|--------|
| Force Multiplier | Tactical operations and elements that enhance the effectiveness of a given combat force without actually increasing the firepower or combat ratio of that force. Operational Deception, Surprise, Electronic Warfare, Combat Engineering, and Psychological Warfare are all | HMMWV | High-Mobility Multi-purpose Wheeled Vehicle (pronounced Humvee). Also known affectionately known as the "Hummer." This is the modern descendant of the Willys Jeep. It's an all purpose transport vehicle with above average off road capability. | ISSARY |
| | | HUD | Head-Up Display. | |
| Fratricide | Casualties caused by "friendly fire" or "blue on blue" engagements. | Hull Down | A fighting position in which the muzzle of the gun barrel is the lowest part of the vehicle exposed to direct fire attack. | |
| Gap | Any break in the fields of fire as plotted on a fire plan. The enemy will seek out and attempt to exploit gaps when | IFV | Infantry Fighting Vehicle. | |
| | they are present. See also <i>Surface</i> . | IVIS | Inter-Vehicular Information System; the new computer | |
| GCDP | The Gunner's Control and Display Panel on the M1A2. | | network and digital display installed in the commander's cockpit of M1A2 MBTs. | |
| GPS | Global Positioning System; a satellite-based navigation system that can accurately give positions within a few hundred feet. Used extensively by U.S. forces for night navigation during the Gulf War. | Javelin | The follow on to the Dragon infantry-carried ATGM; the Javelin is lighter, needs less set up time, and is fired from a shoulder instead of a tripod. In lieu of the Dragon's wire guidance system, which exposed the firing unit to counter- | |
| HE | High Explosive. | | battery fire throughout the missile's time of flight, the | |
| HEAT | High-Explosive Anti-Tank. See Shaped-Charge Warhead. | | Javelin is a fire-and-forget round. In the same way as the Sidewinder air-to-air missile, the Javelin's seeker head | |
| Hellfire | A long-range, laser-guided, anti-tank missile used by Apache attack helicopters and other NATO units. | | must be locked onto the heat signature (IR) of the target prior to launch. | |
| Hellfire II | The next-generation Hellfire missile, which uses a millimeter-wavelength radar seeker that allows for greater discrimination between targets in close proximity to one another. | J-STARS | A specially configured Boeing 707 with a side-mounted look-down synthetic aperture radar. This configuration is very effective in detecting ground targets from ranges of hundreds of miles and relaying this tactical picture to ground based command conters for further discontinuation | |
| HEI | High Explosive Incendiary | | | |
| HESH | High Explosive Squash Head | JIF | Joint Task Force. | |
| HETS | Heavy-Equipment Transporter System; a tractor-trailer that | Kiowa Warrior | UH-58D scout attack helicopter. | |
| | can haul large vehicles (including M1 series tanks) during non-combat movement. This eliminates unnecessary wear on the units being transported and extends their service | Leopard I | A 1970s-era German main battle tank. | |

ANK PLATOON II

ANK PLATOON



| Leopard II | A 1980s-era German main battle tank; offensively equivalent to the M1 series, but constructed without Chobham armor. |
|------------|--|
| Longbow | An all weather capable millimeter-wave radar slated to |

deploy on the D model of the AH-64 Apache attack helicopter.

Long-Rod

- Penetrator A metal "dart" up to two feet in length that attempts to defeat tank armor purely with kinetic energy. The AFPDS uses a long-rod penetrator made of depleted uranium, one of the densest materials known to man, to ensure that the rod does not break up before piercing the target's armor. Traveling at about Mach 4, DU penetrators have been known to pass entirely through one tank and still retain sufficient kinetic energy to kill a second vehicle behind the first.
- M1 Abrams The replacement for the aging M60. Commissioned for development by General Creighton Abrams, the first Abrams Main Battle Tanks appeared in the 1980s. These units had a 105 mm main gun and first generation Chobham armor.
- M1A1 Improved M1 tank with a 120 mm gun and second generation Chobham armor.
- M1A1 HA The Heavy Armor variant of the M1 series. This tank featured a depleted uranium layer in combination with the improved Chobham armor package to further degrade the threat of long-rod penetrators.
- M1A2 The latest version of the M1 series; includes all the improvements up to this point (including the DU armor of the M1A1 HA) plus IVIS command and control systems and a new sensor package. The M1A2 is the tank you command in *M1 Tank Platoon II*.

M2/M3 Bradley A 1980s-era U.S. Infantry Fighting Vehicle.

| M60 | A 1960s-era U.S. main battle tank still used by some Marine Corps, Army and National Guard active and reserve units. |
|----------|---|
| M106 | A mobile 81mm mortar carried on an M113 chassis. |
| M109A6 | Paladin 155mm Self-Propelled Howitzer. |
| M113 | A 1960s-era U.S. armored personnel carrier. |
| M125 | A mobile 106mm mortar carried on an M113 Chassis. |
| M270 | The combined MLRS carrier/launcher vehicle. |
| M577 | A mobile command post based on an M113 chassis. |
| M901 | A TOW anti-tank missile launcher with optical guidance, mounted on a M113 chassis. |
| Mass | Another of Clausewitz's principles of war (see also <i>Economy of Force</i>). Mass involves the concentration of sufficient firepower at a decisive point on the battlefield to achieve victory. |
| Maverick | A laser or infrared-guided air-to-surface missile. |
| MBT | Main Battle Tank. |
| MFDs | Multi-Function Displays. |
| MILES | Multiple Integrated Laser Exercise System; MILES is the integrated network of laser sensors and vehicle mounted lasers used at NTC and other locations to provide the world's most realistic combat training short of live fire. |
| MLRS | Multiple-Launch Rocket System; a modified M2 Bradley hull that carries two six-cell rocket packs to lay down carpet-like artillery barrages. |
| NATO | North Atlantic Treaty Organization. |

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| NBC | Nuclear, Biological, Chemical. |
|------|---|
| NCO | Non-Commissioned Officer. |
| NTC | National Training Center; located at Fort Irwin, California |
| SLAP | Special Load, Armor Piercing; a special Depleted Uranium penetrator round used by the U.S. Marines for the M2HB .50cal machine gun. |

APPENDICES
APPENDIX A: EQUIPMENT U.S. VEHICLES



M1A2 ABRAMS Main Battle Tank

| Crew: | 4 | |
|---------------------------------|--|--|
| Armament: | 1 x 120mm, 1 x 7.62mm MG (coaxial), | |
| | 1 x 7.62mm MG (AA), 1 x 12.7mm MG (AA), | |
| | 2 x 6 smoke grenade launchers | |
| Ammunition: | 40 x 120mm, 900 x 12.7mm, 11,400 x 7.62mm, | |
| | 24 smoke grenades | |
| Length gun forward: | 9.82m | |
| Length hull: | 7.918m | |
| Width: | 3.653m | |
| Height to turret roof: | 2.375m | |
| Height overall: | 2.885m | |
| Ground clearance: | 0.482m | |
| Combat weight: | Approximately 130,000 lb | |
| Power-to-weight ratio: 23hp/ton | | |
| Engine: | Textron Lycoming AGT 1500 gas turbine | |
| | developing 1, 500hp at 30,000 rpm | |
| Maximum road speed: | 72.42km/hr (governed) | |
| Maximum range: | 500km | |
| Fuel capacity: | 1,907 liters | |
| Fording: | 1.219m, 1.98m with fording kit | |
| Vertical obstacle: | 1.244m | |
| Trench: | 2.743m | |
| Gradient: | 60% | |
| Side slope: | 40% | |
| Armor: | Classified: Approximately 610 mm maximum | |
| Armor type: | Chobham | |
| NBC system: | Yes | |
| Night vision equipment: | Yes (passive for commander, gunner and driver) | |

This latest version of the Abrams MBT has new armor, a commander's independent thermal viewer, and a new land navigation system.





M2A2/M3A2 Bradley Infantry/Cavalry Fighting Vehicle

| Crew: | 3+6 infantry, 5 for M3 |
|-------------------------|--|
| Armament: | 1 x 25mm cannon, 1 x 7.62 MG (coaxial), |
| | 2 x TOW ATGW launchers |
| | 2 x 4 smoke grenade launchers |
| Ammunition: | 900 x 25mm, 2,200 x 7.62mm, 7 TOW ATGW |
| Length: | 6.55m |
| Width: | 3.61m |
| Height to turret roof: | 2.565m |
| Height overall: | 2.972m |
| Ground clearance: | 0.432m |
| Combat weight: | 22,940kg |
| Power-to-weight ratio: | 20.38hp/ton |
| Engine: | Cummings VTA-903T turbocharged 8 cylinder |
| U U | diesel developing 500 hp at 2,600rpm |
| Maximum road speed: | 66km/hr |
| Maximum range: | 483km |
| Fuel capacity: | 662 liters |
| Fording: | Amphibious with preparation |
| Vertical obstacle: | 0.914m |
| Trench: | 2.54m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | Classified: Approximately 152mm maximum |
| Armor type: | Aluminum/Laminate/Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (passive for commander, gunner and driver) |

The Bradley IFV is the replacement for the M113 APC in the U.S. Army. Originally placed in service in 1981, the Bradley has many variants, including the Cavalry Fighting Vehicle or M3. The major difference in the two vehicles is that one is designed to carry infantry and has firing slots, while the cavalry vehicle has none but more crew and armament.



BFV ADV Bradley IFV with Blazer Air Defense turret

| Crew: | 4 |
|-------------------------|--|
| Armament: | Stinger AA Missiles, 1 x 25mm GAU-12 cannon |
| Ammunition: | 8x Stinger AA Missiles, 1,600x 25mm |
| Length: | 6.55m |
| Width: | 3.61m |
| Height overall: | Approximately 3m |
| Ground clearance: | 0.432m |
| Combat weight: | 23,000kg |
| Power-to-weight ratio: | 20hp/ton |
| Engine: | Cummings VTA-903T turbocharged 8 cylinder |
| | diesel developing 500 hp at 2,600rpm |
| Maximum road speed: | 66km/hr |
| Maximum range: | 483km |
| Fuel capacity: | 662 liters |
| Fording: | Amphibious with preparation |
| Vertical obstacle: | 0.914m |
| Trench: | 2.54m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | Classified: Approximately 152mm maximum |
| Armor type: | Aluminum/Laminate/Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (passive for commander, gunner and driver) |

This is the air defense version of the Bradley Infantry fighting vehicle.

COOLOGOOP

M4TOC New Tactical Operations Center based on Bradley

TANK PLATOON II

Crew: 4 None Armament: None Ammunition: 6.55m Length: Width: 3.61m Height overall: Approximately 3m Ground clearance: 0.432m 23,000kg Combat weight: Power-to-weight ratio: 20hp/ton Engine: Cummings VTA-903T turbocharged 8 cylinder diesel developing 500 hp at 2,600rpm Maximum road speed: 66km/hr 483km Maximum range: Fuel capacity: 662 liters Amphibious with preparation Fording: Vertical obstacle: 0.914m Trench: 2.54m 60% Gradient: Side slope: 40% Classified: Approximately 10mm maximum Armor: Armor type: Aluminum/Laminate/Steel NBC system: Yes **Night vision equipment:** Yes (passive for commander, gunner and driver)

This new command and control vehicle is called the M4 and is based on the Bradley chassis.

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HUMMV M2 OR M19 Hummer with .50 cal MG or 40mm Auto Grenade Launcher

| Crew: | 1+3 |
|-------------------------|--|
| Armament: | 1 x 12.7mm MG or 1 x 40mm grenade launcher |
| Ammunition: | Varies |
| Length: | 4.57m |
| Width: | 2.15m |
| Height: | 1.75m (not including weapons) |
| Ground clearance: | 0.406m |
| Combat weight: | 3430kg maximum |
| Engine: | V-8 diesel developing 130hp at 3,600rpm |
| Maximum road speed: | 105km/hr |
| Maximum range: | Over 500km |
| Fuel capacity: | 94 liters |
| Fording: | 0.76m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | None |
| Night vision equipment: | None |

The HMMWV entered service in the 1980s and has a multitude of variants. This vehicle is replacing the jeep in service throughout the U.S. military.



