

OPERATIONS MANUAL



HEAVY METAL

Modern Land Combat

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HEAVY METAL

Modern Land Combat Operations Manual



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Access Software, Inc.
545 West 500 South
Bountiful, Utah 84010
(801) 298-9077**

CREDITS

Game Design: Brent Erickson, Roger Carver, Bruce Carver

Software Graphics & Art: Doug Vandegrift

Documentation: Bruce Carver, Chris Jones, Doug Vandegrift

Play Testing: John Berven, James Slade, Chris Jones

Additional Graphics: John Berven, James Slade

Packaging Design: Doug Vandegrift

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Introduction

"Compared to war, all other forms of human endeavor shrink to insignificance. God, how I love it."

—General George S. Patton



Do you have the courage, skill and determination to move up the ranks in today's army? Well get ready to find out in a simulation experience that is considerably less risky than a real battlefield.

You'll start out as a cadet, learning to operate three ultra modern weapons systems. After you've earned your commission, you'll be given your own field command and receive your "baptism by fire", attempting to stop enemy forces from overrunning your positions and capturing your Headquarters.

Your responsibilities include strategic and tactical planning, combat engagement, and resupply of your forces. You'll be required to operate your battlefield equipment at maximum efficiency while carefully monitoring your forces at other fronts as well. Your decisions will be critical if your forces are to survive against numerically superior enemy forces.

Your Commander will rate your performances and recommend advancements in rank. You'll soon discover that he's not an easy man to please.

Some were born to lead, others to follow. Do you think you've got what it takes to command? Take the **HEAVY METAL** challenge and find out!

LOADING INSTRUCTIONS

Please follow these instructions carefully:

1. Before playing the game, we strongly suggest that you **make a backup copy of the Heavy Metal game disk**. You will be saving player names and game information to your playing disk. Please stop now and make a backup.
2. **JOYSTICK:** Plug the joystick into joystick port #2 (rear).

Note: The LipStik and LipStik Plus can be used in Heavy Metal. Plug the LipStik into Port #1 and use it to fire missiles in the ADAT scene or to release smoke in the M1A1 scene.
3. Turn on the disk drive, monitor and computer.
4. Place the Heavy Metal game disk in the disk drive and close the drive door.
5. Type: LOAD"HEAVY METAL",8,1 and press RETURN. Heavy Metal will load and run automatically.

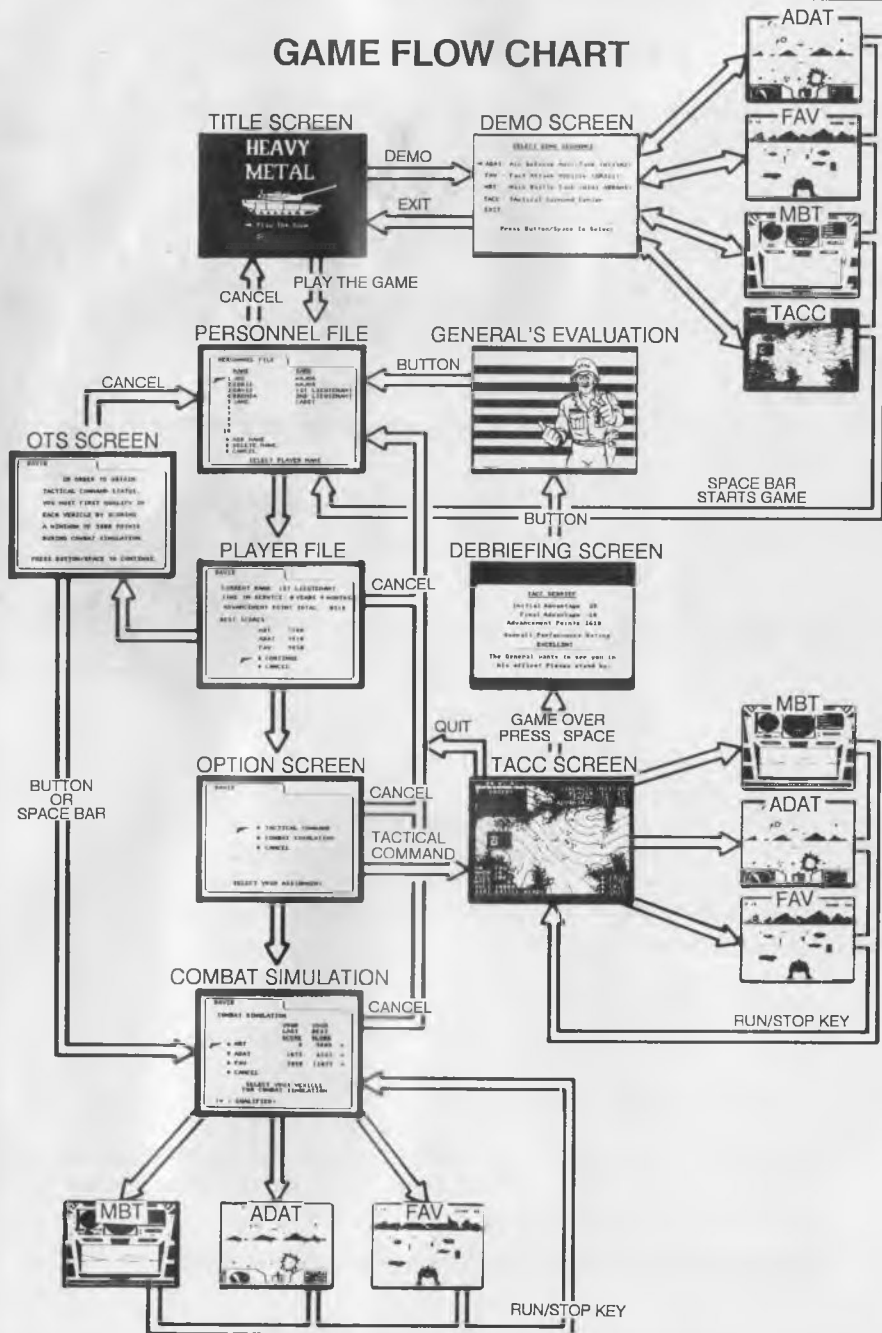
Start-up Sequence:

As the game loads, you will be asked to do the following:

1. **Select fast or normal loading.** Fast loading requires that you have a 1541 or compatible disk drive.
2. **Adjust the sound.** You may choose to adjust the sound filter settings of the game to provide the optimum sound for you computer.
3. **Turn the disk over** and press [RETURN]. You must switch to the back-side of the disk to view the title sequence. After this sequence is complete, you will be asked to turn the disk over again since the front side will be used for normal game play.

(Note: If you would like to bypass the title screen, press "P" when asked to "Turn the disk over".)

GAME FLOW CHART



TITLE AND DEMO SCREENS

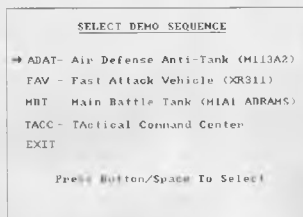
The Title Screen (Please refer to the Game Flow Chart)



After you've turned the disk over, the next screen you'll see is called the TITLE SCREEN. From this level you can choose one of two options.

1. PLAY THE GAME - Proceed to the PERSONNEL FILE
2. DEMONSTRATION - Go to the DEMO SCREEN where you can preview any of the 4 main action screens.

The Demo Screen (Please refer to the Game Flow Chart)



This screen will allow you to see a demonstration sequence of any of the four main action screens.

MBT – Main Battle Tank

ADAT – Air Defense Anti-Tank System

FAV – Fast Attack Vehicle

TACC - Tactical Command Center

During the demonstration, pressing space bar will start the game by taking you directly to the PERSONNEL FILE. If you wait to see the entire demo, you will return to the DEMO SCREEN.

Selecting "EXIT" will take you back to the TITLE SCREEN.

The Personnel File (Please refer to the Game Flow Chart)

Up to 10 names are allowed in the file, and a blank line must exist in order to enter a new name. If a blank line does not exist, use the "DELETE NAME" function to erase one of the existing names from the list.

Select the "CANCEL" function to return to the Title Screen.

RETURN TO TITLE SCREEN

PERSONNEL FILE

NAME	RANK
1 JOE	MAJOR
2 EDDIE	MAJOR
3 DAVID	1ST LIEUTENANT
4 BRENDA	2ND LIEUTENANT
5 JANE	CADET

☐ ADD NAME
☐ DELETE NAME
☐ CANCEL

SELECT PLAYER NAME

FOLLOW THESE INSTRUCTIONS

The Player File (Please refer to the Game Flow Chart)

Each player has his or her own file which automatically maintains records of performance ratings, time in service, and rank advancements. Every first time player must begin as a Cadet in Officer's Training School (OTS). A player will become a commissioned officer (2nd Lieutenant Rank) after qualifying on each of the three Combat Simulators. Qualifying is not difficult, but Cadets must demonstrate basic combat skills by scoring a minimum of 5,000 points on each simulator. A player cannot play the Tactical Command portion of the game until he has received his commission as a 2nd Lieutenant.

DAVID

CURRENT RANK: 1ST LIEUTENANT
TIME IN SERVICE: 8 YEARS 9 MONTHS
ADVANCEMENT POINT TOTAL: 4510

BEST SCORES:

HBT	7700
ADAT	3410
FAV	9450

 CONTINUE
◆ CANCEL

Advancements in Rank

Your rank is determined by your total advancement points which accumulate each time you play the game. Be sure to play each time under the same **PLAYER NAME** so that your points will accumulate properly.

