

UNDER FIRE!

RULEBOOK



INSIDE THE GAME MASTER'S RULEBOOK

This rulebook contains all the information needed to play *Under Fire*. It consists of three sections:

- The Under Fire Tutorial: a fast-and-easy way to get into playing the game. This will guide you into setting up one of the scenarios that come with the game. It cannot substitute for a careful study of the rules. There are many things happening underneath the surface of the game and many possible options that cannot be understood without reading the rulebook.
- The Game Master Rulebook: a complete guide explaining how to play *Under Fire*. During playtesting, we found that publishing the formulas and numbers used in calculating movement and combat did not help the player, and caused some confusion. Therefore, the rulebook will explain what the game takes into account during play, but will not release specific numbers. In the game, as in real life, expertise in combat can only be gained through experience.
- An Index to guide you through all screen prompts, and a dictionary of words that take on a special meaning when referred to during the game.
- Appendices on the weapons, vehicles, special words and an interview with the designer.

We hope you enjoy playing *Under Fire*. The Avalon Hill Game Company plans on releasing future disks containing more scenarios and units. Sending in the registration card will ensure that you are notified of their availability.

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UNDER FIRE TUTORIAL

You have just bought the game, opened the box, fainted at the size of the rules booklet, and wondered how you are ever going to start playing. Or, you are coming back to the game after playing another of our fine Avalon Hill games, and need a refresher course. Relax! This will get you quickly and easily into the game.

Everything won't be explained here. We'll tell you your options at each turn, but we'll make the decisions. This tutorial will get you started on the Strong Hold scenario. Since that scenario already has units, we will not have to purchase and outfit units, or move them into their initial positions.

All phrases that appear on the computer screen are in SMALL CAPS. Numbers that follow in parentheses also appear on the screen at that time (they're called the "default" number). You are not restricted to that number; toggle the joystick or press one of the arrow keys to see all the choices.

Special note: to move a unit, you need to press the fire button while the joystick is moved in the direction you want the unit to move. This is different from the procedure to move a cross.

When the notation (J) appears below, toggle the joystick or press an arrow key once. When the notation (F) appears, press the fire button (if you are using a joystick) or the Apple or Escape key (if you are using a keyboard).

So boot up the disk and let's start playing.

To Load The Game

1. If using a joystick or Mockingboard, plug it in before turning on the computer (joystick required on the II+). The Mockingboard and nothing else must be in slot #4. Upon booting, the game checks for their presence and will ignore them if they are plugged in later.

2. Insert the Game Master disk in the drive. Press the Caps Lock key down on the IIc and IIe keyboard. The game will not accept lower-case letter commands.

3. Turn on the computer. When you see the title screen and the command DO YOU NEED TO INITIALIZE A DISK (Y) (N)?, press the N key. The game will continue loading.

SCREEN ONE

SET UP NEW GAME: The only other option is REPLAY SAVED GAME, so we'll ignore that. (F)

SELECT GAME SCALE (48): You have 12, 24, 48, and 72 meters per position to choose from. While you will always see the same size map, the distance between each position will be different. We'll use 48. (F)

ALLOW CLEARING OF MOVE (YES): Want to change your mind after entering an order? If so, choose YES. (F)

USE SUPPLY DEPLETION RULE (YES): We strongly recommend using this rule. (F)

NUMBER OF COMBAT PHASES PER TURN (4): You have 2, 3, 4, or 6 combat phases per turn. All movement orders are carried out automatically during the 24 periods that makes up a turn. Unless you have the computer handle all combat (an option that appears later on this screen), the turn will begin with a combat phase. A number of movement phases (MPs) will pass, then a combat phase will appear.

To find the number of movement phases that will pass, check the chart below.

Combat Phases	2	3	4	6
Passing Number Of MPs	12	8	6	4

Under Fire was designed with 4 phases as the ideal, so let's use it. (F)

SEASON (SUMMER): There are four seasons, but, again, let's use the default value. (F)

USE AUDIO RESPONSE ON BUTTON PRESS (YES): Choosing YES makes the computer emit a small click when you press the fire button. (F)

HUMAN OR COMPUTER CONTROL OF TEAM 2 (HUMAN): We're assuming here that you are playing the game solitaire, so (J) (F).

SELECT SKILL LEVEL (1): Select level 3; a good opponent (J) (J) (F)

COMBAT CONTROL (PLAYER CONTROL): There are three options here. Player Control means that the player directs the fire of all units on his side. Leader Control means that the player directs the fire of all units on his side that are within 100 meters of the leader unit. Computer Control means that the computer resolves combat. In this case, select COMPUTER CONTROL with (J) (J) (F).

DESIGN YOUR OWN/PLAY PRE-SET SCENARIO (PLAY PRE-SET): Pre-set scenarios are those nine that come with the game, or any future scenario disks that The Avalon Hill Game Company will release. Players can design their own scenarios, but they are never considered "pre-set" for purposes of this prompt. (F)

ACCEPT GAME OPTIONS SELECTED (YES): If you're satisfied, so are we. (F)

SCREEN TWO

PLAY WITH EXTENDED UNITS DISK (YES): (J) (F).

REMOVE DISK/INSTALL UNITS/SCENARIO DISK. PRESS BUTTON OR (ESC) TO CONTINUE: Take out the game disk and put in the scenario disk. Make sure that the caps lock key is down when you type. The computer will not accept keyboard commands written in lower-case letters.

SELECT A NATIONALITY FOR TEAM 1 (US): There are three nationalities: United States, Germany, and Russia. All scenarios can be played by any nationality (even a US/Russian conflict!). For this scenario, we'll have the US on Team 1 and Germany on Team 2. (F)

ACCEPT GAME OPTIONS SELECTED (YES): If you were making up your own scenario, you would decide how many points each side would have, and build your team by purchasing units with those points. But in a scenario, the units are already there waiting for you. (F)

SELECT A NATIONALITY FOR TEAM 2 (GE): (F)

ACCEPT GAME OPTIONS SELECTED (YES): (F)

SCREEN THREE

CHOOSE MAP BOARD TO PLAY ON (SHADOW VALLEY): (J) (F)
SCENARIOS (STRONG HOLD): There are three scenarios for each map, making nine scenarios in all. (F)

GENERAL ORDERS FOR TEAM 1 (ATTACK OBJECTIVE AREA): Depending upon what you choose here, an objective area is "drawn" on the map. Victory points are awarded depending upon what your objective is. (F)

ACCEPT GENERAL ORDERS (YES): (F)

GENERAL ORDERS FOR TEAM 2 (ATTACK OBJECTIVE AREA): Let's make it interesting and give the Germans the responsibility of defending the objective. (J) (F)

ACCEPT GENERAL ORDERS (YES): (F)

SCREEN FOUR

The computer selects your order of battle, and you now look them over. The screen is divided into four parts. Ignore the left-hand section titled INFANTRY. This is a chart that you use when purchasing units. At the top, you can see your squad's nationality and the number of units you have.

You have only one option: to review your units. (F)

The first unit appears at the bottom. It's identified as US #1. At the bottom the screen is the command REVIEW NEXT UNIT. Toggling the joystick alternates this message with DELETE THIS UNIT. While your Order of Battle can be changed, simply review the next unit by pressing the fire button. (F)

As you scroll through your units, you'll see a variety of weapons. Although the computer will be handling combat during the tutorial, note that when you choose the PLAYER CONTROL combat option, you will decide what weapons that squad will be using in each combat phase.

Anyway, keep pressing the fire button until you see TEAM COMPLETE/END BUYING: NO. (J) (F)

PUT GAME MASTER INTO DRIVE #1 PRESS BUTTON OR (ESC) TO CONTINUE: Remove the Units/Scenario disk and insert the Game Master disk back into the drive. (F)

SCREEN FIVE

Welcome to the heart of *Under Fire*. Once you understand this part, the rest comes easy, because everything else is just variations on what is explained below.

What you are seeing is an overview of the entire map. In the center of the screen is the note TEAM 1. This means that what follows should only be seen by that player, because he'll be entering orders. If the SITUATION MAP is chosen, all of his units will appear, along with any enemy units that they can see.

Below the map is a line with notation TEAM 1, PRE-SET UNITS, and PERIOD. The number under the PERIOD sign is a special type of clock. The number to the left of the colon (:) sign is the turn number. The number to the right is the period number. There are 24 periods in one turn, and they will be counted off like seconds as the computer resolves all movement orders.

At the bottom is the headquarters of the game, with the messages SEARCH, SITUATION MAP, MOVE UNITS and PRE-SET DONE displayed. Each turn will begin with the headquarters (H/Q) screen. At this stage of the game, you get to look at your units, find out where they are, and where the Objective Area is.

Let's look at each of the messages and see what they do. Toggle the joystick and watch the black box move about.

SITUATION MAP: this map shows the overall situation. The flashing box is the Objective Area. Since your General Order is to attack the Objective Area, to win the game, your squads must occupy the area. The blinking will stop when you press a button. When the blinking is stopped, you'll be able to choose another option from the menu.