HMMWV TOW Hummer with top mounted TOW launch tube and sight

2 + 2 Crew: 1 x TOW launch tube Armament: 4.57m Length: Width: 2.15m 1.75m (not including weapons) Height: Ground clearance: 0.406m Combat weight: 3430kg maximum V-8 diesel developing 130hp at 3,600rpm Engine: Maximum road speed: 105km/hr Maximum range: Over 500km 94 liters Fuel capacity: Fording: 0.76m 60% Gradient: 30% Side slope: Armor: None N/A Armor type: NBC system: None Night vision equipment: None

This variant of the 'Hummer' adds an anti-tank capability.



HMMWV AVENGER Hummer with Avenger Air Defense Turret

| Crew: | 4 |
|-------------------------|--|
| Armament: | Stinger AA missiles, M2HB .50cal Machine Gun |
| Ammunition: | 1,200x .50cal HEI, 8x Stinger missiles |
| Length: | 4.57m |
| Width: | 2.15m |
| Height: | 1.75m (not including weapons) |
| Ground clearance: | 0.406m |
| Combat weight: | 3430kg maximum |
| Engine: | V-8 diesel developing 130hp at 3,600rpm |
| Maximum road speed: | 105km/hr |
| Maximum range: | Over 500km |
| Fuel capacity: | 94 liters |
| Fording: | 0.76m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | None |
| Night vision equipment: | None |

This air defense version of the 'Hummer' carries the Stinger missile and a Vulcan 20mm cannon.



LAV 25 USMC 8 wheeled light armored IFV with 25mm turret

Crew: 3+6 1 x 25mm, 1 x 7.62mm MG (coaxial), Armament: 1 x 7.62mm MG (AA), 2 x 4 smoke grenade launchers Ammunition: 630 x 25mm, 1,620 x 7.62mm 6.393m Length hull: Width: 2.499m Height overall: 2.692m Ground clearance: 0.5m Combat weight: 12,882kg Power-to-weight ratio: 21.34hp/ton 6-cylinder diesel developing 275hp at 2,800rpm Engine: Maximum road speed: 100km/hr Maximum water speed: 9.7km/hr Maximum range: 668km 300 liters Fuel capacity: Fording: Amphibious 0.5m Vertical obstacle: 2.057m Trench: Gradient: 60% 30% Side slope: Armor: 10mm NBC system: None Night vision equipment: Yes, passive for crew

The LAV-25 was developed in the 1980s to meet a demand by the USMC for an air transportable armored personnel carrier.

185



LAV TOW USMC 8 wheeled LAV with Cherry Picker TOW

| Crew: | 4 | |
|-------------------------|--|--|
| Armament: | 2 x TOW ATGW, 1 x 7.62mm or 12.7mm MG | |
| | (AA), 2 x 4 smoke grenade launchers | |
| Ammunition: | 16 x TOW, 1,250 x 7.62mm | |
| Length hull: | 6.393m | |
| Width: | 2.499m | |
| Height overall: | Approximately. 2.7m | |
| Ground clearance: | 0.5m | |
| Combat weight: | 12,882kg | |
| Power-to-weight ratio: | 21.34hp/ton | |
| Engine: | 6-cylinder diesel developing 275hp at 2,800rpm | |
| Maximum road speed: | 100km/hr | |
| Maximum water speed: | 9.7km/hr | |
| Maximum range: | 668km | |
| Fuel capacity: | 300 liters | |
| Fording: | Amphibious | |
| Vertical obstacle: | 0.5m | |
| Trench: | 2.057m | |
| Gradient: | 60% | |
| Side slope: | 30% | |
| Armor: | 10mm | |
| NBC system: | None | |
| Night vision equipment: | Yes, passive for crew | |

This anti-tank version of the LAV-25 is in service with the USMC.

6.6.6

LAV ADV USMC 8 wheeled LAV with Blazer Air Defense turret

TANK PLATOON II

Crew: 4 Armament: Ammunition: 6.393m Length hull: Width: 2.499m Height overall: Approximately 3m Ground clearance: 0.5m Combat weight: 12,882kg Power-to-weight ratio: 21.34hp/ton Engine: Maximum road speed: 100km/hr Maximum water speed: 9.7km/hr Maximum range: 668km Fuel capacity: 300 liters Fording: Amphibious Vertical obstacle: 0.5m 2.057m Trench: 60% Gradient: 30% Side slope: Armor: 10mm None NBC system: **Night vision equipment:** Yes, passive for crew

4 Stinger AA missiles, 25mm GAU-12 cannon, 2 x 4 smoke grenade launchers 8 x Stinger, 1,600x 25mm 6.393m 2.499m Approximately 3m 0.5m 12,882kg 21.34hp/ton 6-cylinder diesel developing 275hp at 2,800rpm 100km/hr 9.7km/hr 668km 300 liters Amphibious 0.5m 2.057m 60% 30% 10mm



AAV-7 USMC LVPT amphibious assault APC

188

| Crew: | 3+25 infantry | |
|-------------------------|--|--|
| Armament: | 1 x 12.7mm MG, or 1 x 40mm grenade launcher | |
| | and 1 x 12.7mm MG | |
| Ammunition: | 1,000 x 12.7mm MG | |
| Length: | 7.943m | |
| Width: | 3.27m | |
| Height to turret roof: | 3.12m | |
| Height overall: | 3.263m | |
| Ground clearance: | 0.406m | |
| Combat weight: | 22,838kg | |
| Power-to-weight ratio: | 17.51hp/ton | |
| Engine: | Detroit Diesel model 8V-53T, 8 cylinder, water | |
| | cooled, turbocharged engine developing 400hp | |
| | at 2,800rpm | |
| Maximum road speed: | 64km/hr | |
| Maximum water speed: | 13.5km/hr | |
| Maximum range: | 482km | |
| Fuel capacity: | 681 liters | |
| Fording: | Amphibious | |
| Vertical obstacle: | 0.914m | |
| Trench: | 2.438m | |
| Gradient: | 60% | |
| Side slope: | 60% | |
| Armor: | 45mm (maximum) | |
| Armor type: | Aluminum | |
| NBC system: | None | |
| Night vision equipment: | Yes (for driver only) | |

This amphibious landing craft first went into service in 1991 and mainly serves with the United States Marine Corps. Service Life Extension programs have added smoke generators and passive night vision systems.



M113 A3 Latest version of the M113 APC

| Crew: | 2 + 11 infantry |
|-------------------------|---|
| Armament: | 1 x 12.7mm MG |
| Ammunition: | 2,000 x 12.7mm |
| Length hull: | 4.863m |
| Width: | 2.686m |
| Height to hull top: | 1.85m |
| Height overall: | 2.52m |
| Ground clearance: | 0.43m |
| Combat weight: | 11,253kg |
| Power-to-weight ratio: | 18.51hp/ton |
| Engine: | 6 cylinder Detroit diesel developing 250hp at |
| | 2,800rpm |
| Maximum road speed: | 60.7km/hr |
| Maximum range: | 480km |
| Fuel capacity: | 360 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.61m |
| Trench: | 1.68m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | 44mm maximum |
| Armor type: | Aluminum |
| NBC system: | Optional |
| Night vision equipment: | Yes (passive or infrared for driver) |

This latest version of the M113 entered service in 1987 and featured a more powerful engine, appliqué armor and other improvements.



M901 ITOW Cherry Picker TOW on M113

190

| Crew: | 4 |
|-------------------------|---|
| Armament: | TOW ATGW |
| Length hull: | 4.863m |
| Width: | 2.686m |
| Ground clearance: | 0.43m |
| Combat weight: | 11,253kg |
| Power-to-weight ratio: | 18.51hp/ton |
| Engine: | 6 cylinder Detroit diesel developing 250hp at |
| | 2,800rpm |
| Maximum road speed: | 60.7km/hr |
| Maximum range: | 480km |
| Fuel capacity: | 360 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.61m |
| Trench: | 1.68m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | 44mm maximum |
| Armor type: | Aluminum |
| NBC system: | Optional |
| Night vision equipment: | None |

This variant adds the TOW capabilities to the basic vehicle design.



M577 TOC Tactical Operations Center on M113

| Crew: | 5 |
|---------------------|--|
| Armament: | None |
| Length hull: | 4.87m |
| Width: | 2.54m |
| Height overall: | 2.68m |
| Ground clearance: | 0.41m |
| Combat weight: | 11,000kg |
| Engine: | GMC Model 6V53 diesel developing 215hp |
| Maximum road speed: | 68.4km/hr |
| Maximum range: | 495km |
| Fuel capacity: | 454 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.61m |
| Trench: | 1.68m |
| Gradient: | 60% |
| Armor: | 38mm (maximum) |
| NBC system: | Yes |

A command and control version of the M113 Armored Personnel Carrier, it is fitted with additional radios, a table, a map-board and a tent on the rear for additional space.



M109A6 PALADIN SPG Newest self-propelled 155mm howitzer

| Crew: | 6 |
|-------------------------|--|
| Armament: | 1 x 155mm howitzer, 1 x 12.7mm MG |
| Ammunition: | 36 x 155mm, 500 x 12.7mm |
| Length gun forward: | 9.12m |
| Length hull: | 6.19m |
| Width: | 3.15m |
| Height overall: | 3.28m |
| Ground clearance: | 0.46m |
| Combat weight: | 24,948kg |
| Power-to-weight ratio: | 16.23hp/ton |
| Engine: | Detroit Diesel Model 8V-71T, turbocharged, |
| | liquid cooled 8 cylinder diesel developing |
| | 405bhp at 2,300rpm |
| Maximum road speed: | 56.3km/hr |
| Maximum range: | 349km |
| Fuel capacity: | 511 liters |
| Fording: | 1.07m |
| Vertical obstacle: | 0.53m |
| Trench: | 1.83m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | Classified |
| Armor type: | Aluminum |
| NBC system: | Optional |
| Night vision equipment: | Infrared or passive for driver |

This is the newest version of the standard self-propelled howitzer that has been in use by the U.S. Army since the 1950s. The latest version, the A6, includes an automatic fire control system, global positioning system, upgraded suspension and improved armor.

X . The

ANK PLATOON

MLRS

| Multiple Launch Rocket System | |
|-------------------------------|--------------------|
| Crew: | 3 |
| Armament: | 12 x 227mm rockets |
| Ammunition: | 12 x 227mm |
| Length: | 6.55m |
| Width: | 3.61m |
| Ground clearance: | 0.432m |
| Combat weight: | 25.1 tons |
| Power-to-weight ratio: | 19.9hp/ton |
| Engine: | 500hp diesel |
| Maximum road speed: | 64kph |
| Maximum range: | 483km |
| Fuel capacity: | 662 liters |
| Vertical obstacle: | 0.914m |
| Trench: | 2.54m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | 12mm maximum |
| Armor type: | Aluminum |
| NBC system: | None |
| Night vision equipment: | None |

The MRLS is designed to be an area coverage weapon to complement regular artillery.



M-939 Truck

| Crew: | 1+2 |
|-------------------------|--|
| Armament: | None |
| Length: | 7.886m |
| Width: | 2.47m |
| Height overall: | 3.07m |
| Ground clearance: | 0.33m |
| Maximum weight: | 14,507kg, 4,560kg cargo |
| Engine: | 8.3 liter 6 cylinder turbocharged diesel |
| | developing 240hp at 2,100rpm |
| Maximum road speed: | 86km/hr |
| Maximum range: | Over 500km |
| Fuel capacity: | 295 liters |
| Fording: | 0.76m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | None |
| Night vision equipment: | No |

The M-939 truck entered service with the U.S. Army in the 1980s. This is the newest in a long line of trucks dating back to the 1940s.