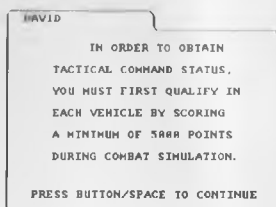
RANK	TOTAL ADVANCEMENT POINTS
GENERAL (5 Star)	86400 and up
GENERAL (4 Star)	73800 – 86399
GENERAL (3 Star)	62100 – 73799
GENERAL (2 Star)	51300 – 62099
GENERAL (1 Star)	41400 – 51299
COLONEL	32400 – 41399
LT. COLONEL	24300 – 32399
MAJOR	17100 – 24299
CAPTAIN	10800 – 17099
1st LIEUTENANT	5400 – 10799
2nd LIEUTENANT	0 – 5399

Officer's Training School

If you have not yet qualified, you will automatically go to the OTS Screen (see the Flow Chart) and then on to the **COMBAT SIMULATION SCREEN**.

If you have qualified, you will automatically move to the **OPTION SCREEN** (see Flow Chart) where you may choose to play the **TACTICAL COMMAND** portion of the game.

The OTS Screen: (please refer to the Game Flow Chart)



If the OTS (Officers Training School) screen appears, it means that you are still a Cadet and have not yet received your commission. Only commissioned officers (2nd Lieutenant rank or higher) have **TACTICAL COMMAND** status. Upon leaving this screen, you will go

directly to the COMBAT SIMULATION screen, where you will have your chance to qualify. Once you have qualified on each of the three simulators, you will not return to the OTS screen.

Combat Simulation

Combat Simulation (Please refer to the Game Flow Chart)

The Combat Simulators are designed to test and improve your skills under simulated battlefield conditions.

DAVID

COMBAT SIMULATION

	YOUR LAST SCORE	YOUR BEST SCORE	
◆ MBT	8	5000	*
◆ ADAT	1875	6225	*
◆ FAV	3240	11075	*
◆ CANCEL			

SELECT YOUR VEHICLE
FOR COMBAT SIMULATION

(* = QUALIFIED)

Labels on the left pointing to the menu options:

- SIMULATOR #1
MAIN BATTLE TANK (points to MBT)
- SIMULATOR #2
AIR DEFENSE ANTI-TANK (points to ADAT)
- SIMULATOR #3
FAST ATTACK VEHICLE (points to FAV)
- RETURN TO
PERSONNEL FILE (points to CANCEL)

Note on the right: AN ASTERISK BY YOUR SCORE MEANS YOU HAVE QUALIFIED

Qualifying

Qualifying is accomplished by scoring a minimum of 5,000 points on each of the three COMBAT SIMULATORS. You may then advance in rank as your performance and time in service warrant.

You can return to the COMBAT SIMULATORS at anytime to sharpen your combat skills or to compete against other officers for top scores. Your best and last scores on the simulators will be saved with your personnel file. The best scores are considered when evaluations for promotion are done.

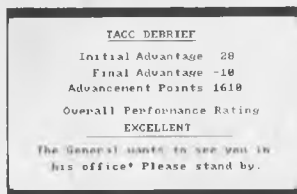
Operating the Combat Simulators

The combat simulators operate identically to their counterparts except that you have unlimited fuel and shells and a fixed number of units with which to fight. Once all your units are destroyed, the simulation is over. Your performance is based entirely on the number of points scored during the simulation. Refer to the section on Operating Your Equipment for specific information on how to operate each piece of hardware.

your Headquarters, and you will try to stop them. After moving your forces to engage the enemy, you can choose to sit and watch or you can join one of the battles and help your men fight. If you choose to watch, you will surely lose, and the General will be very hard on you. If you choose to fight, your performance will greatly affect the outcome.

Refer to the **Tactical Command Section** for specific instructions on maneuvering your forces and interpreting information from the TACC.

The Debriefing Screen (Please refer to the Game Flow Chart)



Upon completion of a game during Tactical Command play, you will come to the Debriefing Screen for an evaluation. Advancement Points are awarded based on your overall game performance. You do not have to win to get a good rating. Since the enemy will always be numerically superior, it is more important to reduce that superiority as much as possible than it is to win.

Your Performance Rating is related to your Advancement Points as shown below.

Performance Rating	Advancement Points
Outstanding	2200 or more
Superior	2000 to 2199
Exemplary	1800 to 1999
Commendable	1500 to 1799
Adequate	1200 to 1499
Inferior	900 to 1199
Awful	600 to 899
Pathetic	300 to 599
Disgusting	Less than 300

After a few seconds in TACC Debriefing you will meet with the General.

The General's Evaluation (Please refer to the Game Flow Chart)



Four Star General E. E. "Bud" Dink, is not an understanding person. He is quite unsympathetic and intolerable of new officers. You may find his remarks harsh at times, but underneath, he probably means every word of it. There is one hope, however. With enough perseverance you may someday become a Five Star General and out rank old General Dink. I wonder what he'd have to say then?

Press the button or spacebar to continue.