MOVE UNITS: ignore this command; it is used to change the initial location of any of your units.

SEARCH: this takes you into a second menu with the following messages: IDENTIFY UNIT, TACTICAL MAP, STRATEGIC MAP and RETURN TO H/Q. The tactical and strategic maps will display the terrain on two different scales. The tactical

map has the highest resolution and the most detail, the strategic map shows more of the map. IDENTIFY UNITS will, by moving the cursor over a unit, display its type and weapons.

Moving about on all these maps without affecting your units is easy. In the direct center of the map is a small cross. To move the cross, press the Space Bar. It will move in the direction of the compass arrow in the lower right hand corner of the screen. Change the direction of the compass arrow by pressing the left arrow or right arrow key. Pressing the fire button with the joystick pointing straight up will return you to the menu at the bottom of the screen.

Special note: if you want to move your units on the Tactical Map, you must go to the SEARCH command and order the Tactical Map. The computer will consider this to be the new map. Once the Tactical Map has been chosen, the computer will show this map during the NEW ORDERS option.

Thumb through the various menus until you are sure you understand their function. When you are finished, return to H/Q and move the black box to the PRE-SET DONE prompt. (F)

There will be a pause, then the disk drive will whirr, and the first turn will begin.

FIRST TURN

WOULD YOU LIKE TO SAVE THIS GAME (NO): not at this time. (F)

WOULD YOU LIKE TO END THIS GAME (NO): DITTO. (F)

We're back in the H/Q screen, but there are two new commands: NEW ORDERS and EXECUTE ORDERS. The latter command is used only when you want to end your turn.

NEW ORDERS: select the unit you want to give orders to. Let's start with the first unit. (F)

You will see unit US #1 in the center of the map. Press the fire button. Move the black box over to MOVE and press the fire button. You now have a choice of STANDARD or SCOUTING movement. Scouting takes more time, but protects your men. Choose Standard movement. (F)

There are five commands to choose from. CLEAR wipes out all previous orders given to that unit this turn. But if you order your unit to go on an Extended Move, or Load or Unload, its orders cannot be cleared. WAIT orders the unit to wait as many periods as you toggle the joystick. DEPLOY tells the unit to dig in. DONE returns to the previous menu. Move the black box over to MOVE and press the button. (F)

There is no change to the screen, but you can now give movement orders to that unit. Press the fire button with the joystick depressed in the direction you want the unit to move. The number under the PERIOD sign changed, counting off the number of periods it will take that unit to reach that position. Continue to move the unit until you are finished, or the unit runs out of periods (it can't go farther than 24 periods). Press the fire button with the joystick straight up to stop movement. Move the black box over to DONE and press the button. (F)

Continue to give orders to your units until you are done. If you think you are stuck in an option, you can either scroll (by toggling the joystick) and DONE will appear, or press the fire button.

When finished, return to the H/Q menu (it's an option on the SELECT UNIT prompt). If you check the SITUATION MAP now, you will see the result of your movement orders. Place the black box over to EXECUTE ORDERS and press the fire button. (F)

EXECUTE ORDERS

When you see the above words appear in the middle of the screen, press the Space Bar. The computer will think, then you will see COMBAT ORDERS in the center of the screen, and the disk drive will whirr. Press the Space Bar

again when EXECUTE ORDERS appears in the center, and the computer will think some more. It is resolving all line of sight questions, and if a unit is spotted, it will identify it at the bottom of the screen. The PERIOD clock will tick as each period's movement is resolved, and when it reaches a combat period, will decide if there is any combat to resolve. Under the Computer Control combat option, units can fire only if they can see an enemy unit; therefore, if no units are sighted, there is no combat.

The TOGGLE TO CONT prompt appears just before the next combat phase. It is pointing out what units can be seen. Toggle the joystick to see the next sighted unit. Pressing the fire button will suppress the message for the rest of the combat phase.

While it may take two or three minutes to resolve the movement, remember the awesome job the computer has to do. The game will move faster when there are fewer units involved.

Note also that sighting can be one way. Your units may be spotted by the enemy, but they may not reveal themselves to you. So be cautious and be careful!

UNIT ORGANIZATION TEAM 1

ENTER ORGANIZATION PHASE: toggling the joystick will change ENTER to SKIP. You use this phase to drop weapons, integrate units or bail out of damaged tanks. Since we won't be needing this, make sure SKIP appears on the screen and press the fire button. (F)

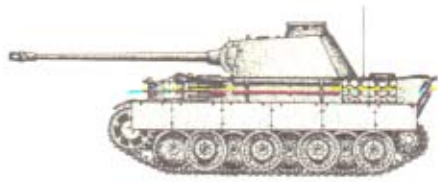
You have now reached the end of the first turn. There is a lot we haven't explained, so we strongly urge that you read the rules booklet as you play a few more turns. Take command, sir!

DON'T PANIC!

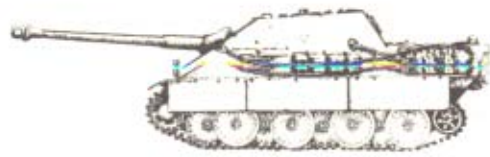
This rulebook is long and complex, filled with clauses and sub-clauses, and sometimes contradictory and confusing jargon! Before reading this rulebook, we recommend that an advanced course in Military Preparedness be completed at either West Point or Sandhurst.

Just kidding. While the *Under Fire* rules are long, it consists largely of explanations for the screen prompts. The

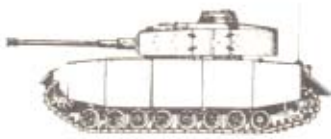
game is played by selecting an option from a list of several, called a "menu." Some commands may need a name typed in, a yes or no answer, or a cross or unit moved about the map. We strongly suggest reading the rulebook and playing a scenario alongside it. It will be easier to play with each succeeding attempt, until the rulebook won't be needed at all. An index to the screen prompts and a dictionary of special words are included.



PzKw V Panther Tank (Ger)



Jagdpanther V SP Gun (Ger)



PzKw IV Tank (Ger)



Hummel SP Gun (Ger)



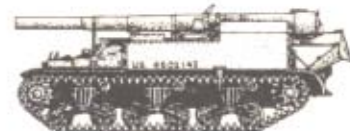
Sherman Tank (US)



M/4 SP Gun (US)



M/10 Wolverine Tank (US)



M/12 SP Gun (US)



T34/76C Tank (Rus)



SU/76 SP Gun (Rus)



KV/85 Tank (Rus)



SU/152 SP Gun (Rus)



1. INTRODUCTION

The sound of gunfire in the distance. The comforting rumble of friendly tanks nearby. A stone building that must be searched. Leading a group of men of uncertain training on a mission from which few will return. The sense of expectancy punctuated by the staccato burst of automatic fire from a hidden enemy.

This is *Under Fire*, the tactical game of World War II land combat that is unlike any boardgame and light-years beyond any computer game. It is the full realization of what can be done with a computer. It requires less rules learning than a boardgame, but more knowledge in the area that counts most on the firing line: devising the tactics necessary to defeat an armed foe.

The rulebook is organized to be read while playing the game. *Under Fire* simulates tactical warfare in a different way. It uses formulas that cannot be understood by play-

ing the game. Some we will not explain even in the rulebook, because they will not help you play the game any better. We recommend patience. Spending time with the rulebook first will reduce a number of questions later.

How *Under Fire* simulates movement and combat is different than what is found in other games. We recommend reading carefully the movement section, and Appendix: The *Under Fire* Interview to understand the reasoning behind the rules.



2. PLAYING THE GAME

Under Fire may be played with a joystick and Mockingboard™. The joystick is required for the Apple® II+, but not for the IIe and IIc. The keyboard can be used with all computers. Plug the joystick or Mockingboard in before turning on the computer. Also, we cannot guarantee that Under Fire will run on a computer that has additional original or third party hardware like off-brand disk drives, 80-column cards or CP/M boards. If you're having trouble loading the game, take out the extra cards and see if that will fix the problem.

Only Mockingboard D and C and a self-centering joystick will work with *Under Fire*.

To Load The Game

1. If using a joystick or Mockingboard, plug it in before turning on the computer (joystick required on the II+). The Mockingboard and nothing else must be in slot #4. Upon booting, the program checks for their presence and will ignore them if they are plugged in later.

2. Insert the Game Master disk in the drive. Press the Caps Lock key down on the IIc and IIe keyboard. The program will not accept lower-case letter commands.

3. Turn on the computer. The title picture will appear.

How The Rules Booklet Is Organized

This rulebook follows the outline of the game. It begins with a discussion of the set-up procedures and ends with a section on the victory screen. Most of the rulebook will discuss how the computer responds to the menu selections. In the rules booklet, all screen prompts and possible responses will be in a typeface called SMALL CAPS. Beside each response will be the computer's action if it is selected.

For example, this is what the game's first prompt (seen after the disk is booted) looks like in the rules booklet:

DO YOU NEED TO INITIALIZE A DISK (Y)|(N)?