M-977 HEMMT CARGO heavy high mobility cargo truck

TANK PLATOON I

| Crew: | 1 + 1 |
|-------------------------|---|
| Armament: | None |
| Length: | 10.173m |
| Width: | 2.438m |
| Height overall: | 2.565m |
| Ground clearance: | 0.35m |
| Maximum weight: | 29,440kg, 11,840kg cargo |
| Engine: | 12 liter V-8 diesel developing 445hp at |
| | 2,100rpm |
| Maximum road speed: | 88km/hr |
| Maximum range: | Over 500km |
| Fuel capacity: | 589 liters |
| Fording: | 0.76m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | None |
| Night vision equipment: | No |

The HEMMET 8 x 8 vehicle entered service with the U.S. Army in the 1980s. The system is used in a large variety of roles as a utility vehicle. 195



M-978 HEMMET FUEL heavy high mobility fuel truck

| Crew: | 1 + 1 |
|-------------------------|---|
| Armament: | None |
| Length: | 10.173m |
| Width: | 2.438m |
| Height overall: | 2.565m |
| Ground clearance: | 0.35m |
| Maximum weight: | 29,440kg |
| Fuel capacity: | 9,500 liters |
| Engine: | 12 liter V-8 diesel developing 445hp at |
| | 2,100rpm |
| Maximum road speed: | 88km/hr |
| Maximum range: | Over 500km |
| Fuel capacity: | 589 liters |
| Fording: | 0.76m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | None |
| Night vision equipment: | None |

The fuel truck version of the HEMMET is designated the M978 to distinguish it fromj the M977 designation given the standard variant.

US AIRCRAFT



AH-64A/D APACHE Both the A and D model (without Longbow radar)

| Length: | 51 ft. |
|------------------------------|--|
| Width: | 48 ft. rotor, 19 ft. 1 in. with weapon racks |
| Height: | 14 ft. 1.25 in. |
| Maximum weight: | 17,500 lbs. |
| Maximum speed: | 158 kts. |
| Range: | 260 nautical miles |
| Armament: | 30 mm chain gun (1,200 rds.). Up to 16 Hellfire or 76 2.75 in. rockets on pylons plus an additional 4 Stingers or two Sidewinder missiles on outer pylon tips |
| Accommodation: | Pilot/Copilot Gunner |
| The AH 6A first entered serv | ion in 1081 with the U.S. Army It ourrently serves as |

Acco

The AH-64 first entered service in 1984 with the U.S. Army. It currently serves as the main attack helicopter with the Army and with many other nations.



AH-64D LONGBOW D model with Longbow radar (only 1 in 3)

| Length: | 51 ft. |
|-----------------|--|
| Width: | 48 ft. rotor, 19 ft. 1 in. with weapon racks |
| Height: | 16 ft. 3 in. |
| Maximum weight: | 17,500lbs. |
| Maximum speed: | 141 kts. |
| Range: | 220 nautical miles |
| Armament: | 30 mm chain gun (1,200 rds). Up to 16 Hellfire or 76 2.75 in. rockets on pylons plus an additional 4 Stingers or Hellfires or two Sidewinders on outer pylon tips |
| Accommodation: | Pilot/Copilot Gunner |

The addition of the millimeter wave Longbow radar on the Apache greatly increases its ability to locate targets as the radar allows sighting through rain, fog, and smoke that defeats FLIR and TV imaging.

RH-66 COMANCHE

Light attack/recon helicopter

TANK PLATOON II

| Length: | 46 ft. 10.25 in. |
|-----------------|--|
| Width: | 39 ft. 0.5 in. rotor, 6 ft. 8.25 in. |
| Height: | 11 ft. 0.25 in. |
| Maximum weight: | 17,408 lbs. |
| Maximum speed: | 175 kts. |
| Range: | 250 nautical miles? |
| Armament: | 20mm cannon with 500 rds., 6 Hellfire or 12 Stinger missiles in internal weapons bays, 4 more Hellfire or 8 Stinger missiles on external hardpoints |
| Accommodation: | Pilot and Weapons Officer |

Currently in prototype stage, the Comanche helicopter should enter service around the year 2007.





AH-1W SUPER COBRA USMC version of the Cobra

200

| Length: | 58 ft. |
|-----------------|--|
| Width: | 48 ft. rotor, 10 ft. 9 in. fuselage |
| Height: | 13 ft. 6 in. |
| Maximum weight: | 14,750 lbs. |
| Maximum speed: | 152 kts. |
| Range: | 317 nautical miles |
| Armament: | 20mm cannon with 750 rounds, 8 TOW or Hellfire plus 2 Sidewinder or Sidearm Missiles. Also can carry 2.75 in rockets, Maverick Missiles, or Fuel-Air Explosives |
| Accommodation: | Pilot/Copilot Gunner |

This version of the Cobra attack helicopter entered service with the USMC in the late 1980s. It is also in service with Taiwan and Turkey. The Whiskey model of the Cobra features new electronics and more powerful engines.

OH-58D KIOWA WARRIOR Recon Helicopter

TANK PLATOON I

| Length: | 42 ft. 2 in. |
|-----------------|---|
| Width: | 35 ft. rotor, 6 ft. 5.5 in. fuselage |
| Height: | 12 ft. 11 in. |
| Maximum weight: | 4,500 lbs. |
| Maximum speed: | 128 kts. |
| Range: | 250 nautical miles |
| Armament: | 4 Stinger or Hellfire missiles, 2.75 in rocket pods |
| | or machine gun pods |
| Accommodation: | Pilot/Copilot Observer |

The Kiowa Warrior is the armed version of the Kiowa helicopter. All current Kiowas are being upgraded to the Kiowa Warrior version.

201



A-10 THUNDERBOLT USAF Ground attack aircraft

| Length: | 52 ft. 7 in. (16.03m) |
|-----------------|--|
| Width: | 55 ft. (16.76m) |
| Maximum weight: | 42,825lb. (20,786kg) |
| Maximum speed: | 460 mph (740km/hr) |
| Combat Radius: | 250nm |
| Armament: | 30mm cannon and up to 18,500 lb. of ordnance on 11 external hardpoints |
| Accommodation: | Pilot only |

Designed for close air support in Europe as a tank buster, the A-10 has proven itself a very valuable battlefield weapon for close air support.

AV-8B Harrier II USMC Ground attack aircraft

| Length: | 46 ft. 4 in. (14.12m) |
|-----------------|---|
| Width: | 30 ft. 4 in. (9.25m) |
| Maximum weight: | 29,750lb. (13,494kg) |
| Maximum speed: | 668 mph (1075km/hr) |
| Combat radius: | 692nm |
| Armament: | 25mm GAU-12 cannon and up to 9,000 lb. of ordnance on seven external hardpoints |
| Accommodation: | Pilot only |

ANK PLATOON I

Designed as a multi-role fighter for the Royal Navy, in the hands of the U.S. Marines, the Harrier II has become one of the premier battlefield close air support aircraft in service.



NATO VEHICLES



Challenger II British MBT

| Crew: | 4 |
|-------------------------|--|
| Armament: | 1 x 120mm, 1 x 7.62mm MG (Coaxial), |
| | 1 x 7.62mm MG (AA), 2 x 5 smoke grenade |
| | launchers |
| Ammunition: | 50 x 120mm, 4,000 x 7.62mm |
| Length gun forward: | 11.55m |
| Length hull: | 8.327m |
| Width: | 3.52m |
| Height to turret roof: | 2.49m |
| Ground clearance: | 0.50m |
| Combat weight: | 62,500kg |
| Power-to-weight ratio: | 19.2hp/ton |
| Engine: | Perkins Engines Condor V-12 diesel developing |
| • | 1,200bhp at 2,300 rpm |
| Maximum road speed: | 56km/hr |
| Maximum range: | 450km |
| Fuel capacity: | 1592 liters |
| Fording: | 1.07m |
| Vertical obstacle: | 0.9m |
| Trench: | 2.34m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | Classified |
| Armor type: | Chobham/Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (passive for commander, gunner and driver) |

The Challenger 2 was developed privately by Vickers Defense Systems. The British Army selected it as a replacement for the Chieftain MBT in 1991. Deliveries started in 1994 of this new tank. The Chieftain's main weapon is a fully stabilized rifled 120mm main gun.





Warrior II British IFV

Crew: 3 + 7 1 x 30mm cannon, 1 x 7.62mm chain gun Armament: Ammunition: 250 x 30mm, 2,000 x 7.62mm 6.34m Length hull: Width: 3.034m Height to turret roof: 2.791m Ground clearance: 0.49m Combat weight: 25,900kg Power-to-weight ratio: 21hp/ton Engine: V-8 diesel developing 550hp at 2,300rpm Maximum road speed: 75km/hr 660km Maximum range: Fuel capacity: 770 liters Fording: 1.3m Vertical obstacle: 0.75m Trench: 2.5m Gradient: 60% Side slope: 40% Armor: Classified Aluminum hull, steel turret and reactive armor Armor type: NBC system: Yes Night vision equipment: Yes, passive for crew

The Warrior first entered service in 1986, and has now finished production. The Warrior II has additional armor protection of passive armor fitted.



Leopard 2A4 German MBT

| Crew: | 4 |
|-------------------------|--|
| Armament: | 1 x 120mm, 1 x 7.62mm MG (coaxial), |
| | 1 x 7.62mm |
| | MG (AA), 2 x 8 smoke grenade launchers |
| Ammunition: | 42 x 120mm, 4,750 x 7.62mm |
| Length gun forward: | 9.668m |
| Length hull: | 7.722m |
| Width: | 3.7m |
| Height to turret roof: | 2.48m |
| Height overall: | 2.787m |
| Ground clearance: | 0.54 front, 0.49 rear |
| Combat weight: | 55,150kg |
| Power-to-weight ratio: | 27.27hp/ton |
| Engine: | MTU MB 873 Ka 501 4-stroke, 12 cylinder |
| - | multi-fuel, turbocharged diesel developing |
| | 1,500hp at 2,600rpm |
| Maximum road speed: | 72km/hr |
| Maximum range: | 550km |
| Fuel capacity: | 1,200 liters |
| Fording: | 1m, 2.25m with preparation, 4m with snorkel |
| Vertical obstacle: | 1.1m |
| Trench: | 3m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | Classified |
| Armor type: | Laminate/Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (passive for commander, gunner and driver) |

The need for a new German MBT was great in the 1970s. especially after cancellation of the joint MBT-70 project with the United States. The Leopard 2 filled this void starting in 1979 and currently still serves with the German army.

Marder II German IFV

TANK PLATOON II

Crew: 3+6 1 x 20mm cannon, 1 x 7.62mm MG (coaxial), 1 x Armament: 6 smoke grenade launchers 1,250 x 20mm, 5,000 x 7.62mm Ammunition: Length hull: 6.79m 3.24m Width: 2.985m Height to turret roof: Ground clearance: 0.44m Combat weight: 29,200kg Power-to-weight ratio: 20.54hp/ton Engine: Diesel, developing 600hp at 2,200rpm Maximum road speed: 75km/hr Maximum range: 520km Fuel capacity: 652 liters Fording: 1.5m, 2m with preparation Vertical obstacle: 1m Trench: 2.5m 60% Gradient: 30% Side slope: Classified Armor: Steel Armor type: NBC system: Yes Night vision equipment: Yes, passive for crew

The Marder II IFV was originally to replace the BMP-1s in German service. The program has fallen under funding problems, though, and may not be produced.



CIS VEHICLES



T-90 MBT Main Battle Tank

| Crew: | 3 |
|-------------------------|--|
| Armament: | 1 x 125mm, 1 x 7.62mm MG (coaxial), 1 x 12.7mm (AA) |
| Ammunition: | 45 x 125mm, 6 x AT-11 (fired through cannon), 1,250 x 7.62mm, 500 x 12.7mm |
| Length gun forward: | 9.24m |
| Length hull: | 6.95m |
| Width: | 4.75m with skirts, 3.6m without |
| Height to turret roof: | 2.37m |
| Ground clearance: | 0.47m |
| Combat weight: | approximately 90,000 lbs. |
| Power-to-weight ratio: | 18.7hp/ton |
| Engine: | 840 hp diesel |
| Maximum road speed: | 70kph |
| Maximum range: | 480km, 550km with long-range tanks |
| Fuel capacity: | 1,000 liters |
| Fording: | 1.8m, 5m with preparation |
| Vertical obstacle: | 0.85m |
| Trench: | 2.8m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | Classified |
| Armor type: | Composite |
| NBC system: | Yes |
| Night vision equipment: | Passive for entire crew |

The T-90E is basically an upgrade of the T-72 containing the improvements of the T-80 MBT, 2nd generation RA, and an ATGM defense suite. The tank retains the diesel engine of the T-72, however. It is also rumored that the T-90 can fire an additional missile type besides the AT-11 with its 5,000m range and 700 mm of armor penetration.