OPERATING YOUR EQUIPMENT

Operating the M1A1 Abrams Main Battle Tank (MBT)

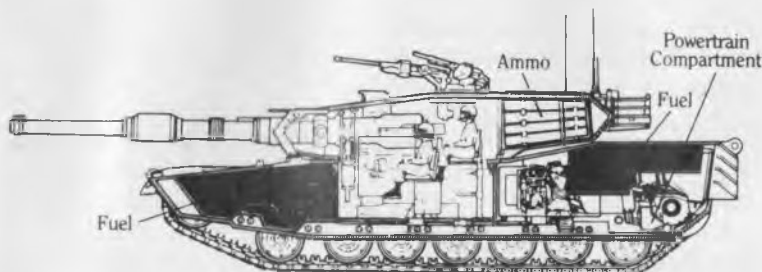


Description

Get ready to take the controls of an M1A1 Abrams, the U.S. Army's newest, most sophisticated main battle tank. The M1 features an unparalleled combination of mobility, armor protection and firepower. Its sloped armor, made of rough composite metals, provides excellent protection against most anti tank warheads. The M1 is powered by a 1500 HP gas turbine engine. It also has a Laser Rangefinder and a Gyro Stabilizer which allow this tank to engage targets while on the move. The M1 has a 120mm cannon, smoke dischargers for defense maneuvering and a top speed of 73 KPH (44 MPH). Learn to operate your M1 at maximum efficiency and get to know all of its capabilities.

Objective

Your objective is to destroy as many enemy targets as you can while sustaining as few losses as possible. You will encounter enemy tanks, artillery, mortar fire, and multi launch rocket systems.



gunner simply turns the turret until he is pointing at the target. (The target is indicated on the main viewing screen by the TARGET CURSOR.) Once the target is in approximate alignment, the gunner will then use the ALIGNMENT ARROW for fine adjustment. When the ARROW is centered on the target image, the gun is pointing directly at the target. The gunner then raises or lowers the gun angle until the PROJECTILE RANGE indicator matches (approximately) the TARGET RANGE indicator and fires.

- **PERISCOPE VIEW** - An image of the target is automatically magnified and displayed in the periscope view, making it easily identifiable.
- **SCORE** - Used in combat simulation to keep track of your combat points.
- **PLAYER STRENGTH** - The number of tanks remaining in your unit.
- **ENEMY STRENGTH** - Indicates the relative strength of the enemy division. This number does not always decrease when an enemy target is destroyed. It may take two or more kills to reduce the enemy's relative strength by one unit.

• **AMMUNITION** -

M827 - (APFSDS*-T) This round is constructed of depleted uranium and is your most effective weapon against any type of armor. It is the ONLY round that will penetrate the armor of the enemy TR-80 tank.

M829 - (APFSDS*-T) Standard armor piercing combat round.

M830 - (HEATMP-T) Standard armor piercing combat round.

*Armor Piercing Fin Stabilizing Discarding Sabot.

- **ENEMY LASER SCAN WARNING** - Your M1A1 is equipped with smoke generation capabilities to confuse enemy targeting systems. When the LASER SCAN WARNING alarm sounds, it means that your sensors have detected an enemy laser scan of your tank. You must dispense smoke immediately or the enemy targeting system will lock on to you and fire. If the enemy tank is able to score a direct hit, your tank will be destroyed.

- **GENERATE SMOKE** - Press Function Key (F7) to generate smoke and prevent an enemy laser lock.
- **TANK SPEED** - The M1 has four speeds in both forward and reverse.

18 KPH - Press "1" Key

36 KPH - Press "2" Key

54 KPH - Press "3" Key

72 KPH - Press "4" Key

Press the "SPACE BAR" to stop.

- **FORWARD/REVERSE** - To change directions do the following.

1. Press the SPACE BAR to stop.

2. Press the "←" key to go forward

or

Press the "CTRL" key to go in reverse.

NOTE: You must be stopped (press space) before you can change directions.

- **TARGET SELECTION** - If more than one target is within the main viewing screen, you can force the Laser Rangefinder to select another target by pressing the "+" or "-" keys.
 - **GUNNER'S VIEW OR DRIVER'S VIEW** - You can switch back and forth between the Gunner's or Driver's view by pressing the "RT SHIFT" key.
 - **ROTATE THE TURRET INDEPENDENTLY FROM THE TANK** - To rotate only the turret, press the "<" or ">" keys.
- NOTE: Moving the turret separate from the tank can be disorienting and should only be used by experienced players.**
- **EXIT THE SCENE** - Use the "RUN/STOP" key to exit.



Using the Laser Rangefinder

Learn to rely on your Laser Rangefinder. It is the most powerful offensive feature of your M1. Follow these steps while refering to the INSTRUMENT DIAGRAM.