Y: a blank disk that is initialized can save a scenario of

your design or a game in-progress. It is not needed to play a scenario in one sitting. The Mapmaker and Game Master programs initialize disks in a different way. A disk initialized by the Game Master program can save up to four games (either newly-created scenarios or games in-progress). A disk initialized by the Mapmaker program can save up to five newly-created maps. So, to create and save both maps and scenarios, initialize two disks: one by the Game Master and one by the Mapmaker. Player-created maps and scenarios cannot be saved to the same disk.

If you don't have an initialized disk, type Y and follow the prompts.

N: go on to the next question.

Using The Keyboard And Joystick

While the keyboard is used to answer yes/no questions or to type in a name, three sets of keys – and their joystick equivalents – are used most of the time to enter orders:

Space Bar or Arrow Keys/Toggle Joystick: used to scroll through the available options. On some options, the arrow keys are used in place of the Space Bar, like the Pre-Set Units menu consisting of SEARCH, SITUATION MAP, MOVE UNITS and PRE-SET DONE.

Apple Keys or Escape Key/Fire Button: used to select an option. (The Apple Keys contain the corporate logo of the Apple Computer Corporation. It is not found on the II+ keyboard; use the Escape key instead.)

Arrow Keys: at certain times, a compass will appear in the lower right corner of the screen, indicating the direction the chosen unit or cross will move if the Space Bar is pressed. The Arrow Keys are used to change the direction of the arrow. The left arrow key moves it counterclockwise; the right arrow key clockwise. On the IIc and the IIe, the up and down arrows work as well.

To move a unit or cross with the joystick, press the fire button with the joystick pressed in the direction it is to move.

Also, when the words EXECUTING COMMANDS, COMBAT ORDERS or COMBAT RESOLUTION appear in the center of the screen, the computer is waiting until the fire button or Space Bar is pressed before going on. See *Section 7: Execute Orders* for more information.

During two-player games, one player can use the keyboard and the other the joystick.

To keep the instructions clear, we will refer to the joystick operation only.

An Overview Of The Game

Under Fire is a complex game. This section describes the organization of a turn, but remember that there will be much more to do than just move and fight. The number of options each unit has depends upon its function, location on the map, and the tactical situation.

Under Fire is played in turns. A turn is a specific piece of time, broken down into a strict sequence of activities called phases. Only certain types of actions may be performed in a phase. For example: movement orders are given during the Movement Phase and nowhere else.

At the completion of the final turn, or when all units on one side have been destroyed, the game ends and the victory screen is displayed.

Each player's team performs two major activities each turn: movement and combat. When all movement orders have been entered, the computer takes over. Each turn is broken down into 24 periods. Think of them as seconds on a clock. As the computer ticks off the periods, each unit is moved a little bit and the computer checks to see if opposing units sight each other.

After a pre-set number of periods has passed, movement is halted and units receive their combat orders. Combat orders are optional. The computer will take over again and continue moving the units. Some will follow their movement orders, while others may dive for cover, retreat, or be unable to move as a result of combat.

There is a minimum of two and a maximum of six combat phases per turn (this is chosen during the Set-Up phase), and the player may have the computer enter combat orders for both teams.

During the Unit Organization phase, units may integrate, increase their movement speed by dropping heavy weapons or ammo, take on ammunition supply or bail-out of vehicles. Then the turn ends and another one begins.

Under Fire Game Summary

(Before The Game Begins)

Setting Up Phase

Chosen: rules, weather, number of combat phases, computer opponent, pre-set scenario (one or nine coming with the game) or design your own.

Pre-Set Units Phase

Chosen: objective area, general orders and starting location of each unit.

(The Turn Begins)

Movement Phase

Chosen: where units move, how fast and how they'll deploy (dug-in, on 2nd floor, be resupplied, or loading and unloading from vehicles).

Execute Orders Phase

Chosen: combat

Unit Organization Phase

Chosen: take on supply, drop supply or weapons, bail-out of vehicles, or integrate units.

(At The End Of The Game)

Victory Phase



3. SETTING UP

Think of the scenario as a structure, and each option in this phase as a part of that structure. Under Fire was designed to give as much latitude to the players as possible. If you're looking for an armor scenario emphasizing guns blazing away at each other, select the 72 scale and drop the supply rules. If you want to simulate leadership and the chaotic nature of battle, put in supply and choose the Leader Combat option. In this phase, you can make Under Fire the tactical game you've always wanted to play.

Upon booting the disk, the *Under Fire* title screen will appear and the following prompts will appear:

DO YOU NEED TO INITIALIZE A DISK [Y](N)?

Y: a blank disk that is initialized can save a scenario of your design or a game in-progress. It is not needed to play a scenario in one sitting. The Mapmaker and Game Master programs initialize disks in a different ways. A disk initialized by the Game Master program can save up to four games (either newly-created scenarios or games in-progress). A disk initialized by the Mapmaker program can save up to five newly-created maps. So, to create and save both maps and scenarios, initialize two disks: one by the Game Master

and one by the Mapmaker. Player-created maps and scenarios cannot be saved to the same disk.

If you don't have an initialized disk, type Y and follow the prompts.

N: go on to the next question.

SET-UP

NEW GAME: will start a new game. Toggling the joystick also reveals REPLAY SAVED GAME; this will continue a game that was saved to a disk. The scenarios included in *Under Fire* are considered by the computer to be a new game. They're also called PRE-SET scenarios since the units involved have already been moved into position.

When the REPLAY SAVED GAME option is chosen, a prompt will appear to insert the disk the saved game is on. A list of games on that disk will be displayed along with the CHANGE GAME SAVE DISK option. If a saved game is selected, a list of the options will be displayed, followed by the Situation Map, Objective Area and General Orders.

SELECT GAME SCALE

12, 24, 48, 72: the map board is divided into a chessboard-like pattern called positions. The pattern does not show, but they can be counted off while checking line of sight or moving units. There are close to 3,000 possible positions on the map. The game scale is the size of each position, measured in meters. Thus, selecting a game scale of 12 means that each position will measure 12 meters by 12 meters. The scale is used to calculate the range of weapons and their effect in combat.

Movement is handled differently than in other games. All units move relative to each other, not relative to the size of the terrain. That is, no matter what the scale is, a Panzer IV on a road will always move faster, relative to an infantry unit travelling through the same terrain. This way, it costs the same number of periods to enter a position, no matter what the scale is.

At scale 12, the *Under Fire* map measures 542 meters by 768 meters. A German or U.S. infantry squad would fit snugly into a position without suffering a negative modifier in combat for having men too close together. At scale 72, the map is 3.3 kilometers (2.1 miles) by 4.6 kilometers (2.9 miles). This scale would be ideal for fighting armor scenarios.

ALLOW CLEARING OF MOVES

YES: this option permits erasing a unit's move that was entered that turn, but before the EXECUTE ORDERS option is chosen. A unit ordered to go on an Extended Move, or to be loaded or unloaded from a vehicle, cannot have their orders cleared. Those units are identified by the number under the PERIOD clock turning black. See Extended Movement in *Section 5: Movement* for more information.

NO: once a unit's move is selected, it cannot be changed.

USE SUPPLY DEPLETION RULE

YES: units can run out of ammunition. Supply trucks and halftracks are available to resupply units. We strongly recommend using the supply rules. It prevents players from indiscriminately firing each combat phase.

NO: units will have unlimited ammunition.

NUMBER OF COMBAT PHASES PER TURN

2, 3, 4, 6: combat phases are spread evenly throughout a turn. Therefore, if 3 phases was selected, the Execute Orders phase will consist of a combat phase at period :00, eight movement periods, a combat phase at period :08, eight more movement periods, a combat phase at period :16, and eight movement periods.

This phase represents an opportunity for units to engage in combat. With the supply rule in effect, a unit that fires in every phase will soon run out of ammunition. Since units are penalized heavily for moving and firing in the same turn, better players will learn to coordinate movement with combat. For example: in a game with 4 combat phases, if two squads are moving against an enemy position, one squad would fire on the enemy at periods :00 and :06. The second squad would wait for six periods, then move from its cover and attempt to reach the position before period :12 (the next opportunity for combat). By that time, the enemy unit may have been broken or decimated as a result of combat, or at least forced into a Defensive posture, and therefore unable to fire back.

With the combination of supply rules and multiple com-

bat phases, *Under Fire* simulates the need to coordinate attacks among friendly units.

SEASON

The effects of weather are as follows:

Summer: movement and line of sight are unaffected, rivers may be forded by vehicles.

Fall: movement and vehicle fording are the same as summer, but the defoliated trees extends the line of sight through the first tree position.

Winter: line of sight is the same as fall, rivers and lakes are frozen and crossable by vehicles. All units except Russians move one class slower. There are three classes of infantry - light, medium and heavy - and three classes of vehicles: fast, medium and slow. For example: medium German infantry will move like heavy infantry in winter. Heavy infantry and slow vehicles cannot move any slower. See Burden Value in *Section 3*, and the Time Effects Chart in *Section 5: Movement*, for further explanation of movement classes.