T-80U MBT Main Battle Tank

TANK PLATOON II

| Crew: | 3 |
|-------------------------|---|
| Armament: | 1 x 125mm Main Gun with autoloader, |
| | 1 x 7.62mm MG (coaxial), 1 x 12.7mm MG (AA) |
| Ammunition: | 39 x 125mm, 6 x AT-11 (fired through cannon), |
| | 1,250 x 7.62mm, 500 x 12.7mm |
| Length gun forward: | 9.654m |
| Length hull: | 7.00m |
| Width: | 3.384m |
| Height to turret roof: | 2.202m |
| Ground clearance: | 0.431m |
| Combat weight: | 46,000kg |
| Power-to-weight ratio: | 27.2hp/ton |
| Engine: | 1,250hp gasoline fueled turbine |
| Maximum road speed: | 70kph |
| Maximum range: | 335km, 440km with long-range tanks |
| Fuel capacity: | 1090 liters plus 680 liters external |
| Fording: | 1.8m, 5m with preparation |
| Vertical obstacle: | 1m |
| Trench: | 2.85m |
| Gradient: | 63% |
| Side slope: | 46% |
| Armor: | Classified |
| Armor type: | Composite |
| NBC system: | Yes |
| Night vision equipment: | Passive for entire crew |

First seen by the west in 1989, the T-80 is the follow-on to the T-64, equipped with 2nd generation Reactive Armor and a turbine engine. The T-80U can fire the AT-11 ATGW through its main gun. The AT-11 rides a laser beam and has a range of 5,000m. The main gun is also fully stabilized for fire while on the move.



T-72B1 MBT Main Battle Tank with 1st generation reactive armor

| Crew: | 3 |
|-------------------------|--|
| Armament: | 1 x 125mm, 6 x AT-8 (fired through cannon), 1 x |
| | 7.62mm MG (coaxial), 1 x 12.7mm MG (AA) |
| Ammunition: | 45 x 125mm, 2,000 x 7.62mm, 300 x 12.7mm |
| Length gun forward: | 9.24m |
| Length hull: | 6.95m |
| Width: | 4.75m with skirts, 3.6m without |
| Height to turret roof: | 2.37m |
| Ground clearance: | 0.47m |
| Combat weight: | 44,500kg |
| Power-to-weight ratio: | 18.9hp/ton |
| Engine: | V-46 V-12 diesel developing 840hp at 2,000rpm |
| Maximum road speed: | 80km/hr |
| Maximum range: | 480km, 550km with long-range tanks |
| Fuel capacity: | 1,000 liters |
| Fording: | 1.8m, 5m with preparation |
| Vertical obstacle: | 0.85m |
| Trench: | 2.8m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor type: | Composite/Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (infrared for commander, gunner, and driver) |

The main feature of this tank is the 125mm auto-loading gun with the ability to fire 8 rounds a minute. This version of the T-72 has the ability to fire a laser-guided missile from the main gun.





T-72M1 MBT Main Battle Tank, export version

ANK PLATOON I

| Crew: | 3 |
|-------------------------|--|
| Armament: | 1 x 125mm, 1 x 7.62mm MG (coaxial), |
| | 1 x 12.7mm MG (AA) |
| Ammunition: | 45 x 125mm, 2,000 x 7.62mm, 300 x 12.7mm |
| Length gun forward: | 9.24m |
| Length hull: | 6.95m |
| Width: | 4.75m with skirts, 3.6m without |
| Height to turret roof: | 2.37m |
| Ground clearance: | 0.47m |
| Combat weight: | 45,000kg approximately |
| Power-to-weight ratio: | 18.9hp/ton |
| Engine: | V-46 V-12 diesel developing 840hp at 2,000rpm |
| Maximum road speed: | 80km/hr |
| Maximum range: | 480km, 550km with long-range tanks |
| Fuel capacity: | 1,000 liters |
| Fording: | 1.8m, 5m with preparation |
| Vertical obstacle: | 0.85m |
| Trench: | 2.8m |
| Gradient: | 60% |
| Side slope: | 40% |
| Armor: | Classified |
| Armor type: | Composite/Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (infrared for commander, gunner, and driver) |

This is the export version of the T-72A tank. The M1 has more armor and is upgraded from the standard T-72M export tank. This version of the T-72 does not have the ability to fire a laser-guided missile from the main gun.

211



BMP-3 Infantry Fighting Vehicle with 100mm + 30mm gun

| Crew: | 3 + 7 infantry |
|-------------------------|---|
| Armament: | 1 x 100mm LP, 6 x AT-10 (fired through cannon), |
| | 1 x 30mm cannon (coaxial), 1 x 7.62mm |
| | MG (coaxial), 2 x 7.62mm MG (bow on both |
| | sides), 2 x 3 smoke grenade launchers |
| Ammunition: | 40 x 100mm, 6 x AT-10, 500 x 30mm, |
| | 6,000 x 7.62mm |
| Length: | 7.14m |
| Width: | 3.14m |
| Height to turret roof: | 2.30m |
| Ground clearance: | 510mm but suspension is adjustable for |
| | terrain type |
| Combat weight: | 18,700kg |
| Power-to-weight ratio: | 26.73hp/ton |
| Engine: | 500hp diesel |
| Maximum road speed: | 70km/hr |
| Maximum water speed: | 10km/hr |
| Maximum range: | 600km |
| Fording: | Amphibious |
| Vertical obstacle: | 0.8m |
| Trench: | 2.5m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | Classified |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (passive for commander, driver and gunner) |

First seen in public in 1990, the BMP-3 is a very intelligent design. It combines the High Explosive and Missile firing capability of the 10mm Low Pressure gun with the rate of fire and light anti-armor ability of the 30mm autocannon. Other design features correct most of the problems with the BMP design.



BMP-2 Infantry Fighting Vehicle with 30mm gun

TANK PLATOON I

| Crew: | 3 + 7 |
|-------------------------|--|
| Armament: | 1 x 30mm cannon, 1 x 7.62mm MG (coaxial), 1 x Spandrel ATGW launcher, 2 x 3 smoke |
| | grenade launcher |
| Ammunition: | 500 x 30mm, 2,000 x 7.62mm, 4 x Spandrel |
| | AIGW |
| ength: | 6./35m |
| Vidth: | 3.15m |
| leight to turret roof: | 2.45m |
| Ground clearance: | 0.42m |
| Combat weight: | 14,300kg |
| Power-to-weight ratio: | 20.30hp/ton |
| Engine: | Model UTD-20 6 cylinder diesel developing |
| - | 300hp at 2,600rpm |
| Maximum road speed: | 65km/hr |
| Maximum water speed: | 7km/hr |
| Maximum range: | 600km |
| uel capacity: | 462 liters |
| Fording: | Amphibious |
| /ertical obstacle: | 0.7m |
| Trench: | 2.5m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor type: | Steel |
| IBC system: | Yes |
| Night vision equipment: | Yes (commander, gunner and driver) |
| | |

This Infantry Fighting Vehicle was first seen in public in 1982. It is based on the BMP-1 and improvements include a two-man turret and a new engine.



BMP-1 Infantry Fighting Vehicle with 73mm LP gun

| Crew: | 3 + 8 |
|-------------------------|---|
| Armament: | 1 x 73mm, 1 x 7.62mm MG (coaxial), 1 x Sagger |
| | ATGW launcher |
| Ammunition: | 40 x 73mm, 2,000 x 7.62mm, 1 + 4 Sagger |
| | ATGW |
| Length: | 6.74m |
| Width: | 2.94m |
| Height overall: | 2.15m |
| Ground clearance: | 0.39m |
| Combat weight: | 13,500kg |
| Power-to-weight ratio: | 22.22hp/ton |
| Engine: | Type UTD-20 6 cylinder diesel developing |
| | 300hp at 2,000rpm |
| Maximum road speed: | 65km/hr |
| Maximum water speed: | 7km/hr |
| Maximum range: | 600km |
| Fuel capacity: | 460 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.8m |
| Trench: | 2.2m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | 33mm maximum |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (infrared for commander, gunner and driver) |

This vehicle was developed in the early 1960s to replace the BTR-50 in the Soviet Army. Its anti-tank weapon, the AT-3, had an effective range of 3,000m.

TANK PLATOON II 215



BTR-90 8 wheeled APC

| Crew: | 3 + 7 |
|-------------------------|---|
| Armament: | 1 30mm chain gun turret, 1 x 7.62mm |
| | MG (coaxial), 6 smoke grenade launchers |
| Ammunition: | 500 x 14.5mm, 2,000 x 7.62mm |
| Length: | 7.65m |
| Width: | 2.90m |
| Height to turret roof: | 2.35m |
| Ground clearance: | 0.475m |
| Combat weight: | 13,600kg |
| Power-to-weight ratio: | 19.11hp/ton |
| Engine: | 4 stroke V-8 diesel developing 260hp |
| Maximum road speed: | 90km/hr |
| Maximum water speed: | 9.5km/hr |
| Maximum range: | 600km |
| Fuel capacity: | 290 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.5m |
| Trench: | 2m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | 9mm maximum |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (infrared for commander and driver) |

This replacement to the BTR-80 adds a heavier punch to counter the success of the Bradley IFV's 25mm chain gun.



BTR-80 8 wheeled APC

| Crew: | 3 + 7 |
|-------------------------|---|
| Armament: | 1 x 14.5mm MG, 1 x 7.62mm MG (coaxial), |
| | 6 smoke grenade launchers |
| Ammunition: | 500 x 14.5mm, 2,000 x 7.62mm |
| Length: | 7.65m |
| Width: | 2.90m |
| Height to turret roof: | 2.35m |
| Ground clearance: | 0.475m |
| Combat weight: | 13,600kg |
| Power-to-weight ratio: | 19.11hp/ton |
| Engine: | 4 stroke V-8 diesel developing 260hp |
| Maximum road speed: | 90km/hr |
| Maximum water speed: | 9.5km/hr |
| Maximum range: | 600km |
| Fuel capacity: | 290 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.5m |
| Trench: | 2m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | 9mm maximum |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (infrared for commander and driver) |

First used in the 1980s by the Soviet Army, the BTR-80 was a replacement for the BTR-70 and BTR-60 series of vehicles. Its major improvements included the reduction to one engine, easier ingress and egress, and improved elevation for the main armament.

MITANK PLATOON II 217



MT-LB Tracked APC

Crew: 2 + 111 x 7.62mm MG Armament: Ammunition: 2,500 x 7.62mm 6.45m Length hull: Width: 2.86m Height overall: 1.865m Ground clearance: 0.4m Combat weight: 11,900kg Power-to-weight ratio: 20.16hp/ton Engine: V-8 diesel developing 240hp at 2,100rpm Maximum road speed: 61.5km/hr Maximum water speed: 6km/hr 500km Maximum range: Fuel capacity: 450 liters Amphibious Fording: Vertical obstacle: 0.61m Trench: 2.41m Gradient: 60% 30% Side slope: Armor: 3-10mm Armor type: Steel NBC system: Yes Night vision equipment: Infrared for commander and driver

The MT-LB was developed in the late 1960s and serves in a variety of roles. These roles include APC, artillery tractor, ATGW platform, artillery platform, ambulance, air-defense and others.



BRDM-3 4 wheeled AC with ATGM

| Crew: | 2 or 3 |
|-------------------------|--|
| Armament: | 5 x AT-5 Spandrel ATGW |
| Ammunition: | 10 x AT-5 or 6 x AT-5 plus 8 x AT-4 |
| Length hull: | 5.75m |
| Width: | 2.35m |
| Height overall: | 2.35m |
| Ground clearance: | 0.43m |
| Combat weight: | 7,000kg |
| Power-to-weight ratio: | 20hp/ton |
| Engine: | Petrol V-8 developing 140hp at 3400rpm |
| Maximum road speed: | 100km/hr |
| Maximum water speed: | 10km/hr |
| Maximum range: | 750km |
| Fuel capacity: | 290 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.4m |
| Trench: | 1.25m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | 14mm maximum |
| Armor type: | Steel |
| NBC system: | None |
| Night vision equipment: | None |

First seen in 1977, this upgrade to the BRDM-2 vehicle carries the AT-5 ATGW with the capability to penetrate up to 600mm of armor with its heat warhead.