1. Turn your tank (if necessary) to bring a target into view on the PERISCOPE.
2. While looking at the MAIN VIEWING SCREEN. Turn your tank left or right (by using the joystick) until your gun barrel is pointing almost directly at the TARGET CURSOR.
3. Now look at the periscope and notice the location of the ALIGNMENT ARROW.
4. Turn towards the ARROW until it is centered on the target image.
YOU ARE NOW IN HORIZONTAL ALIGNMENT.
5. Next, look at the TARGET RANGE (the left set of vertical numbers).
6. Now, raise or lower your gun angle until your PROJECTILE RANGE matches (nearly) the TARGET RANGE. (The projectile range is the right set of vertical numbers.) **YOU ARE NOW IN RANGE ALIGNMENT**
7. If you are still in horizontal alignment, you should fire your cannon by pressing the button.

Keep Moving!

Your tank is covered with reactive armor, which bolts on the outside of your tank's body and turret. It explodes outward to blunt the impact of incoming shells. This allows you to take a number of hits without being disabled. If you're stationary, however, your chance of being hit in a spot that has been previously hit increases and makes you much more vulnerable.

"You must kill and be killed and not go round about"

– General Mosche Dayan

Operating the Air Defense Anti-Tank (ADAT) System



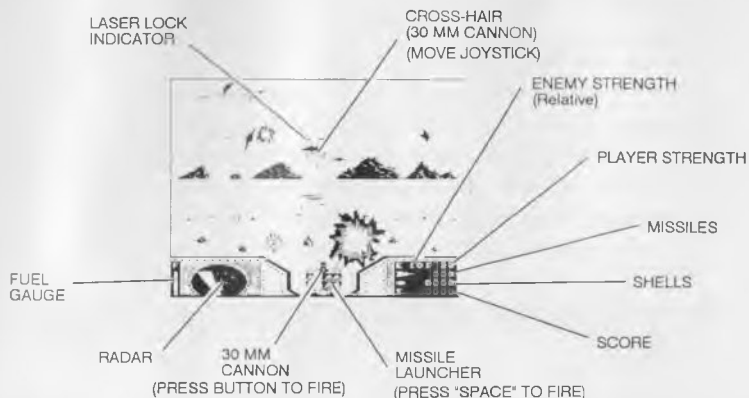
Description

This unit is a highly sophisticated, modular missile launcher designed specifically to be an anti-aircraft/anti-tank weapon. The main component of the system is the turret based launch platform consisting of two banks of four laser beam riding missiles. The unit also features a 30mm cannon for additional firepower. The ADAT system was designed by Martin Marietta Corporation to provide effective anti-aircraft and anti-armor capabilities in a fast reaction vehicle for front line NATO forces. It is mounted on an M-41 Bradley Chassis with a top speed of 41 mph.

Objective

Your objective is to destroy enemy "MIG" fighters and TR-80 tanks. Aircraft can be destroyed by your missiles or your cannon. Tanks can only be destroyed by the 30mm cannon. (This is a game limitation because of sprite allocation, not an equipment limitation.)

ADAT INSTRUMENTS & CONTROLS



Description of ADAT Instruments & Controls

- **LASER LOCK INDICATOR** - When this square bracket appears on screen, it means that your target acquisition system is tracking a target. Fire a missile by pressing the SPACE BAR. Your laser tracking sytem is approximately 90% effective.
- **CROSS-HAIR** - This is the "gun sight" for your 30mm cannon. Move the cross-hair vertically by pressing forward or back on the stick and move it horizontally by pressing left or right on the stick. Press the **BUTTON** to fire.
- **FUEL** - During combat simulation, fuel is unlimited. However, during TACTICAL COMMAND play, fuel is consumed. If you run out of fuel, you cannot move your ADAT unit. Always keep enough fuel to get back to headquarters and resupply if needed.

Operating the Fast Attack Vehicle (FAV)



Description

The XR311 looks and drives very much like a dune buggy. Developed by the FMC Corporation, it is considered as a replacement for the jeep and has been designed for a wide variety of roles including anti-tank assistance, reconnaissance, convoy escort and forward air defense. The XR311 is built around a tubular steel frame and has armor protection only for the radiator and fuel tank. However, it has a top speed of near 100 mph and can climb a 60% grade without losing speed. These factors make it an extremely elusive target. The FAV is armed with a TOW missile launcher which makes it very effective against any class of armored vehicle.

Objective

To score points, you must destroy enemy obstructions and equipment.

In the combat simulation you'll be given 10 vehicles and an unlimited supply of fuel and ammunition. Most objects on screen are potential targets and are worth points. In the TACTICAL COMMAND section, your fuel and ammunition will eventually run out and you'll need to resupply.

FAV INSTRUMENTS & CONTROLS



OPERATING SPEED

The FAV operates at full speed only and can be controlled by moving the joystick right or left. At this speed, any object you hit will destroy your FAV. To use the TOW missiles, line up on your target and press the joystick button.

HAZARDS

Aside from avoiding hazards in your path, helicopters and tanks will fire at you. If you hear the whistle of an incoming artillery shell, move your FAV a considerable distance either right or left until the shell hits the ground. The FAV scene features 99 different defense levels which become progressively more difficult.

Tactical Command

"War is a science covered with shadows in whose obscurity one cannot move with an assured step. All sciences have principles and rules, war has none."