Spring: all units, except heavy infantry and slow vehicles, move one movement class slower. Rivers cannot be forded by vehicles. Line of sight returns to summer conditions.

USE AUDIO RESPONSE ON BUTTON PRESS

YES: a click will sound whenever an option has been chosen. If you are unsure a command has been accepted, press the fire button again. Three clicks or no clicks means that the computer has received the command, and is thinking for a moment.

NO: the computer will remain silent.

HUMAN OR COMPUTER CONTROL OF TEAM 2

HUMAN: both teams available for human command.

COMPUTER: the computer will control Team 2. If this is chosen, the next option to appear will be SELECT SKILL LEVEL. This orders the computer to play like a novice (Level 1) or an expert (Level 4).

Skill levels represent how the computer will handle movement and combat orders. The higher the skill level, the more depth there will be in the computer's movement and combat orders. For example, at Level 1, a unit will not go into a defensive posture during the combat phase, even if it sights enemy units. At Level 3, however, it would.

COMBAT CONTROL:

PLAYER CONTROL: the player will enter all combat orders.

LEADER CONTROL: Leader units are available for purchase. When playing a pre-set scenario, check to make sure one was assigned to both teams. The player will enter combat orders of all units within 100 meters of a Leader unit they can see, and all vehicles regardless of leader presence.

COMPUTER CONTROL: the leader of each unit (handled by the computer) will decide how and where his men will fire. Each unit will attack according to the tactical situation as they see it that is, if attacking warrants exposing its position. They will sometimes order split fire and indirect fire. The computer will not consider whose Team a unit belongs to when it decides on its combat order.

SCENARIO

PLAY PRE-SET: will play a scenario included with the game (or purchased separately). The nine scenarios in the game already have the map designed and the units purchased and set up, so it is a quick way to play a game.

DESIGN YOUR OWN: each player will "buy" his forces using points, and decide their initial position, which map to play on, and the victory conditions.

ACCEPT GAME OPTIONS SELECTED

YES: the computer will go on to the next prompt.

NO: return to NEW GAME prompt and start again.

The remainder of the section is divided into two parts. If playing a pre-set scenario, read *Section 3A: Scenarios*. If designing your own scenario, read *Section 3B: Building Your Team*. Read only that section which applies before going on to *Section 4*. Information common to both sections has been repeated.

3A. THE SCENARIOS

There are nine scenarios available with the game. Each lasts ten turns, and their victory conditions depend upon the General Orders chosen for each side. *Under Fire* does not declare who won a scenario; that is left for the players to decide.

PLAY WITH EXTENDED CAPABILITY DISK

YES: this disk is sold separately, and contains additional units for play with *Under Fire*. To use this disk, turn to its rules booklet for further instructions.

NO: go on to the next prompt.

REMOVE DISK/INSTALL SCENARIO/UNITS DISK

Remove the disk in the drive and replace it with the Units/Scenario disk.

SELECT A NATIONALITY FOR TEAM 1

US, GE, RU: *Under Fire* contains units from the United States, Germany and the Soviet Union. In a solitaire game, the computer will control Team 2.

CHOOSE MAP BOARD TO PLAY ON

LIONS RIDGE, SHADOW VALLEY, DEMONS MAZE: enclosed in the rules booklet are full-color reproductions of the maps. There are three scenarios available for each map:

ACHILLES JUNCTION, STRONG HOLD, and CITY BLITZ are the attack/defend scenarios. ROAD TO RUIN, CUT OFF and RELIEF COLUMN are the delay/breakout scenarios. POWDER KEG, ONE MORE YARD and HOUSE TO HOUSE are meeting engagements.

The order of battle for each scenario changes from game to game.

GENERAL ORDERS

There are five General Orders available to each team. They represent the orders that come from the higher-ups in the military hierarchy. Each side is assigned a General Order, which they must fulfill in order to win. The teams in the pre-set scenarios are limited in their choice of orders.

ATTACK OBJECTIVE AREA: the team must occupy the objective area to win.

DEFEND OBJECTIVE AREA: a team must maintain a larger force in the objective area than the enemy to win.

SEARCH AND DESTROY ENEMY: a team must destroy the enemy to win, regardless of the number of casualties they suffered.

BREAKOUT: a team must exit from the mapboard at a pre-determined location. The Objective Area will mark the edge of the map they must exit through.

DELAY ENEMY: a team must prevent the enemy units from reaching the objective area.

Both teams cannot choose Attack Objective or Defend Objective. If they do, Team 2 will be assigned to Defend Objective, and set the units up accordingly.

REVIEW YOUR UNITS

A pre-set scenario already has the order of battle chosen for each side. At this point, both players will review their team's composition and make any changes. Since they do not begin with any build points, they must delete units (literally cashing in how many points they are worth) before they can buy more.

If a player decides to buy more units, he must read *Section 3B: Building Your Team*.

At the top of the screen is the nationality of Team 1. Below it is the number of total points it has. If a unit is deleted from the roster, its point value is added to this pool. Beside it is the number of units in the team.

On the left side of the screen is the cost chart. The numbers show the cost of purchasing a Green (GN), Seasoned (SD) and Crack (CK) units. The better a unit's morale, the better it will fire and hang together in combat. Green units will "break" in situations where Crack units will not.

The prompt REVIEW YOUR UNITS appears in the box on the right side of the screen. This is the only possible option. Press the fire button. The first unit will appear at the bottom of the screen. On the left side is a list of its weapons. For example, if a US or German crack rifle squad was selected, the notation 8-RIFLES 12 and 2-SUB-MG 12 will appear: this squad has eight rifles and two submachine guns, each of which can make 12 attacks. If the Supply Depletion rule was chosen, the number of attacks left decreases by one (by four in the case of hand grenades) for each combat phase the unit uses that weapon.

See the *Men, Vehicles and Equipment* appendix in the back of the rules booklet for a specialized discussion of each unit. For now, it is worth noting that all squads of the same weapon type are not the same: the composition of a German rifle squad is different from a Russian rifle squad, for example.

The BURDEN is the number of burden points the units has, and the unit's VALUE in points. Note that the number of points received for deleting a unit is not the same as its purchase cost. This is to prevent players from "buying up" too easily. In a defensive scenario, where seven units are facing nine attacking squads, adding a heavy machine gun to the defending squad could completely unbalance the scenario.

The weapons (and their abbreviations) are: Submachine Guns (-SUB/MG); Light, Medium and Heavy Machine Guns (/MG); Smoke Grenades (HND/GR/SM); Fragmentation Grenades (HND/GR/FG); Fragmentation Rifle Grenades (RFL/GR/FG); Flamethrowers (FLM/THRWR); and Satchel Charges (SCHL/CHRG).

Toggling the joystick at this point will show two options at the bottom: REVIEW NEXT UNIT and DELETE THIS UNIT. If the delete option is chosen, the unit's point value is returned to the pool and the following prompt appears:

TEAM COMPLETE/END BUYING

YES: if Team 1 chose this, the REVIEW YOUR UNITS prompt for Team 2 will appear. If Team 2 chose this, the Setting Up phase is completed, and the game moves into the Pre-Set Units Phase. Read the Burden Points and Objective Area sections below before moving to Section 4.

NO: the option after this is to CONTINUE BUYING or REVIEW YOUR UNITS. Since unit costs vary, we suggest deleting all the units you wish before buying new units.

If buying new units, read *Section 3B: Building Your Team* for details on the purchasing procedure. While the units generated by the computer will be placed in their initial position, all new units will be stacked in the center and must be moved into play. *Section 4: Pre-Set Units* gives details on that procedure.

Burden Points

A unit's Burden value is a measure of the weight that the unit is carrying. Vehicles do not have a Burden value. The value measures how fast the unit can move, according to the following chart:

Burden Value	Description
0	The unit is unable to move on its own and requires transportation.
1-20	The unit moves at the speed of light infantry.
21-40	The unit moves at the speed of medium infantry.
41-100	The unit moves at the speed of heavy infantry.
101+	The unit cannot move at all except by a transport vehicle or dropping weapons.

The chart in *Section 5: Movement* gives the movement rate for each type of unit. The Burden value will change as weapons are added and deleted from the unit during the Unit Organization phase. As a unit fires its weapons, its Burden value will also decrease. This is especially noticeable with heavy weapons like machine guns and mortars.

Tactical note: it is possible to buy a mortar unit and a supply vehicle. Once the unit is moved into position, the vehicle can burden it with plenty of ammunition. The mortar would be unable to move, but could fire for the rest of the game.

Objective Area

Wars are fought to occupy terrain: buildings, ridges; positions that allow squads to deploy their fire more effectively and bring the battle to the enemy. In *Under Fire*, this is expressed by designating an Objective Area.

Objective Areas have already been selected for the scenarios that come with the game. If playing a Breakout/Delay Enemy scenario, the Objective Area is over the map edge the Team must exit through to win.

3B. BUILDING YOUR TEAM

In the "design your own" scenarios, each side builds its team by spending points. Each squad, gun or vehicle costs a certain number of points depending upon its type, its morale, and what weapons are added to it. Two players starting with the same number of points will be able to "build" teams that are roughly equivalent in quality.