219



BRDM-2 4 wheeled armored car

| Crew: | 4 |
|-------------------------|---|
| Armament: | 1 x 14.5mm MG (main), 1 x 7.62mm |
| Ammunition: | 500 x 14.5mm, 2,000 x 7.62mm |
| Length: | 5.75m |
| Width: | 2.35m |
| Height: | 2.31m |
| Ground clearance: | 0.43m |
| Combat weight: | 7,000kg |
| Power-to-weight ratio: | 20hp/ton |
| Engine: | GAZ-41 V-8 petrol developing 140hp at |
| - | 3,400rpm |
| Maximum road speed: | 100km/hr |
| Maximum water speed: | 10km/hr |
| Maximum range: | 750km |
| Fuel capacity: | 290 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.4m |
| Trench: | 1.25m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | 7mm maximum |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes (infrared for commander and driver) |

The BRDM-2 boasts better performance, heavier armament, an NBC system and night vision equipment over the BRDM-1. This vehicle entered service in 1966.



2S6M TUNGUSKA Air defense vehicle

220

| Crew: | 6 |
|-------------------------|--------------------------------|
| Armament: | 4 x 30mm cannon, 8 x SA-19 SAM |
| Ammunition: | 1,904 x 30mm, 8 x SA-19 SAM |
| Length: | 7.93m |
| Width: | 3.236m |
| Height to turret roof: | 3.356m |
| Height overall: | 4.021m |
| Combat weight: | 34,000kg |
| Power-to-weight ratio: | 15.29hp/ton |
| Maximum road speed: | 65km/hr |
| Maximum range: | 500km |
| Fording: | 0.80m |
| Vertical obstacle: | 1m |
| Trench: | 2m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes |

The replacement for the ZSU-23/4 Shilka was first observed in 1986. It has a computerized fire control system with a laser range finder and radar. The cannon is effective out to 3,000m and the missiles out to 8km.



ZSU-23/4 Shilka Air defense vehicle

Crew: 4 4 x 23mm cannon Armament: 2,000 by 23mm Ammunition: Length: 6.54m Width: 2.95m Height to turret roof: 2.25m Height overall: 3.8m Ground clearance: 0.4m 20,500kg Combat weight: Power-to-weight ratio: 20hp/ton Engine: Model V-6R, 6-cylinder diesel developing 280hp Maximum road speed: 44km/hr 450km Maximum range: Fuel capacity: 250 liters 1.07m Fording: Vertical obstacle: 1.1m 2.8m Trench: 60% Gradient: Side slope: 30% 15mm maximum Armor: Armor type: Steel Yes NBC system: **Night vision equipment:** Yes for driver only

The ZSU 23-4 Shilka first entered service in 1965. This anti-aircraft system uses radar for tracking and aiming of its weapon system.



ZIL-135 8x8 Cargo truck

| Crew: | 1 + 2 |
|-------------------------|---|
| Armament: | None |
| Length: | 9.275m |
| Width: | 2.8m |
| Height overall: | 2.53m |
| Ground clearance: | 0.58m |
| Combat weight: | 19,000kg (10,000kg max. load) |
| Power-to-weight ratio: | 17.23hp/ton at combat weight |
| Engine: | 2 x 7 liter petrol V-8s developing 180hp at |
| | 3200rpm |
| Maximum road speed: | 70km/hr |
| Fuel capacity: | 768 liters |
| Fording: | 0.58m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | No |
| Night vision equipment: | N/A |

Developed in the 1960s, this vehicle was first used for commercial purposes and later adapted for the military. The unusual design uses two engines, each supplying power to the four wheels on each side of this 8 x 8 vehicle.



ZIL-135 Fuel version 8x8 *Fuel truck*

| Crew: | 1 + 2 |
|-------------------------|---|
| Armament: | None |
| Length: | 9.275m |
| Width: | 2.8m |
| Height overall: | 2.53m |
| Ground clearance: | 0.58m |
| Combat weight: | 19,000kg (10,000kg max load) |
| Power-to-weight ratio: | 17.23hp/ton at combat weight |
| Engine: | 2 x 7 liter petrol V-8s developing 180hp at |
| - | 3200rpm |
| Maximum road speed: | 70km/hr |
| Fuel capacity: | 768 liters |
| Fording: | 0.58m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | No |
| Night vision equipment: | N/A |
| | |

This is the tanker version of the Zil-135.

223



2S19 SPG SP 152mm gun

224

| Crew: | 5 |
|-------------------------|-------------------------------|
| Armament: | 1 x 152mm, 1 x 12.7mm MG (AA) |
| Ammunition: | 50 x 152mm, 300 x 12.7mm |
| Length overall: | 11.917m |
| Width: | 3.38m |
| Height to turret roof: | 2.985m |
| Combat weight: | 42,000kg |
| Power-to-weight ratio: | 20hp/ton |
| Engine: | 840hp diesel |
| Maximum road speed: | 60km/hr |
| Maximum range: | 500km |
| Fording: | 1.2m |
| Vertical obstacle: | 0.5m |
| Trench: | 2.8m |
| Gradient: | 47% |
| Side slope: | 36% |
| Armor: | Classified |
| Armor type: | Steel/Advanced |
| NBC system: | Yes |
| Night vision equipment: | Yes (passive) |
| | |

First seen in 1990, this artillery platform uses the chassis of a T-80 tank. The weapon system has a range of 24,700m and with extended range projectiles can reach 40,000m. With the auto-loader, the 2S19 can fire eight rounds a minute.

4

FROG LAUNCHER large ballistic missile launch vehicle

ANK PLATOON I

Crew:

| Armament: | FROG-7a or FROG-7b missile of nuclear, chemical, conventional HE, and cluster munitions warhead types |
|---------------------------|---|
| Ammunition: | One missile |
| Length of missile: | 9.1m (7a), 9.5m (7b) |
| Length hull: | 10.75m |
| Width: | 2.8m |
| Height: | 3.66m |
| Combat weight: | 23,000kg |
| Maximum range of missile: | 70,000m |
| Fording: | 0.58m |
| Vertical obstacle: | 0.685m |
| Trench: | 2.63m |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | No |

The FROG-7 (Free Rocket Over Ground) system is designed to engage targets in the enemies rear and normally operates at ranges from 8 to 18km behind the front lines.





BM9A52 MLRS Multiple launch rocket system

| Crew: | 4 |
|---------------------|--|
| Armament: | 12 x 300mm 9M55K artillery rocket launchers |
| Ammunition: | 12 x 300mm rockets with warhead containing 72 HE-fragmentation submunitions each |
| Length of missile: | 7.6m |
| Length hull: | 12.1m |
| Width: | 3.05m |
| Height: | 3.05m |
| Combat weight: | 43,700kg |
| Engine: | Diesel |
| Maximum road speed: | 60km/hr |
| Maximum range: | 850km |
| Fording: | 1.1m |
| Armor: | None |
| Armor type: | N/A |
| NBC system: | None |

The CIS equivalent of America's MLRS, the Smerch (Sandstorm) can launch its 12 missiles in 38 to 40 seconds. The range of the missiles or rockets is from 20,000 to 70,000m.



BM-24 MLRS Multiple Launch Rocket System

Crew: 6 Armament: 40 x 122.4mm rocket launchers Ammunition: 40 x 122.4mm rockets Length hull: 7.35m Width: 2.69m Height: 2.85m Combat weight: 13,700kg Power-to-weight ratio: 12hp/ton Engine: Petrol V-8 developing 180hp at 3200rpm 80km/hr Maximum road speed: Maximum range: 1,000km 360 liters Fuel capacity: Fording: 1.5m Vertical obstacle: 0.65m 0.875m Trench: Gradient: 60% Armor: None N/A Armor type: NBC system: None

The Bm-24 is an older MLRS system and can trace its roots to the original Stalin's Organ of WWII. Today the BM-24 is exported to many nations. The BM-24 can launch its 40 missiles in 20 seconds and reload in approximately 8 minutes.

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ANK PLATOON

SA-13 Self-Propelled SAM launcher

| Crew: | 3 |
|-------------------------|--------------------------------------|
| Armament: | 4 x SA-13 |
| Ammunition: | 21 x SA-13 |
| Length: | 6.6m |
| Width: | 2.85m |
| Height overall: | 3.8m in firing position, 2.3m stowed |
| Ground clearance: | 0.4m |
| Combat weight: | 12,300kg |
| Power-to-weight ratio: | 19.52hp/ton |
| Engine: | YaMZ-238V diesel developing 240hp at |
| | 2,100rpm |
| Maximum road speed: | 61.5km/hr |
| Maximum range: | 500km |
| Fuel capacity: | 450 liters |
| Fording: | Amphibious |
| Vertical obstacle: | 0.7m |
| Trench: | 2.7m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor: | 7mm maximum |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Infrared for driver |
| | |

First seen in the 1970s, the SA-13 Gopher is based on the MTLB chassis. The missile has an engagement range of 800–5,000m at altitudes from 10–4,000m.



SA-15 Self-Propelled SAM launcher

| Crew: | 3 |
|-------------------------|-------------------------------|
| Armament: | SA-15 Surface to Air Missiles |
| Ammunition: | 8 x SA-15 |
| Length: | 7.93m |
| Width: | 3.236m |
| Combat weight: | 34,000kg estimated |
| Power-to-weight ratio: | 15.29hp/ton |
| Maximum road speed: | 65km/hr |
| Maximum range: | 500km |
| Fording: | 0.80m |
| Vertical obstacle: | 1m |
| Trench: | 2m |
| Gradient: | 60% |
| Side slope: | 30% |
| Armor type: | Steel |
| NBC system: | Yes |
| Night vision equipment: | Yes |

The SA-15 system provides air defense at ranges less than 12,000m and altitudes less than 6,000m. Developed during the 1980s, this system can track the 10 most dangerous targets simultaneously and lock on two targets.



CIS AIRCRAFT



Mi-24F HIND-F Heavy Attack Helicopter

| Length: Width: | 70 ft. 0.5 in. 56 ft. 9.25 in. rotor, 5 ft. 7 in. fuselage without pylons |
|-------------------|---|
| Height: | 21 ft. 4 in. |
| Maximum weight: | 12,000 kg |
| Maximum speed: | 180 kts. |
| Range: | 270 nautical miles, 540 miles with external tanks |
| Armament: | Twin barrel 23mm cannon with 450 rounds of ammo, weapons pylons can accommodate gun pods, anti-tank missiles, air-to-air missiles, unguided rockets, conventional bombs, flares and mine dispensers |
| Accommodation: | 3 + 8 infantry troops |

The USSR's first fire support helicopter, the Mi-24 entered service in the late 1960s. The Hind-F version started production in the late 1970s and is the current version in service.

TANK PLATOON II



Mi-28 HAVOC Light Attack helicopter

| Length: | 55 ft. 9.75 in. not including rotors |
|-----------------|---|
| Width: | 6 ft. 1 in. fuselage, 56 ft. 5 in. rotor |
| Height: | 15 ft. 5 in. |
| Maximum weight: | 25,705 lbs. |
| Maximum speed: | 162 kts. |
| Range: | 248 nautical miles |
| Armament: | 30mm cannon with 250 rounds, 16 AT-6 anti-tank missiles and 40 unguided rockets (typical) |
| Accommodation: | Pilot/Navigator-Gunner |

Accommodation:

Development of this new attack helicopter started in 1980. The current version, the N model, should enter service this year with its night and all weather capability.



Ka-50 HOKUM Light Attack helicopter

| Length: | 52 ft. 6 in. with rotors turning |
|-----------------|---|
| Width: | 47 ft. 7 in. rotors |
| Height: | 16 ft. 2 in. with rotors turning |
| Maximum weight: | 23,810 lbs. |
| Maximum speed: | 167 kts. |
| Range: | 135 nautical miles |
| Armament: | 30mm cannon with 280 rounds of ammo, (typical) up to 12 AT-12 missiles and/or up to 80 80mm unguided rockets. Provisions to also carry gun pods, air-to-air missiles, rocket packs, FAB-500 bombs and dispenser weapons |
| Accommodation: | Pilot |

This attack helicopter is in direct competition with the Mi-28 for the Soviet market. It is currently in small-scale production.