Reveries on The Art of War by Marshal Saxe

Overview & Summary

TACTICAL COMMAND is your chance to advance in rank. This is actual field command, where your ability as a field commander will be judged.

When you select the TACTICAL COMMAND option, you will move to the **Tactical Command Center (TACC)**. Here you will deploy your forces, engage the enemy, fall back to resupply, and hopefully defend your Headquarters against the numerically superior enemy forces.

You'll begin play with one unit each of **TANKS, ADATS, & FAVS**. The computer will determine the number of vehicles in each unit. In addition to these 3 predefined units, you will have a fourth group, called the **SUPPORT UNIT**. You must designate which type of vehicle to be used, and the computer will determine the number.

Your primary objective is to stop the enemy from over taking your headquarters. Your secondary objective is to weaken enemy forces as much as possible. Each time the simulation is played the size of your forces, positioning, and enemy strength will be different. Many times the overall enemy strength will be so overwhelming that achievement of your primary objective may not be possible. Therefore, your overall performance will be judged heavily on how much damage you inflict on the enemy, in relation to the damage they do to you.

As enemy forces move toward your headquarters, you must cut them off. When your troops engage the enemy you can choose to do the fighting yourself, or let the computer decide the outcome. If the computer is doing the fighting however, it will base its decisions on the strengths of the player and enemy divisions. So if you're outnumbered, you'll probably lose your unit after a period of time.

As the field commander, you are responsible for monitoring each unit's fuel, ammunition and battle progress. From time to time you

should check their supplies and fuel status. If you're running low, you may need to send them back to **Headquarters (HQ)** to resupply. This can be done if they have enough fuel to reach HQ and if HQ is under your control.

To win, you'll have to carefully coordinate your smaller forces in battle, resupply them and do most of the critical fighting yourself. During combat you'll have to check the **TACC (Tactical Command Center)** periodically to monitor the situation and needs of your other units.

When the game ends (whether you win or loose) you'll move to the **DEBRIEFING** room. Here your performance will be rated and advancement points awarded.

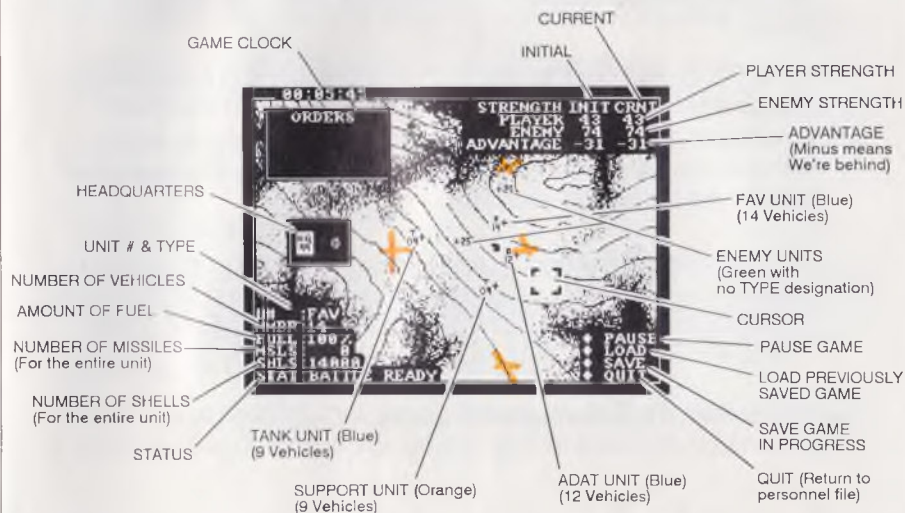
"To know how to exploit the enemy's weakness is in itself a gift."

— Lidell Hart

Operating the TActical Command Center (TACC)

Upon entering the TACC, the first thing you must do is designate your **SUPPORT UNIT** by pressing "T", "A", or "F" for **TANKS**, **ADATS**, or **FAVS**.

As soon as you have done this, the game will begin, so you may want to read the next few pages thoroughly before starting.



TACC Controls

THE CURSOR - Many of the controls and commands involve moving the CURSOR to various locations on screen. This is done by moving the joystick up, down, left or right in the direction you wish to move.

Giving Orders

To give orders or commands to one of your units you must do the following.

STEP 1 - ESTABLISH COMMUNICATIONS WITH THE DESIRED UNIT.

This is done by pressing keys 1, 2, 3, or 4 on the keyboard.

Key "1" - FAV Unit (Blue)

Key "2" - TANK Unit (Blue)

Key "3" - ADAT Unit (Blue)

Key "4" - SUPPORT Unit (Orange)

You may also use the joystick to place the CURSOR over the desired unit and then press the BUTTON. Make sure the cross (+) is within the CURSOR BOX.

Once communications have been established, the DESIGNATED UNIT WILL TURN WHITE and the UNIT INFORMATION SECTION (lower left) will show data for that unit.