There are four steps in this process:

- 1) selecting the nationalities of the teams;
- 2) assigning the number of build points and buying the units;
- 3) selecting the game map and victory objectives, and;
- 4) placing the units in their starting position.

After the DESIGN YOUR OWN option is chosen, and the ACCEPT GAME OPTIONS SELECTED prompt has been answered YES, the following will appear:

PUT MAP BOARD DISK INTO DRIVE #1

Take out the Game Master disk and place the map disk into the drive and hit any key.

ENTER THE NAME OF THE MAP BOARD

Type in the name of the board and press the Return key. To get a list of map names on the disk, press the Return key. The name of each map will appear. Continue pressing the Return key until the prompt reappears. If no map has been saved, NO MAPS ON DISK will appear.

PLAY WITH EXTENDED CAPABILITY DISK

YES: this disk is sold separately, and contains additional units for play with *Under Fire*. Follow the instructions that

came with it.

NO: when prompted, place the Units/Scenario disk in the drive and press the fire button.

SELECT A NATIONALITY FOR TEAM 1

US, GE, RU: this game contains units from the United States, Germany and Russia. In the solitaire game, the computer will control Team 2.

ENTER NUMBER OF POINTS FOR TEAM 1

0-9: enter a three-numbered digit by selecting a number for the hundreds column, a number for the tens and a number for the ones column. (Example: to give a team 105 points, scroll through and select a "1," then a "0," then a "5"). Assigning 999 points will give that team an unlimited number of points.

MAXIMUM NUMBER OF UNITS FOR TEAM 1

1-30: no more than 32 units may play. If you run out of points before reaching the maximum number, you cannot purchase any more units.

Purchasing Units

At the top of the screen is the nationality of Team 1, below it the number of total points it has. When a unit is armed and accepted, this number will show how many points are left. Beside it is the maximum number of units that the team can buy.

On the left side of the screen is the cost chart. The numbers show the cost of purchasing a Green (GN), Seasoned (SD) and Crack (CK) unit. Selecting the MORTAR, GUN and VEHICLE options will display submenus showing specific types of ordnance. To leave a submenu without purchasing a unit, scroll until the title of the option is displayed, then press the fire button. The black box will appear around the submenu title and the scrolling through the chart may continue.

See the *Men, Vehicles and Equipment* appendix in the back of the Mapmaker rules booklet for a description of each unit. For now, it is worth noting that all squads are not the same: the composition of a German rifle squad is different from a Russian rifle squad, for example.

After a unit is selected, choose its morale. The better a unit's morale, the better it will fire and hang together in combat. Green units will "break" in situations where Crack units will not. When the morale is selected, a more complete description of the unit will appear. On the left side is a list of its weapons. For example, if a US or German crack rifle squad is selected, the notation 8-RIFLES 12 and 2-SUB/MG 12 will appear. This squad has eight rifles and two sub-machine guns (both of which can make 12 attacks). If the Supply Depletion rule was chosen, the number of attacks left decreases by one (by four in the case of hand grenades) for each combat phase the unit uses that weapon.

The BURDEN is the number of burden points the unit has, and its VALUE in points.

Type in the leader's name (eight letters maximum) and press the Return key. On the right side of the screen will appear a list of support and personal weapons. These weapons cost points (P/V, for Point Value) and add to the squad's Burden value. Note that Engineering squads and Leaders will have satchel charges and flamethrowers available to them only, and that Leader units can purchase indirect fire in the form of Light, Medium and Heavy Artillery.

The weapons (and their abbreviations) are: Submachine Guns (-SUB/MG); Light, Medium and Heavy Machine Guns (/MG); Smoke Grenades (HND/GR/SM); Fragmentation Grenades (HND/GR/FG); Fragmentation Rifle Grenades (RFL/GR/FG); Flamethrowers (FLM/THRWR); and Satchel Charges (SCHL/CHRG).

Submachine guns are considered personal weapons. Buying them means that the men are exchanging their rifles

for them.

No more than four support weapons may be added to a unit. No more than 28 hand grenades of each type (fragmentation and smoke) may be purchased. Beyond that, units are limited only by how many points are left, and how much their equipment burdens them.

To finish buying, scroll down to beyond the last weapon in the list. When the word **DONE** appears, press the fire button. You can then **ACCEPT** or **REJECT** the unit, then either purchase another unit, or **REVIEW** the team. If the **REVIEW** option is chosen, you may quit buying units after the last unit appears.

When both sides have finished purchasing units, it is time to set up the units on the map. Put the Game Master disk into the disk drive when prompted.

Burden Points

A unit's Burden value is a measure of the weight that the unit is carrying. Vehicles do not have a Burden value. The value represents how fast the unit can move, according to the following chart:

Burden Value	Description
0	The unit is unable to move on its own and requires transportation.
1-20	The unit moves at the speed of light infantry.
21-40	The unit moves at the speed of medium infantry.
41-100	The unit moves at the speed of heavy infantry.
101+	The unit cannot move at all except by a transport vehicle or dropping weapons.

This number will change as weapons are added and deleted from the unit during the Unit Organization phase. As a unit fires its weapons, its Burden value will also decrease. This is especially noticeable with heavy weapons like machine guns and mortars.

Tactical note: it is possible to buy a mortar unit and a supply vehicle. Once the unit is moved into position, the vehicle can burden it with plenty of ammunition. The mortar would be unable to move, but could fire for the rest of the game.

Set Objective Area

Wars are fought to occupy terrain: buildings, ridges; positions that allow squads to deploy their fire more effectively and bring the battle to the enemy. In *Under Fire*, this is expressed by designating an Objective Area.

An Objective Area is drawn on the Situation Map by "staking down" the opposite corners of a box. One corner is staked down, and as the other corner is moved about, a box will automatically be drawn.

When the prompt **SET OBJECTIVE AREA** appears, a small flashing dot can be seen in the center of the Situation Map, and a compass in the lower right corner. Since the Objective Area can be rejected, feel free to play with this concept before going further. You may anchor each corner of the Objective Area anywhere on the map, but once the first corner is staked, it cannot be moved again. When the prompt **ACCEPT OBJECTIVE AREA** appears, toggling the joystick will reveal the **REJECT** option.

If preparing a Breakout/Delay Enemy scenario, place the Objective Area over the map edge the Team must exit through to win. Once a unit breaking out enters the Objective Area, it is removed from the map.

General Orders

There are five General Orders available to each team. They represent the orders that come from the higher-ups in the military hierarchy. Each side is assigned a General Order, which they must fulfill in order to win.

ATTACK OBJECTIVE AREA: the team must occupy the objective area to win.

DEFEND OBJECTIVE AREA: a team must maintain a larger force in the objective area than the enemy to win.

SEARCH AND DESTROY ENEMY: a team must destroy the enemy to win, regardless of the number of casualties they suffered.

BREAKOUT: a team must exit from the mapboard at a predetermined location. The Objective Area will mark the edge of the map they must exit through.

DELAY ENEMY: a team must prevent the enemy units from reaching the objective area.

Both teams cannot choose Attack Objective or Defend Objective. If they do, Team 2 will be assigned to Defend Objective, and set the units up accordingly.

Creating Your Own Scenarios

We have been deliberately vague about the rules under which you may create your own scenarios; giving the widest possible latitude will extend your enjoyment of the game. But we can suggest two ways to construct an *Under Fire* scenario.

In a manner similar to boardgames, both players can agree on the Objective Area and General Orders for both sides. Each side begins with 600 to 800 points and can build up to 16 squads.

Or, if you really want to be devious, try a "blind man's bluff" scenario:

Team 1: 600 points. Limited to paratroop units only. Sets Objective Area (limited to a single building or bridge).

General Orders: Attack Objective Area only.

Set up limitations: none

Team 2: 900 points. No limit on unit selection. Forbidden to view the Situation Map.

General Orders: Search and Destroy Enemy only.

Set up limitations: none

Scenario lasts for 15 turns.

This scenario can simulate a parachute drop behind enemy lines. Team 1 doesn't know what he is dropping into enemy lines. Team 1 doesn't know what he is dropping into (a mass of weak infantry, or a powerful armor unit), and Team 2 doesn't know where the enemy is, or its objective. If a friend builds Team 1 and saves the initial set-up to disk, it would be a challenging solitaire scenario. Just remember not to look when the computers shows the Situation Map while loading the scenario.

See *Appendix: The Under Fire Interview* for more suggestions on scenario building.