ANK PLATOON I 233



MI-8 HIP Heavy Transport Helicopter

| Length: | 83 ft. 2 in. with rotors turning |
|-----------------|--|
| Width: | 69 ft. 10.25in. rotor, 8 ft. 2.5 in. fuselage |
| Height: | 18 ft. 6.5 in. |
| Maximum weight: | 28,660 lbs. |
| Maximum speed: | 140 kts. |
| Range: | 267 nautical miles |
| Armament: | Varies according to version, but mainly rockets anti-tank missiles, and MGs |
| Accommodation: | 3 + 26 |

A

Developed in the early 1960s, the HIP has undergone constant upgrade and improvements. The most current version is the MI-17, with more powerful engines. This helicopter is the standard transport helicopter in Russian service.



SU-25 FROGFOOT Ground attack aircraft

| Length: | 50 ft. 4.5 in. |
|-----------------|--|
| Width: | 47 ft. 7.75 in. |
| Height: | 17 ft. 0.75 in. |
| Maximum weight: | 42,990 lbs. |
| Maximum speed: | 512 kts. |
| Range: | 378 nautical miles |
| Armament: | Twin-barrel 30mm cannon with 200 rounds, 16 AT-9 anti-tank missiles, AA-8 air-to-air missiles and various other weaponry in the Russian inventory |
| Accommodation: | Pilot |

This anti-tank aircraft originally entered service with the Soviet Union in 1978. The current version of this aircraft is the SU-25T, which entered service in 1993 with improved survivability in an anti-aircraft environment.

APPENDIX B: WEAPONS

TANK PLATOON II

These data sections below provide basic unclassified information on the major weapons systems used by vehicles in the game. The name lists the type of weapon and model number. There is a separate entry for each ammunition type.

Platforms indicates which vehicles are armed with the weapon.

Muzzle Velocity describes how fast the shell is moving when it leaves the gun. Missiles and rockets do not have a muzzle velocity; instead, they have an **Average Flight Speed**.

Penetration is an indication of how much armor the round can go through. For kinetic energy weapons, the number given is the value at normal battlesight ranges, or approximately 1,500 to 2,000 meters. Beyond this range, their penetration begins to fall off radically. HEAT rounds, on the other hand, have the same penetration at all ranges and are less dependent on velocity. Penetration is the most likely information to be classified, and in many cases, the information is estimated based on other data. Penetration is listed in the number of millimeters of Rolled Homogenous Armor (RHA) the round can penetrate at optimum striking angles.

Rate of Fire is the speed at which automatic weapons can fire. This information is listed as the number of rounds the gun could fire in one minute (rpm).

Guidance describes the type of system used in guided missiles. The types of guidance systems are described in the text of the manual.

GUNS

AMERICAN AND NATO

M-256 120mm Smoothbore Cannon

 Platform:
 M1A2 Abrams, Leopard IIA4

 M-829A1 APFSDS (SABOT)

 Penetration:
 986mm

 Muzzle Velocity:
 1700 meters per second

M-830 HEAT

Penetration:475mmMuzzle Velocity:1140 meters per second

GAU-12/U EQUALIZER 25MM CANNON

Platform: AV-8B Harrier II, M2 Bradley ADV, LAVADV

M-919 APFSDS

TANK PLATOON II

Penetration:127mmMuzzle Velocity:1420 meters per secondRate of Fire:3600 rounds per minute maximum

M-792 HEI

Penetration:18mmMuzzle Velocity:1100 meters per secondRate of Fire:3600 rounds per minute maximum

M242 BUSHMASTER 25MM CHAIN GUN

Platform: M2A3 and M3A3 Bradley, LAV25

M-919 APFSDS

Penetration:127mmMuzzle Velocity:1420 meters per secondRate of Fire:200 rounds per minute maximum

M-792 HEI

Penetration:18mmMuzzle Velocity:1100 meters per secondRate of Fire:200 rounds per minute maximum

M197 20mm Three Barreled Cannon

Platform: AH-1W Cobra

PGU-28B SAPHEI

Penetration:127mmMuzzle Velocity:1200 meters per secondRate of Fire:3000 rounds per minute

M2HB .50cal Heavy Machine Gun

Platform: M1A2 Abrams, HMMWV, M113A3

.50cal SLAP

Penetration: 76mm Muzzle Velocity: 1200 meters per second

.50cal APHE

Penetration: 51mm Muzzle Velocity: 1200 meters per second

M-830A1 MPAT

Penetration: 300mm Muzzle Velocity: 1140 meters per second TANK PLATOON

M-943 STAFF

Penetration:203mmMuzzle Velocity:1140 meters per secondSpecial:Top Attack

L30 120MM RIFLED CANNON

Platform: Challenger II

L-26 APFSDS (SABOT)

Penetration: 986mm Muzzle Velocity: 1950 meters per second

L-31 HESH

Penetration:475mmMuzzle Velocity:1250 meters per second

GAU-8/A AVENGER 30MM CANNON

A-10 Thunderbolt

PGU-14B API

Platform:

Penetration:250mmMuzzle Velocity:1420 meters per secondRate of Fire:4200 rounds per minute maximum

PGU-13B HEI

Penetration:50mmMuzzle Velocity:1100 meters per secondRate of Fire:4200 rounds per minute maximum

M230 30mm Chain Cannon

Platform: AH-64 Apache

M789 HEDP

Penetration:250mmMuzzle Velocity:805 meters per secondRate of Fire:625 rounds per minute maximum

M799 HEI

Penetration:50mmMuzzle Velocity:805 meters per secondRate of Fire:225 rounds per minute maximum

M240 7.62mm MACHINE GUN

Ball Ammunition Penetration: 15

Muzzle Velocity: 1000 meters per second

RUSSIAN

2A46 & 2A46M1 125MM SMOOTH BORE CANNON Platform: T90E, T80U, T72B1, T72M1 **3BVM13 APFSDS** Penetration: 250mm Muzzle Velocity: 800 meters per second **3VBM8 APDS** Penetration: 150mm Muzzle Velocity: 1800 meters per second **3VBK17 HEAT** Penetration: 475 Muzzle Velocity: 905 meters per second **3VOF36 HE** Muzzle Velocity: 850 meters per second 2A70 100mm Low Pressure Gun Platform: BMP-3 **ZUOF-17 HE/FRAG**

Muzzle Velocity: 250 meters per second

2A28 73mm Low Pressure Gun

Platform: BMP-1

PG-9 HEAT

Penetration: 300mm Muzzle Velocity: 700 meters per second

2A42 30MM CANNON

Platform:

BMP-2, BMP-3, BTR-90, Mi-28 Havoc, Ka-50 Hokum

30mm API

Penetration:84mmMuzzle Velocity:970 meters per secondRate of Fire:800 rounds per minute

30mm HEI

Penetration:35mmMuzzle Velocity:970 meters per secondRate of Fire:800 rounds per minute

AZP-23 23MM CANNON

Platform: ZSU-23/4, ZPU-23

23mm AP

Penetration:76Muzzle Velocity:970 meters per secondRate of Fire:800 rounds per barrel per minute

23mm HE

Penetration:25Muzzle Velocity:970 meters per secondRate of Fire:800 rounds per barrel per minute

2A38M 30MM AUTO CANNON

Platform: 22S6 Tanguska, Mi-24F Hind

30mm APHE

Penetration:250mmMuzzle Velocity:970 meters per secondRate of Fire:2000 rounds per barrel per minute

30mm API

Penetration:155mmMuzzle Velocity:970 meters per secondRate of Fire:2000 rounds per barrel per minute



12.7MM NSVT HEAVY MACHINE GUN

Platform: T90E, T80U, T72B1, T72M1, BTR80, MT-LB, BRDM2

12.7mm Ball

Penetration: 30mm Muzzle Velocity: 845 meters per second

7.62MM PKT MACHINE GUN

7.62mm Ball Penetration: 15mm Muzzle Velocity: 825 meters per second

MISSILES

AMERICAN AND NATO

AT4 DISPOSABLE ANTI-TANK ROCKET

Range:300 metersPenetration:508mmAverage Speed:290 meters per second

JAVELIN AAWS/M

| Range: | 2500 meters |
|----------------|----------------------------|
| Penetration: | 737mm |
| Average Speed: | 290 meters per second |
| Guidance: | Thermal fire and forget |
| Special: | Top attack, tandem warhead |

M220A1 TOW 2B

| Range: | 3750 meters |
|----------------|-----------------------|
| Penetration: | 900mm |
| Average Speed: | 200 meters per second |
| Guidance: | Wire guided |
| Special: | Tandem warhead |

AGM114K HELLFIRE 2

Range:8000 metersPenetration:1200mmAverage Speed:350 meters per secondGuidance:Laser homingSpecial:Top attack, tandem warhead

LONGBOW HELLFIRE 2

| Range: | 8000 meters |
|----------------|------------------------------|
| Penetration: | 1200mm |
| Average Speed: | 350 meters per second |
| Guidance: | Active millimeter wave radar |
| Special: | Top attack, tandem warhead |

AGM-65G MAVERICK

| Range: | 25,000 meters |
|----------------|-------------------------|
| Penetration: | -2000mm |
| Average Speed: | 350 meters per second |
| Guidance: | Imaging infrared seeker |
| | |

FIM-92C STINGER SAM

Range:4500 metersAverage Speed:500 meters per secondGuidance:Infrared seeker

RUSSIAN

9M14 MALYUTKA (AT3 SAGGER) ATGM

Range:3000 metersPenetration:457mmAverage Speed:200 meters per secondGuidance:Wire guided

AT4 SPIGOT ATGM

Range:2000 metersPenetration:610mmAverage Speed:200 meters per secondGuidance:Wire guided

AT5 SPANDREL ATGM

Range:3000 metersPenetration:610mmAverage Speed:200 meters per secondGuidance:Wire guided

9M119 Reflecks (AT11 SNIPER) ATGM

| Range: | 3500 meters |
|----------------|-----------------------|
| Penetration: | 810mm |
| Average Speed: | 300 meters per second |
| Guidance: | Laser guided |
| Special: | Tandem Warhead |

9M37M Strella 10 (SA13 Gopher) SAM

Range:6000 metersAverage Speed:500 meters per secondGuidance:Infrared seeking

SA15 GAUNTLET (RUSSIAN DESIGNATION UNKNOWN) SAM

Range:8000 metersAverage Speed:500 meters per secondGuidance:Radar command guided

19M39 IGLA-1 (SA16 GIMLET) SAM

Range:4000 metersAverage Speed:350 meters per secondGuidance:Infrared seeking

9M311 (SA19 GRISSOM) SAM

Range:8000metersAverage Speed:600 meters per secondGuidance:Infrared seeking

9M114 KOKON (AT6 SPIRAL) ATGM

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Range:4000 metersPenetration:711mmAverage Speed:200 meters per secondGuidance:Wire guidedSpecial:Tandem warhead

TANK PLATOON

9M113 METIS (AT7 SAXHORN) ATGM

Range:3000 metersPenetration:600mmAverage Speed:200 meters per secondGuidance:Wire guidedSpecial:Tandem warhead

9M112 KOBRA (AT8 SONGSTER) ATGM

| Range: | 3500 meters |
|----------------|-----------------------|
| Penetration: | 860mm |
| Average Speed: | 300 meters per second |
| Guidance: | Laser guided |
| Special: | Tandem warhead |

9M120 VIKHR (AT9 DRAKON) ATGM

Range:6000 metersPenetration:925mmAverage Speed:300 meters per secondGuidance:Laser guidedSpecial:Tandem warhead

9M117 SVIR (AT10 BASTION) ATGM

Range:3000 metersPenetration:850mmAverage Speed:250 meters per secondGuidance:Laser guidedSpecial:Tandem Warhead

TANK PLATOON II



APPENDIX C: PLAYER UNIT ORGANIZATIONS

| Unit Size Symbol Keys | | | | |
|-----------------------|-----------------------------------|-----------|---|--|
| • | Squad | Х | Brigade | |
| •• | Section | ХХ | Division | |
| ••• | Platoon (Troop/Cavalry) | Ш | Company Team (Company-sized Battlegroup) | |
| I | Company (Battery if artillery. | ΓΠ | Battalion Task Force (Battalion-sized Battlegroup) | |
| Squadron if Cavairy) | [X] | Battalion | | |
| II | Battalion | 1+1 | Regiment | |
| | Regiment | | 5 | |

| Unit Symbol Keys | | |
|--|--------------------------|--|
| Armored | Infantry | Headquarters Combined with any type |
| Mechanized Infantry (IFV) | Self-Propelled Mortar | Attack Helicopter |
| Mechanized Infantry (APC) | Self-Propelled Artillery | Scout Helicopter |
| Armored Cavalry/ Armored Reconnassiance | Armored Rocket Artillery | Air Cavalry |
| Light Scout Reconnassiance | Rocket Artillery | Transport Helicopter |
| Armored Tank Destroyer | Air Defense | Close Support Aircraft |
| Tank Destroyer | | Reconnassiance Drone |





As you are a platoon leader in *M1 Tank Platoon II*, the organization of your Division or Brigade has little effect on the battlefield. What matters is the organization of your company and, to a lesser degree, your battalion. For these reasons, this section concentrates on the lower-level organizations which directly affect your platoon. In the same manner, details of a unit's support vehicles are not included, since these do not closely follow your combat vehicles into the line.