STEP 2 - TELL YOUR UNIT WHAT TO DO

The COMMAND WINDOW (upper left) will now display the following options:

- **RESUPPLY** - Fall back to HQ and get more fuel and ammunition. (You cannot get more vehicles). Once resupplied, the unit will remain at HQ until new orders are received. If the HQ is under enemy control it will turn green. **You cannot resupply when the enemy has control of your HQ.**

If you select RESUPPLY, and HQ is under your control, your unit will automatically disengage (if necessary) and begin moving towards HQ. IF HQ IS CONTROLLED BY THE ENEMY, YOUR RESUPPLY ORDER WILL NOT BE ACCEPTED.

- **MOVE** - Move to a new position and await further orders.

If you select **MOVE**, you will then have to specify the **POINT TO MOVE TO**. Do so by moving the **CURSOR** (with the **JOYSTICK**) to the desired location and pressing the **BUTTON**.

- **ENGAGE** - Move to intercept an enemy division and engage them in battle. Once engaged, your unit will continue to battle until it wins or loses or until new orders are received. The computer will do the fighting for you unless you choose to **ENTER COMBAT** (see below).

If you select **ENGAGE**, you will have to specify **WHICH ENEMY UNIT TO ENGAGE**. Do so by moving the **CURSOR** (with the joystick) to the desired enemy unit and pressing the **BUTTON**. Make sure the cross (+) is within the **CURSOR BOX** before pressing the button.

- **CANCEL** - Never mind. Do not give an order.

SELECT one of the options by moving the **JOYSTICK UP** or **DOWN** until the **ARROW** is pointing at the desired **OPTION**, then press the **BUTTON**.

Entering Combat

To have any chance of doing well, you must join your troops in combat. The computer will fight in your absence, but will only "**HOLD ITS OWN**" against the enemy. One of your greatest challenges will be selecting which unit to help, since you can only be one place at a time. **Note: You can only enter Combat when a unit is "in battle".**

To **ENTER COMBAT**, press the communication key (1, 2, 3 or 4) for the appropriate unit, then press the "E" key (for **ENTER**).

Fight as long as you feel is necessary, then press the **RUN/STOP** key to return to the **TACC**.

Unit Information

The unit information display (lower left) always shows data for the last unit selected by one of the communication keys (1, 2, 3, or 4). You can cycle through all four units and check they're status simply by pressing the **COM KEYS** in succession (1, 2, 3, or 4).

After you've checked everyone's status, you will still be in command mode (giving orders). If you do not wish to give a command (i.e.

Resupply, Move, Engage) you can cancel by pressing the "C" key or the BUTTON.

Options

In the lower right corner of the TACC screen are four options; PAUSE, LOAD, SAVE, and QUIT.

To select an option, move the CURSOR near the option you desire. The CURSOR will change to an ARROW. Now, position the ARROW over the BULLET (diamond) that is just to the left of the option you want, then press the BUTTON. Below is a description of each option.

- **PAUSE** - Will pause a game so you can catch your breath.
- **LOAD** - Will load a previously saved game into memory and begin play. To load a game, first select the LOAD OPTION. Now select a game number (1-10) by moving the joystick up or down until the desired number is displayed, then press the button.
- **SAVE** - Will save a game in progress so that you may resume play at a later time. To save a game, first select the SAVE OPTION. Now select a game number (1-10) by moving the joystick up or down until the desired number is displayed, then press the button. Up to 10 games are allowed on one disk.
- **QUIT** - Will abort the entire game and return you to the PERSONNEL FILE. (See the Game Flow Chart).

TACC Playing Suggestions

When the game begins, enemy forces (green) will begin moving towards your Headquarters.

Select one of your units (press 1,2,3, or 4) and tell them to ENGAGE* (see Giving Orders) one of the enemy divisions. Do the same for two other units so that all 3 enemy divisions are stopped and fighting. Now select your 4th unit and "Gang Up" on one of the enemies. Try to pick a battle where the sum of your two unit strengths is approximately equal to the enemy's strength. Let the computer fight this battle while you ENTER COMBAT with one of your "one on one" units. TO "ENTER", select the unit by pressing 1, 2, 3, or 4 and then press the "E" key. Help out as long as you dare and then press the "RUN/STOP" key to come back and see how everyone's doing.

If enemy forces penetrate your defenses and reach HQ without being attacked, the HQ will turn from yellow to green and the enemy will have temporary control. **If you don't attack the enemy division holding your HQ in a certain length of time, the entire battle will be over.** Once HQ is under enemy control you must engage the enemy division holding HQ in order to get control back. As long as HQ is under enemy control your forces cannot resupply.

Remember, if you do not engage the enemy division holding your HQ within a certain period of time the game will end. If 2 or 3 units attack your HQ, the "holding time" will be even shorter, so it is imperative that you attack Divisions holding your HQ.

Be aware of the speed difference between the three types of units. The FAVs are the fastest, followed by the TANKS and then the ADATS. Take this into account when sending a unit to engage an enemy.