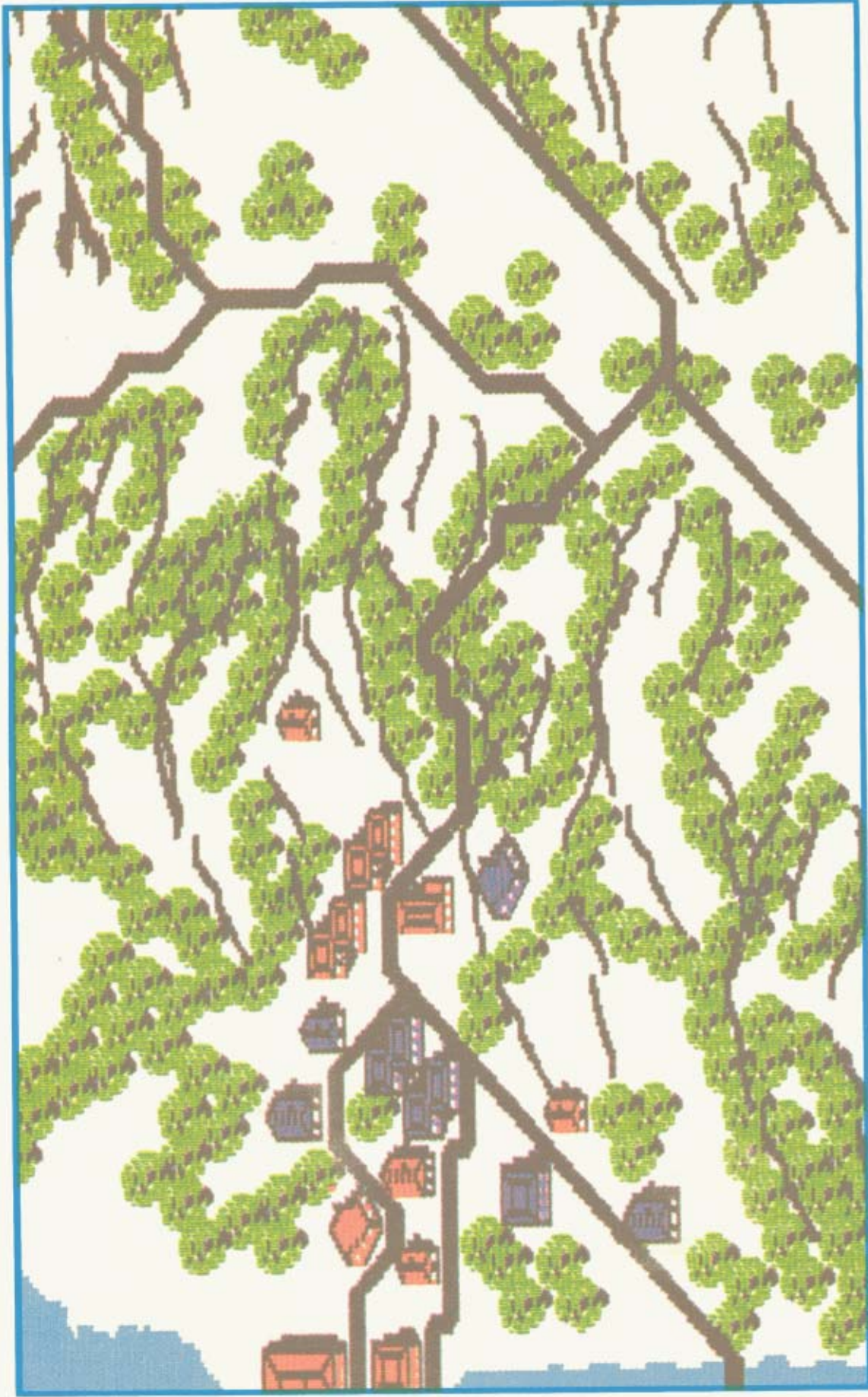
ENTER LAST GAME TURN

1-30: self-explanatory, except to note that on the last game turn, there is an option to continue playing.



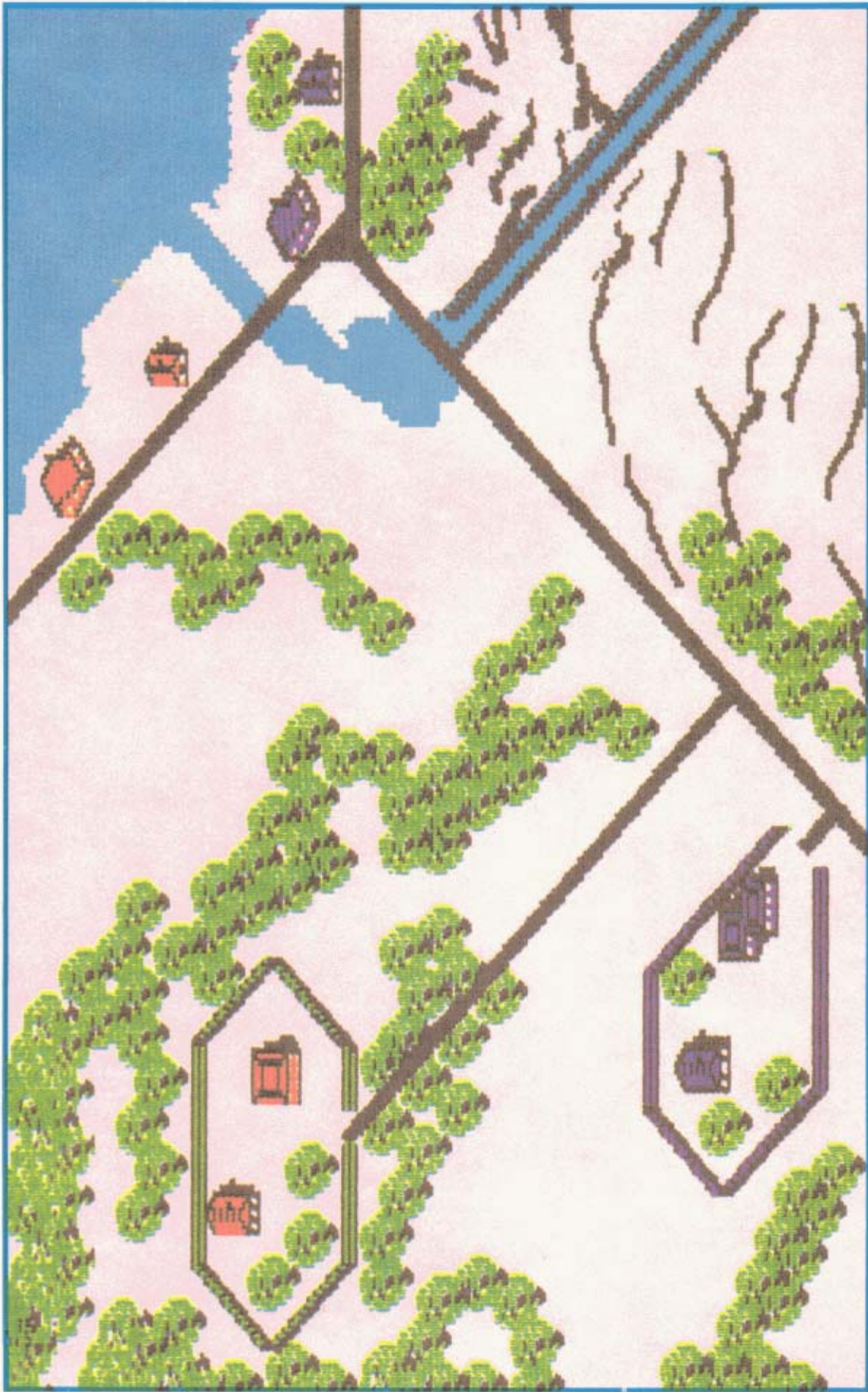
Demon's Maze Scenario Map for *Under Fire*. Permission granted to reproduce for player's use only.
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DEMON'S MAZE



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LION'S RIDGE



Shadow Valley Scenario Map for *Under Fire*. Permission granted to reproduce for player's use only.
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SHADOW VALLEY

The Scenarios

Due to its variety and flexibility in nationality and orders of battle, the nine scenarios in the game are not based on one historical incident. They are not ahistorical, however; they recreate tactical situations that infantrymen faced throughout World War II. This section gives an overview of each scenario from the eye of the platoon leader (that is, the player). Next to each scenario name is the map it uses.

On each map, three different combat situations can be played: taking terrain (attack or defend objective areas), breaking through enemy lines (breakout or delay enemy) and killing the enemy (search and destroy enemy).

Attack/Defend Objective Areas

Achilles Junction (Lions Ridge) It's the morning after the offensive that broke through the forward units of the enemy. You are moving off the beaches at Normandy. Ahead lies a town about which little is known beyond the name. No reconnaissance has been made, so neither side knows each other's strengths and weaknesses. The team attacking the town is split in two due to the rapid advance. Who will find the enemy's Achilles heel?

Strong Hold (Shadow Valley) The advance is stalled by enemy units holding the town ahead. HQ has ordered that it be taken, not just bypassed. It's a strongpoint straddling an important road on the Russian front. This time, however, the enemy knows that you're coming and from where. If his pickets are placed correctly, you'll be revealed long before you see them.

City Blitz (Demons Maze) This knuckle-buster of a scenario has one team forced to cross the river. It's Odessa, Caen and Berlin. The enemy is waiting for you. The key to winning lies in the title; moving slow here will only get your men shot up.