In addition to the basic tank platoon, you may also have one or more additional platoons of several types assigned to your unit. While you cannot "jump into" any of these other platoons, they are under your direction and control. These attachments are divided into three sections, depending on your branch of service: Armor, Cavalry, or Marines.

M1A2 Platoon

Your platoon is an M1A2 Main Battle Tank platoon. This platoon structure is common throughout the U.S. armed forces and provides the basic building block for your team in every battle. Each M1 platoon consists of two sections,

TANK PLATOON

each with two M1A2 Abrams main battle tanks (MBTs).

U.S. ARMY ARMORED REGIMENTS

The battalions of the Armored Regiments are the standard armored forces in all of the standard Armored and Mechanized divisions. Under the Air Land Battle Doctrine, few combat units fight as "pure" units—all tanks or all infantry. Instead, units are cross-attached between headquarters units at all levels from battalion through platoon.

In the field, armored and mechanized battalions "cross attach" one or more companies, forming what the Army terms "battalion task forces." The diagram shows a typical mechanized battalion task force. An armored task force would normally have two tank companies and a single mechanized company. The only other exception is that armored battalions do not have an integral tank destroyer platoon.



In this diagram, the mechanized battalion has traded one of its mechanized companies for an armored company from another battalion. Cross-attachment also works between companies. Notice that the armored company has traded one of its tank platoons to an infantry company in return for a mechanized infantry platoon. The Army calls a cross-attached company a "team."

The additional combat units in a battalion—the mortars, tank destroyers, reconnaissance units, air defense and engineers—are shown together in their own platoons or batteries for clarity. In real combat, these units are split up into sections or even single vehicles and attached to the company or team the battalion commander believes will need them the most, or they are held as part of the task force reserve.

An alternative task force organization might have a cross-attached company given to it, and yet not give up one of its own platoons. The task force commander could then divide the acquired "fourth" company, giving one platoon to each of its three original companies. The mechanized companies would then have three mechanized platoons and a tank platoon. In an armored task force, the tank companies would then have three tank and one mechanized platoons. This makes every company a potent striking force, with its own infantry and tank component.

That has describes the most common task force organizations. In combat, almost any combination of platoons can be found. Company commanders form special teams to carry out each mission, with the best mix of forces to accomplish the job. Of course, in combat this often means you are given the only units available. This is where you and your platoon come in.

The Battalion Task Force and the Company Team are the tactical maneuver elements of the Army. The combat platoons and sections are the building blocks for these commands. Let's look at each of these.



TANK PLATOON III

M1A2 Platoon

This is a standard tank platoon, consisting of two sections, each with two M1A2 Abrams main battle tanks. You cannot occupy crew stations in attached tank platoons.





Mechanized Infantry (IFV) Platoon

This is a platoon of infantry mounted in M2A2 Bradley Infantry Fighting vehicles. The platoon consists of four vehicles with infantry.



Mechanized Infantry Platoon

This is a platoon of infantry mounted M113A3 Armored Personnel Carriers. The platoon consists of four vehicles with infantry.



Light Anti-Tank Platoon

This is a light anti-tank section of two HMMWVs with TOW2 launchers.



Heavy Anti-Tank Section

This is a heavy anti-tank section consisting of two M901 "Cherry Picker" TOW vehicles.



Light Air Defense Section

This is a light anti-aircraft section consisting of two HMMWV Avenger anti-aircraft vehicles.



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Heavy Air Defense Section

This is a heavy anti-aircraft section consisting of two Bradley IFVs with the Blazer ADV turret (available in *Difficult* level games only).

Mortar Section

This is a Mortar section of M106 Mortar carriers, based on the M113 chassis.

CAVALRY & ARMORED CAVALRY REGIMENTS

The other type of armored force in the U.S. Army is the Armored Cavalry Regiment (ACR). These units provide both a powerful reconnaissance force and one of the most compact combat units in the Army. Cavalry units are designed as offensive strike forces and defensive covering forces.



Cavalry units maintain a high *esprit de corps* and are among some of the most famous units in the U.S. military. As a part of this, the cavalry has its own names for the different command levels, dating back to the days of the horse cavalry. While platoons are still platoons, you will not find a company or a battalion in a cavalry unit. The cavalry call their companies "troops" and their battalions "squadrons." Cavalry units do not practice cross-attachments with the religious fervor of the rest of the Army. They don't have to. The cavalry squadron and troop are integrated all-arms units in their own right.
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Light Anti-Tank Platoon This is a light anti-tank se

This is a light anti-tank section of two HMMWVs with TOW2 launchers.



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TANK PLATOON II

Heavy Anti-Tank Section

This is a heavy anti-tank section consisting of two M901 "Cherry Picker" TOW vehicles.



Light Air Defense Section

This is a light anti-aircraft section consisting of two HMMWV Avenger anti-aircraft vehicles.



Heavy Air Defense Section

This is a heavy anti-aircraft section consisting of two Bradley IFVs with the Blazer ADV turret.



Mortar Section

This is a Mortar section of M106 Mortar carriers, based on the M113 chassis.

SUPPORT UNITS

The vehicles of your platoons represent only part of the firepower available to an all-arms unit. In addition, you can have artillery and air support assigned to you for the mission.

Artillery support represents the indirect fire of artillery batteries far from the actual operation area of your unit. The Army depends on three types of artillery for the bulk of its fire support.

The diagram shows an armored cavalry squadron. It contains a headquarters troop, three cavalry troops, a tank company, and an artillery battery. Each cavalry troop contains five platoons instead of the normal three. The 1st and 3rd platoons are Scout platoons and contain six M3 CFVs. They can be deployed into sections of two or three vehicles as needed. In some cavalry units, the scouts use HMMWVs instead of the M3. The 2nd and 4th platoons are tank platoons, organized like their army counterparts. The 5th platoon is a section of M106 mortar carriers, giving the troop commander his own indirect fire support.

TANK PLATOON

The tank company is a standard armored unit. It is never called a troop. Its platoons can be attached to any of the cavalry troops, but they are usually held together as the squadron commander's central reserve. The Howitzer battery is equipped with M109s and provides the squadron commander with a powerful support unit of his own. The combination of a tank company and the howitzer battery give the cavalry squadron commander the most powerful reserve force in the Army under his command with three troops on line.

Lets look at the platoons that make up these units.



M1A2 Platoon

This is a standard tank platoon, consisting of two sections, each with two M1A2 Abrams main battle tanks. You cannot occupy crew stations in attached tank platoons.



Armored Scout Section

A section of three M3A2 Bradley Cavalry Fighting Vehicles. The M3 carries additional ammo and a two man dismount scout team.



Scout Section

A section of scouts, consisting of four HMMWVs. The section contains two HMMWVs with a M2 .50 cal MG and two HMMWVs with a M19 automatic grenade launcher.

Mortar Batteries

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Mortar batteries are usually controlled from the company and battalion level. These have a relatively small warhead, but offset this by being most flexible and having a quick response time. The bulk of the Army's mortar batteries in mechanized and armored units are equipped with the M106 mortar carrier based on the old dependable M113 chassis.

TANK PLATOON

Howitzer Batteries

The artillery batteries form the heart of the Army's indirect fire arsenal. Most mechanized and armored units should soon be equipped with the new M109A6 Paladin self-propelled gun. The M109's can use both conventional HE rounds or dual-purpose improved conventional munitions, (DPICM) rounds. The DPICM rounds contain a mix of anti-armor and anti-personnel or dual purpose bomblets.

Multiple Launch Rocket Systems

The MLRS batteries have been called the commander's personnel shotgun. They allow a single launch vehicle to saturate an area with thousands of bomblets in seconds. During the Gulf War, Iraqi soldiers called MLRS strikes "steel rain."

AIR SUPPORT

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Attack Helicopter Platoon

A standard Attack helicopter flight consisting of three AH-64A Apache attack helicopters, or three AH-64D Longbow Apache attack helicopters. Only one of the three AH-64Ds is equipped with the Longbow radar. The other two carry a mix of MMR Hellfires and laser-guided Hellfires.



Close Support Aircraft

Close Support Aircraft consisting of a section of two A-10 Thunderbolt aircraft.



TANK PLATOON II

Air Cavalry Platoon

An Air Cavalry unit consisting of one OH-1D Kiowa Warrior and two AH-64A Apache attack helicopters.



Advanced Air Cavalry Platoon

Air Cavalry unit consisting of three RH-66 Comanche Scout/Light Attack Helicopters.

U.S. MARINE CORPS

The Marine tank battalions rarely fight in company or battalion strength. Their platoons are detached and assigned to provide armored support to the largely non-mechanized Marine Infantry Units. Likewise, the other armored and mechanized units are assigned as needed to normal infantry units to provide mobility and firepower.



Light Reconnaissance Platoon

A Marine light armored vehicle platoon consisting of four LAV-25s with 4 man fire teams on board.



Heavy Anti-Tank Section

A Marine light armored vehicle platoon consisting of two LAV-ATs, LAV hulls with a "Cherry Picker" TOW launcher (from the M-901).



HMMWV Heavy Weapon Platoon

A heavy weapon platoon consisting of four HMMWVs, two mounting a M2 .50cal MG and two with a M19 automatic grenade launcher.





HMMWV Support Section

A support section consisting of three HMMWVs with TOW launchers.



APC Platoon

An infantry platoon mounted in AAV-7A1 APCs.



Light Air Defense Section

This is a light anti-aircraft section consisting of two HMMWV Avenger anti-aircraft vehicles.



Air Defense Section

This is a heavy anti-aircraft section consisting of two LAVs with the Blazer ADV turret.

Mortar Section

This is a Mortar section of LAV-M Mortar carriers.

ARTILLERY SUPPORT

The Marines compensate for their lack of organic heavy units with greater air support and artillery. Unlike those in the Army, most of the Marines' mortars and artillery are not self-propelled.

Mortar Batteries

The Marines like mortars. Mortar sections or batteries are found in the platoon, company, and battalion level. These have a relatively small warhead, but offset this by being the most flexible and having the quickest response time.

Howitzer Batteries

Like the M109, Marine howitzers can use both conventional HE rounds or dual-purpose improved conventional munitions, (DPICM) rounds. The DPICM rounds contain a mix of anti-armor and anti-personnel or dual purpose bomblets.

Naval Gunfire Support

In those areas within range of the ocean, the Marines can depend on the guns of the fleet to give them all the support they can. Naval gunfire has developed into some of the most accurate long-range fire in the world.

AIR SUPPORT

Every Marine task force is a self contained all-arms force, equipped with its own dedicated air units, both rotary and fixed wing. Marine pilots are the best "mud movers" in the world, and each one is also a qualified infantryman.

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|--------|-------|
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Attack Helicopter Section

A section of two Marine AH-1W Super Cobra attack helicopters. While the Marine attack helicopter is less capable than the Apache, the Marines are more likely to receive helo support.



Close Support Aircraft

Close Support Aircraft are a section of two AV-8B Harrier aircraft.