If one of your units is destroyed or runs out of fuel, it will turn gray and is of no further use to you.

The best way to learn how to be a good commander is to play the game. Don't get discouraged if you don't win. Concentrate on reducing the enemy's advantage. Your ratings will be based on how well you perform, rather than whether you win or lose. It takes experience to learn where to deploy your forces, when to return from combat, when to resupply, etc. Remember, even George Patton had to start somewhere.

Helpful Hints

1. Keep moving during the MBT scene. If your tank is stationary, it is an easy target.
2. During the FAV scene, try to shoot the larger objects and equipment. They are worth more points and have a greater influence on enemy strength.
3. Enemy tanks in the MBT scene will come toward you, fire, and then move away. The best way to destroy them is to wait until they start to move away, and then pursue them at full speed. The distance between you and the enemy tank will stabilize making it easier to hit. Don't forget to use your SMOKE when they are close and trying to get a Laser Lock on your tank.

4. Upon returning to the TACC scene from combat, check the status of all your units (press 1,2,3, and 4). You may find that a unit is in urgent need of resupply.
5. Take the time to shoot the enemy tanks in the ADAT scene. They are worth big points and will reduce the enemy strength significantly. It takes two good solid hits with the 30mm cannon to destroy one.
6. Don't forget to move sideways when you hear an incoming shell in the FAV scene. Enemy mortars are deadly if you stay on a straight course.

Trouble Shooting Section

The following is a list of common problems that may arise and suggestions for solving them.

If you are having problems **playing** the game, PLEASE RE-READ THIS MANUAL THOROUGHLY.

PROBLEM: The program fails to load or "locks up" during play.

SOLUTION:

- A. Try removing the program disk, turning off the computer and disk drive and trying again. (Make sure the disk label is up).
- B. Try using the Normal Load rather than the Fast Load option.
- C. Try disconnecting printer interfaces, modems, cartridges or other peripheral equipment.
- D. Run the CHECK programs as follows:
 - Step 1: Insert the Front side of the game disk.
 - Step 2: Type LOAD "FRONT CHECK",8 and hit [RETURN]. Then type: RUN [RETURN].
 - Step 3: Follow the instructions on the screen and the CHECK program will check every file on the front side of the disk.
 - Step 4: The program should display "DISK OKAY" at the end of the checking process. If it does not, refer to step 7 below.
 - Step 5: Now type: LOAD "BACK CHECK",8 and hit [RETURN]. Then type: RUN [RETURN].
 - Step 6: Follow the instructions and TURN THE DISK OVER. The CHECK program will now check the back side of the disk.
 - Step 7: If "DISK OKAY" was displayed after both front and back checks, then your computer is correctly reading the data from the disk. If "DISK OKAY" was not displayed 2 times, then your disk MAY BE DEFECTIVE.
- E. If you are still unsuccessful call us at (801) 298-9077. If you have a CompuServe account, you may leave comments or questions for us at CompuServe I.D. #70127,766.

PROBLEM: Joystick doesn't work.

SOLUTION: Make sure joystick is plugged into the rear port (port #2).

PROBLEM: Unable to ENTER COMBAT from TACC scene.

CAUSE:

- A. Not selecting unit by pressing 1, 2, 3, or 4.
- B. Not pressing the "E" key after unit is selected.
- C. Not waiting until units are actually in battle. Both cross hairs must be in alignment.

PROBLEM: Missiles won't fire in ADAT scene.

CAUSE:

- A. Out of Missiles.
- B. Enemy plane not targeted (Laser lock indicator not on screen).

PROBLEM: Weapons will not fire.

CAUSE: Out of ammunition

PROBLEM: Seem to be losing tanks too quickly in the MBT scene.

CAUSE:

- A. You're not moving around.
- B. You're not using your smoke when laser alarm sounds.

PROBLEM: Cannot resupply - Resupply order is not acknowledged.

CAUSE:

- A. Enemy is in control of H.Q. (H.Q. has turned green) (Engage enemy unit as quickly as possible).
- B. Your unit is out of fuel.
- C. Unit is destroyed.

PROBLEM: Cannot kill tank in MBT scene even though it appears you are getting a direct hit.

CAUSE: You do not have M827 shells selected. (They are the only shells that are effective against enemy tanks) (Press the F1 key).

PROBLEM: Cannot kill enemy targets in MBT scene at very close range.

CAUSE: Gun angle is too high. (Lower your gun angle to its lowest possible position to hit objects less than 600 meters away)

PROBLEM: Score not accumulating or rank not increasing.

CAUSE: Not playing each game under the same person from the personnel file.

PROBLEM: Score accumulating very slowly.

CAUSE:

- A. Not playing TACTICAL COMMAND portion of game.
- B. Not very good.

PROBLEM: Cannot leave ADAT scene by pressing run/stop.

CAUSE: Spacebar is being held down. Program will not recognize run/stop while space bar is pressed.