Breakthrough

Road To Ruin (Lions Ridge) You are caught behind enemy lines, facing a competent enemy that is as merciless as it is strong. This is Falaise in 1944 or Kiev in 1941. In the military hierarchy, obedience is everything. Without it, wars cannot be won. In your situation, obeying HQ means attempting to get your men away over open ground against an entrenched enemy. Getting one squad off the board should be considered a major achievement.

Cut off (Shadow Valley) A somewhat easier situation than Road to Ruin. You're still behind the lines, but it's soon after the encirclement and the situation is still fluid. Think of Stalingrad, if Hitler had allowed the Fifth Army to break out of the pocket.

Relief Column (Demons Maze) Stalingrad from the other side of the enemy. Ahead of you, men are trapped, starving, running out of ammunition. Your mission is to punch a hole in the line and come to their rescue. There is too much on the line now for you to fail.

Meeting Engagement

Powder Keg (Lions Ridge) Where is the enemy? Disoriented by an offensive or a breakthrough, your men are scattered and the tactical situation is highly fluid. The enemy can be anywhere, so caution is the word here. The terrain is thick and movement is slow. Whoever finds the enemy first has a good chance of winning.

One More Yard (Shadow Valley) "Though I walk through the shadow of the valley of death, I fear no evil because I am the meanest mother in the valley." (common saying) This slugfest is played on a map that is similar to the south of France: waterfront homes, open terrain broken by wooded groves. It's the Champaign Campaign, Anvil-Dragon, the invasion of the Riviera. The enemy is before you, but the ground has to be taken one yard at a time.

House to House (Demons Maze) The town has been taken. Now it must be held, and that means a house-to-house search, rooting out a hidden, well-armed enemy. It's Stalingrad, Cherbourg, Arnhem, and Bastogne.





4. PRE-SET UNITS PHASE

At this point, the Situation Map is on the screen, and there are four options at the bottom. In the center of the screen are several words: TEAM 1 has no special meaning at this time; PRE-SET UNITS is the title of this phase (all screen titles will appear here, such as HEADQUARTERS and VICTORY); the PERIOD clock is set for the beginning of the game: the 1:00 means that it is Game Turn 1, and the first period has not begun.

Each option is described in greater detail below. You will be able to move back and forth among them until the PRE-SET DONE option is selected. The black box on the screen can be moved only with the joystick or arrow keys:

SEARCH

Four options appear:

IDENTIFY UNIT: a cross will appear on a map. Moving the cross over a unit will display more information at the bottom of the screen. Pressing the fire button will reveal the next unit in the position, or do nothing if there is only one unit there. Note that the cross will only be able to move out of the position in the direction the unit is facing. (If using a joystick, it can move out of the position in any direction.)

TACTICAL MAP: two options will appear. In **FAST SCROLL**, the cross can be moved to the edge of the screen. Instead of being moved off the map (if it continues on its way), the map will scroll 5 positions up or down, or 9 positions to the left or right. **FULL SCROLL** means that the cross cannot reach the edge of the map. It will remain near the center, and the map will scroll underneath it.

STRATEGIC MAP: this map shows 1/12th of the Situation Map. As with the Tactical Map, a small cross appears in the center of the screen.

During play, all friendly units and any enemy units in sight will be represented on the map by symbols indicating the team and type of unit. Team 1 units are colored orange, Team 2 units are green. The chosen unit will be flashing, and the direction of the compass arrow (seen at the bottom right corner of the screen) will show its facing. Facing is important only when giving movement orders to tanks, for they can turn only 45 degrees at a time.

RETURN TO H/Q: this returns to the PRE-SET UNITS screen. (That screen will be called the Headquarters once the game begins, hence the H/Q designation.)

SITUATION MAP

This will flash the Objective Area, your team's units, and any enemy units they can see. Team 1 is colored orange, Team 2 in blue. Press the Space Bar to stop the flashing and choose another option. Note that, later, you can move your units and view the result on the Situation Map.

MOVE UNITS

This option allows you to move your units prior to the first turn. When chosen, the black box will be over the identification number of the first unit. Four more options appear below it, and selecting a unit will take you to them. Scrolling through the unit numbers, the option RETURN TO H/Q will appear after the last unit. Choosing it will return to the Headquarter/Pre-Set Units menu.

If a unit is chosen, a brief description consisting of its iden-

tification number, its morale (green, seasoned or crack), unit type and the number of men in it will appear on one line, the name of the commanding officer above it, and the terrain type it is in to the left of the officer's name. The black box will be over the REVIEW option. You now can cycle through the options:

REVIEW: gives a more detailed description of the unit, showing its weapons. There are two more options (L.O.S. and MOVE) that are discussed in *Section 6: Line Of Sight*. (Note: the MOVE option in the REVIEW menu is different from the MOVE option below.)

CHANGE UNIT: will allow selection of another unit.

MOVE: this description will describe only how to move and deploy a unit. Two options are available first: **STANDARD** and **SCOUTING**. They have no effect during set-up. Pressing the fire button moves the black box down to the line where five options are displayed. The box is on the MOVE option, so press the fire button again. The selected unit can be moved into position.

A unit cannot be moved into a position it could not move into during the game. For example, a tank will not move into a building. When you have finished moving the unit into position, press the fire button (the joystick must be straight up). Nothing will change on the screen, but the black box can be moved onto the DONE option where – press the fire button again – you may select another unit to move.

Paratroops: unlike other units, paratroops do not begin the game on the map. Instead, they drop from the sky onto a chosen position. When a paratroop unit is moved into position, choose the turn number that the unit will appear. Each paratroop unit can land between game turn 2 and 30.

Paratroop units cannot land on woods, rivers, buildings and walls. It is considered unorganized and "broken" on the first turn they land. They may drift on the way down and be attacked. Paratroops have a special rally capability permitting them to recover faster than other units from the effects of landing and enemy attack.

DEPLOY: selecting DIG-IN from this option provides the unit with better defensive coverage. By digging-in, the unit has spent time improving its position and establishing its field of fire. During the game, a unit must spend three turns to dig-in. This option can give the defending team a very strong advantage.

If DEPLOY is selected while a unit is in a two-story building, the option 2ND STORY will appear. This will move the unit onto the second floor. During the game, selecting the MOVE option for a unit on the second story will cause the 1ST STORY option to appear. It's asking if the unit is climbing down.

Both the DIG-IN and 2ND STORY options can be selected at the same time.

The CLEAR and WAIT options have nothing to do with setting up the units.

PRE-SET DONE

Team 1 is finished examining his units, and it is Team 2's turn.



5. MOVEMENT

In most games, the speed at which a unit moves is pegged to the passage of time. Each turn equals a certain number of hours, and how long a unit takes to go from point A to point B would determine its movement rate.

In *Under Fire*, however, a turn does not represent the passage of a interval block of time. A unit's speed is based upon how much faster or slower it is compared to other units. The turn is divided into 24 periods to take into account the wide variance of units and allow a situation where one unit can move 1 position per period (like a T34/76c moving down the road) while a heavy infantry unit takes 24 periods moving up a hillside.

Movement is a two-step process. First, each unit gets its marching orders. Then, the computer breaks those orders down into 24 periods, and moves all units one period at a time, checking each period to see if the moving unit can see any enemy unit. The result of each period's move appears on the Situation Map during the Execute Orders phase, and enemy sightings are reported below it. Depending upon the number of combat phases chosen at the beginning of the game, the computer will stop that many times to resolve combat during the turn.

When the Pre-Set Units phase is finished, the first turn begins. The computer asks two questions:

WOULD YOU LIKE TO SAVE THIS GAME?

YES: an initialized disk must be available to save the game on. If not, see the Do You Need To Initialize A Disk prompt in *Section 2: Loading The Game* for more information.

If creating a scenario, it is at this point that it can be saved.

NO: the computer will go on to the next question.

WOULD YOU LIKE TO END THIS GAME?

YES: the victory screen will be displayed, and the game is over.

NO: the computer will enter the Headquarters screen.

The Headquarters screen is displayed, with two of the four options that were discussed back in *Section 4: SEARCH and SITUATION MAP*. **NEW ORDERS** is a new word for the **MOVE UNITS** option, except that this time around movement orders are issued instead of adjusting the set-up. **EXECUTE ORDERS** ends the turn, and is the only way to move onto the next phase.

NEW ORDERS

To keep from repeating whole sections of rules, we shall refer to other parts of the rules booklet for some options.

REVIEW

See *Section 6: Line Of Sight* for more information. When ordering units about the Tactical Map, this option will also allow examination of the rest of the map.

MOVE: this is not the same as the **MOVE** option seen below; this prompt reviews the movement orders given to a unit this turn. The period clock will be reset to zero, and the unit is moved into its position at the start of the turn. Pressing the fire button will move the unit according to its orders. Toggling the joystick fulfills the same function, but counts off the periods one at a time. This option will show at what point in the turn a unit will enter a position, allowing for more effective coordination of an attack.

DONE: returns to the **NEW ORDERS** menu.