APPENDIX D: OPFOR UNIT ORGANIZATIONS

The demise of the Soviet Union revealed that the specter of the Red Army was just that, a ghost. It has also required the U.S. to develop plans to combat multiple opposing nations—and the Opposing Force (OPFOR) concept. Like the **Player Unit Organization** appendix, this section concentrates on the platoon, company, and battalion organization levels. While many of the higher level organizations are being drastically reorganized into all-arms forces, all of the OPFOR nations depicted in this game currently use the old Soviet organization at the battalion level and below.

BATTALION ORGANIZATIONS

Most OPFOR battalions are either Tank battalions or Motor rifle battalions. There are two basic organizations currently in use in these countries, the old three-company "pure" organizations and the four-company all-arms organizations.



Pure tank battalions are spare, lean organizations with just three companies of tanks. Battalions do not regularly intermix to the same degree as American units. This results in the theoretically powerful tank battalion having no all-arms support. Ten years ago, this was not a major problem. Although weak on a low-level tactical scale, the massed armor of tank battalions would be decisive when used en masse. Today, few pure tank battalions are still in existence; they have been replaced by the fourcompany all-arms tank battalion.

TANK PLATOON II

Unlike the tank battalion, Russian motor rifle battalions have a full assortment of appropriate supporting arms. The organization shown here applies both to BMP and BTR battalions, with one exception. Only the BTR battalions have an anti-tank platoon. This is a sensible provision, since the BTRs lack ATGM armament, while BMPs have them built in.



The All Arms battalion is a four-company unit. The tank battalion consists of three tank companies and a motor rifle company. The motor rifle battalion would conversely has three motor rifle companies and a tank company. In addition to the four combat companies, both battalions also have numerous support units assigned at the battalion level.

The forth company in the battalion can either fight as a separate unit, or its platoons can be assigned to the other three companies of the battalion, forming a reinforced company. This reinforced company is equivalent to the American "team" concept.

The supporting units of the battalions—the mortars, tank destroyers, reconnaissance units, air defense, and engineers—are shown together in their own platoons or batteries for clarity in the diagram. In real combat, these units are split up into sections or even single vehicles and attached to the company the battalion commander believes will need them the most. The air defense units are almost certainly distributed to the companies and attached to the company headquarters.

COMPANY ORGANIZATIONS



Tank Company

The Russian tank company organization today is the same as the one used during World War II: three tanks per platoon, and three platoons and a command tank make the company. Some battalions with older equipment have four tank platoons.

TANK PLATOON

Tank Company (Reinforced)

The unit consists of three tank platoons of three vehicles, HQ section of a single Command Vehicle, and a motor rifle platoon of three vehicles and their infantry.



TANK PLATOON II



The motor rifle company is a miniature motor rifle battalion. This is an infantry company in BMP IFVs. The unit consists of three platoons of three vehicles (with infantry) and an HQ Section.





IFV Company (Reinforced)

This is an infantry company in infantry fighting vehicles, with an attached tank platoon. The unit consists of three infantry platoons of three vehicles (with infantry), a HQ section.

Motor Rifle Company

The BTR equipped motor rifle company is very similar to the BMP company. The BTR company does have several internal differences. The company usually has a BRDM-3 attached to help

offset the lack of ATGMs. Each platoon command vehicle transports an AT-4 team. These are used dismounted only. On the defensive the teams fan out, one per platoon. On the attack they follow along behind, ready to dismount if enemy tanks appear.

Although the BTR is wheeled and therefore less mobile cross-country, a BTR company is probably better at rough-terrain fighting. This is because the squad cannot really fight from their vehicle. In combat they immediately dismount and fight afoot, including the squad leader. In fact, because dismounting under fire is hard from the BTR-90 or -80, they frequently dismount before combat. Only a driver and gunner remain aboard the vehicle. The overall result is a stronger, better-led, more self-reliant group of men afoot. This is the right prescription in dense forests, mountains and urban areas—places where vehicles cannot travel. APPENDICES



Motor Rifle Company (Reinforced)

This is an infantry company in Tracked or Wheeled armored personnel carriers (which lack the inherent firepower of an IFV mounted unit) with an attached tank platoon. The unit consists of three

infantry platoons of three vehicles (with infantry), an HQ section of a single Command Vehicle, and a tank platoon of three or four tanks.



Regimental Reconnaissance Company

This unit is a regimental asset commonly used as both an advance guard unit on the march and as an intelligence gathering unit in combat. The Recon Company consists of one platoon of BMPs and one of BRDM recon cars.

BASIC PLATOON ORGANIZATIONS



Heavy MBT Platoon

A platoon of the most modern MBTs in the OPFOR arsenal. It consists of three T-90 or T-80 MBTs.



MBT Platoon

A platoon of older T-72 MBTs. It consists of four T-72B1 or T-72M1 MBTs.



Tank HQ Section

The HQ section of a tank company. The MBT is of the same type as the tank platoons in the company. The Artillery spotter is a BRDM-2. The air defense units are either 2S6 Tanguskas or ZSU-23/4 Shilkas.

TANK PLATOON III

IFV Platoon

A platoon of motor rifle infantry mounted in BMP-3, BMP-2, or BMP-1 Infantry Fighting Vehicles.



IFV HQ Section

The HQ section of an IFV company. The IFV is of the same type as the IFV platoons in the company. The Artillery spotter is a BRDM-2. The air defense units are either 2S6 Tanguskas or ZSU-23/4 Shilkas.



Motor Rifle Platoon

A platoon of motor rifle infantry mounted in MT-LB or BTR Armored Personnel Carriers.



Motor Rifle HQ Section

The HQ section of a motor rifle company. The APC is of the same type as the APC platoons in the company. The Artillery spotter is a BRDM-2. The air defense units are ZSU-23/4 Shilkas.



Air Defense Section

This unit consists of a single section of two 2S6 "Tunguska" air defense vehicles. It may be attached to any unit.



Air Defense Platoon

This unit consists of a platoon of two ZSU-23/4 Shilka air defense vehicles and two SA-13 mobile SAM launchers. It may be attached to any company HQ.

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Tank Destroyer Platoon

This unit can be attached to any Mechanized infantry company to increase its anti-tank ability. It consists of three BRDM-3 ATGM vehicles.

TANK PLATOON

BMP Reconnaissance Platoon

This is the heavy reconnaissance platoon from the regimental recon company. It can be attached to any company as needed for scouting duties. The platoon consists of either three BMP-1 or BMP-2 IFVs configured for scouting duties.

Reconnaissance Platoon

This is the light reconnaissance platoon from the regimental recon company. It can also be attached to any company as needed for scouting duties. The platoon consists of four BRDM-2 recon vehicles.

ARTILLERY SUPPORT

OPFOR units generally have far more artillery firepower than their American equivalent. Under the Soviet system, the guns and rockets of the artillery regiment are intended for massive assault bombardments. They were not used for general support. The artillery and mortars attached to each regiment were intended for this purpose. This has generally changed, resulting in much more flexible artillery response and a greater likelihood of encountering heavy guns and multiple launch missile systems.

In the Soviet system, requests for artillery fire, smoke screens from mortars, etc., had to be either passed through the battalion HQ or made to an artillery fire control vehicle in the vicinity. There is no provision for giving platoon or company commanders direct communication to support arms. This has changed as a result of the Russian experience in Afghanistan. The new methods allow company commanders to call in fire, and some militaries are even allowing platoon leaders to do so.

Mortar Batteries

TANK PLATOON II

Mortar batteries are usually controlled from the company and battalion level. They have a relatively small warhead, but offset this by being the most flexible and having the quickest response time.

Howitzer Batteries

While many Western countries describe the tank as the "King of the Battlefield," in the East it has always been the heavy artillery batteries. OPFOR forces use both self-propelled and towed guns. Both types can use both conventional HE rounds or dual-purpose improved conventional munitions, (DPICM) rounds. The DPICM rounds contain a mix of anti-armor and anti-personnel or dual purpose bomblets. It is considered doubtful that the Iraqis or the Libyans use DPICM rounds.

Multiple Launch Rocket Systems

The multiple launch rocket system is a Russian invention and their favorite method of saturating a target with an overwhelming amount of firepower. While individually not as advanced as the U.S. MLRS system, the OPFOR make up for quality with quantity.

AIR SUPPORT

Unlike the U.S. Army, OPFOR divisions do not have a strong helicopter component. In the Russian army, helicopters are organized into independent regiments controlled by the Army HQ. These regiments are assigned much like heavy artillery or other reserves. The helicopter regiments have no integral ground troops, so air-ground coordination develops more slowly

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Attack Helicopter Units

An attack helicopter flight consisting of three Mi-24F Hind, Mi-28 Havoc, or Ka-50 Hokum attack helicopters.



Close Support Aircraft

Close Support Aircraft are a pair of SU-25 Frogfoot ground attack aircraft. CS aircraft are not available in all campaigns or difficulty levels.



APPENDIX E: VEHICLE LIST

AMERICAN AND NATO VEHICLES

| NAME | TYPE | ICON |
|----------------|------|-------------|
| M1A2 ABRAMS | MBT | Щ В |
| M2A3 BRADLEY | IFV | \boxtimes |
| M3A3 BRADLEY | CFV | |
| M2ADV | ADV | |
| M4 TOC | TOC | на |
| HMMWV-M2 | RCN | |
| HMMWV-M19 | RCN | |
| HMMWV-TOW | TD | |
| HMMWV Avenger | ADV | |
| LAV25 | IFV | |
| LAVTOW | TD | |
| LAVADV | ADV | |
| LAVM | SPM | |
| LAVC | TOC | на |
| AAV-7 | APC | |
| M113A3 | APC | |
| M901 ITOW | TD | |
| M577 TOC | TOC | ы по |
| M106 | SPM | |
| M109A6 PALADIN | SPG | |
| MLRS | MLRS | <u>n</u> |
| M-939 TRUCK | SUPP | |
| M-977 HEMMET | SUPP | |
| M-978 HEMMET | SUPP | |

| NAME | TYPE | ICON |
|---------------|------|------|
| CHALLENGER II | MBT | 田 📋 |
| WARRIOR II | IFV | |
| LEOPARD IIA4 | MBT | 山 |
| MARDER II | IFV | |

AMERICAN AIRCRAFT

| IAME | TYPE | ICON | |
|---|-----------------|-------------|---------------|
| H-64A APACHE | AH | Ŕ | ж |
| H-64D LONGBOW | AH | Ŕ | * |
| H-66 COMANCHE | RH | 汝 | * |
| H-1W COBRA | AH | Ŕ | ж |
| H-58D KIOWA | RH | 汝 | * |
| -10 THUNDERBOLT | AC | ¢ | - <u>11-</u> |
| V-8B HARRIER | AC | ŵ | - <u>ii</u> - |
| REDATOR | UAV | ϕ | ÷ |
| - 10 THUNDERBOLT V-8B HARRIER REDATOR | AC AC UAV | ආ ආ ආ | 불 불 + |

APPENDICES

OPFOR VEHICLES

| NAME | TYPE | ICON |
|-------|------|-------|
| T90E | MBT | щ |
| T80U | MBT | 121 📋 |
| T72B1 | MBT | 山 💼 |
| T72M1 | MBT | щ |
| BMP3 | IFV | |
| BMP2 | IFV | |
| BMP1 | IFV | |
| BTR90 | APC | |
| BTR80 | APC | |
| MTLB | APC | |

NAME TYPE ICON HQ MTLBTOC TOC Ĥ. BRDM3 TD \bowtie BRDM2 RCN \bigtriangleup Ξ 2S6 TUNGUSKA ADV Ξ. ZSU-23/4 SHILKA ADV н ZIL TRUCK SUPP \bullet 3 3 ZIL TANKER lacksquareSUPP • SPG2S19 SPG 麿 φ Ĭ. FROGLAUNCHER SRBM BM9A52 MLRS Ŵ Ĭ. BM24 MLRS Ξ SA-13 ADV з SA-15 ADV Ξ.

SAM

RAD

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TANK PLATOON II

ZPU-23 OPFOR AIRCRAFT

SAMRADAR

SA-6

| NAME | TYPE | ICON |
|----------------|------|------|
| MI-24F HIND | AH | ŵ 💥 |
| MI-28 HAVOCK | AH | ŵ 💥 |
| KA-50 HOKUM | AH | ŵ 💥 |
| MI-8 HIP | СН | ŵ 💥 |
| SU-25 FROGFOOT | AC | ô 🛨 |

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