CHANGE UNIT

Allows selection of another unit.

MOVE

This option has all the commands necessary to issue movement orders. There are two modes in which a unit can move:

STANDARD: a unit will carry out its movement orders until one of the following conditions occur:

- a) the unit has completed its movement order.
- b) the unit enters a position with an enemy unit.
- c) a vehicle is stopped by a roadblock or traffic jam.
- d) the unit is given combat orders during that turn.

SCOUTING: a unit will carry out its movement orders until one of the Standard conditions occur, or the unit sights an enemy unit. It will continue moving that turn only if it cannot see an enemy unit. Vehicles transporting men will automatically unload them.

A major risk of scouting is that if a unit in the open spots an enemy unit, it will halt, leaving itself exposed to enemy fire. When a vehicle is scouting, its crew is exposed to small arms fire. One way of effectively using scouting is when a unit is moving through protective terrain (woods, buildings, walls or hedges). If the unit reaches the edge of the terrain and spots an enemy unit, it will stop within the shelter of the terrain and not move into the open. Also, if a unit in Scouting and Extended Movement mode spots an enemy unit, it will cancel the Extended Movement and be available for combat; a unit in Standard and Extended Movement mode will not.

Once stopped, a unit will continue moving that same turn if the enemy unit is destroyed or moves out of sight.

On period 24, all units will execute its last movement order if it was one period away from completing it. This will happen more often to a vehicle moving along a road.

A unit can enter a position with an enemy unit. A unit can exit a position containing an enemy unit if it begins the turn in that position.

Once the unit's mode is decided, there are five options to consider: **CLEAR**, **MOVE**, **WAIT**, **DEPLOY** and **DONE**.

CLEAR: this option will erase all movement orders given to the unit. However, if a unit was assigned Extended Movement that turn, the order cannot be cleared (although it may be removed next turn). A unit ordered to Load or Unload cannot clear the order. In general, an order cannot be cleared for that unit if its **PERIOD** clock has turned black. See the Extended Movement section below for details.

WAIT: this expends periods without the unit moving. Each time the joystick is toggled, one period will pass.

DEPLOY: it is here that a number of rare movement orders can be given: transfer supplies, loading, or unloading vehi-

cles, moving between floors or digging in. Pressing the fire button when the DONE prompt appears will end the DEPLOY option.

DIG-IN: the unit has been ordered to prepare a defensive position. Once the order is given, a unit will continue to dig in until 72 periods has passed. If a unit is given a fire order, it will stop digging in until the next combat phase. Therefore, in a game with three combat phases per turn, if a unit that is ordered to dig in spends one combat phase firing its weapons, it has spent 16 periods digging in.

A dug-in unit can also be considered "quiet" if the enemy had not sighted or fired upon it while it was digging in. A unit can only be eligible for "quiet" as a result of successfully digging in. While a dug-in unit is considered well-protected against enemy fire, a dug-in and quiet unit is nearly invisible and also receives a bonus in the chance of hitting the enemy; its machine guns are in place and the men have established their fields of fire.

LOADING: loading and unloading units is an option performed by the vehicle, not the unit. A truck or halftrack can carry 15 men or one gun. There must be enough room to load a unit. If a truck picked up a squad of six men, there is room for nine men. If a 10-man squad tries to board, one soldier cannot be left behind. It costs one period per man to load or unload. A field gun takes a complete turn to hitch or unhitch. If the NOT ENOUGH PERIODS REMAINING prompt appears, the unit can carry out its order into the next turn by pressing the fire button (this is the Extended Move option, see the section below for more information).

If there is more than one unit eligible for loading, the computer will offer a choice.

Exception: a unit ordered to go on an Extended Move this turn cannot enter the DEPLOY option, nor can it be given combat orders (the prompt UNIT IS COMMITTED will appear during the Execution phase).

To unload a unit, the carrying vehicle enters the DEPLOY option and selects the UNLOAD option from that. If there is more than one unit in the vehicle, toggle through the choices.

If the LOAD option does not appear, it may be because the loading unit has not arrived yet. For example, if an infantry unit enters the position with the truck in it during its 10th period, the truck cannot pick up the infantry unit until its 10th period (this is a good time to use the WAIT option).

DONE: this ends giving movement orders to the unit, returning to the NEW ORDERS menu.

MOVE: enter movement orders for the chosen unit. As the unit is moved, the number of periods it takes to enter that

position is counted off the PERIOD clock. Movement orders are entered according to Section 2: Keyboard and Joystick Explanation.

If 1ST FLOOR appears when the MOVE option is chosen, it means that the unit is on the second story, and the computer is asking if that unit is to move down to the first floor. Pressing the fire button will allow the unit to continue its move. Note that a second-story unit cannot enter an adjacent second-story position. It must go down to the first floor.

Movement Cost

Entering a position takes a certain amount of time, based upon the unit type, how heavy it is (its burden), how it is moving, and the difficulty of the terrain.

TERRAIN EFFECTS CHART

Along the top are the speed categories a unit will fall into. By cross-referencing a unit's speed category with the terrain type it is entering, the result is the number of periods it will take to enter that position.

The cost of entering a position can be changed in many ways. Overlapping terrain will increase the cost. A move up or down elevation will add one period to the cost of moving into the position. A unit moving northeast, southeast, southwest and northwest adds about 40% to the movement cost. A unit in the scouting mode adds a variable number of periods to the cost. It costs a unit 2 periods to go up or down one floor.

Grass has no effect on movement or combat. Players may want to increase the "confusion" of the terrain by placing grasses in clear areas next to woods. While each position can be identified using the L.O.S. option, the grass can make it more difficult to discern between woods and clear at first glance.

Speed Categories

Infantry: rifle, engineer, paratroop and half-squad units

Mountain/Leader: mountain and leader units are considered extra light infantry. When their burden value is between 20 and 39, they are considered light infantry. When its Burden value is between 40 and 100, they are heavy infantry.

Fast Vehicles: T34/76c

Medium Vehicles: KV/85, SU/76, Sherman, M10, M4, Jagdpanzer V, Hummel, Panther, Panzerkampfwagen IV, all trucks and halftracks

Slow Vehicles: SU/152, M12

Gun units require a vehicle for transport.

TERRAIN EFFECTS CHART

	Lt. Mt., Lt. Ldr.	Med. Mt., Lt. Inf. & Med. Ldr.	Hvy. Mt.	Hvy. Ldr.	Med. Inf.	Hvy. Inf.	Fast Veh.	Med. Veh.	Slow Veh.
Open	4	4	10	10	6	10	3	3	4
Depression	4	6	14	14	10	14	3	3	4
Hillside	4	6	14	14	10	14	4	4	6
Hilltop	4	4	10	10	6	10	3	3	4
Road	3	3	6	6	4	6	1	1	2
Water	8	10	12	12	12	14	12	12	12
Building	6	6	10	10	8	10	P	P	P
Woods	6	8	10	10	10	10	8	8	8
Rough	6	8	10	10	10	10	2	2	4
Stone Wall	4	6	10	10	10	10	P	P	P
Hedge	4	6	10	10	10	10	4	4	6

P: Prohibited. Vehicle cannot enter this terrain

Changing Elevation: + 1 period to the above cost (Mountain units exempt)

Changing Floors: 2 periods

Changing Facing (Vehicles): 2 periods

Unit Key:

1: Light Mountain; 2: Medium Mountain, Light Infantry and Medium Leader; 3: Heavy Mountain; 4: Heavy Leader; 5: Medium Infantry;

6: Heavy Infantry; 7: Fast Vehicles; 8: Medium Vehicles; 9: Slow Vehicles

Traffic Jams

Only a certain number of vehicles may be in one position during any one period. This number depends upon the scale chosen. There will be no prompt that a jam has occurred; vehicles will simply stop moving. (Crack units do not count towards traffic jams; they just laugh and wave as they drive by.)

Scale	Max. # Of Units/Position
12	1
24	2
48	5
72	8

Fording

If a vehicle enters a water position during Summer and Fall, it may become temporarily or permanently stuck. Crack drivers have the best chance of crossing water. If it's a transport vehicle, the passengers will be unloaded; if a gun crew with a field gun, the gun is lost and the unit becomes a light infantry squad.

Error Messages

There are three possible messages:

UNIT UNABLE TO ENTER: either the unit is trying to move off the mapboard, or it's trying to enter a prohibited position (such as a tank moving into a building position).

ONLY 45 DEGREES AT TIME: while a vehicle may turn in place if it has enough periods, it can make only one 45 degree turn at a time.

NOT ENOUGH PERIODS REMAINING: means that the unit cannot enter the position this turn. The Extended Movement option may be used by pressing the fire button when the error message is on the screen. (In some circumstances, a

unit may not be eligible for Extended Movement. In those cases, the error message will not stay on the screen long enough to enter the order.)

Extended Movement

In certain circumstances, a unit may "carry over" its order into the next turn. A unit enters Extended Movement when the fire button is pressed while the **NOT ENOUGH PERIODS REMAINING** error message is on the screen. The **PERIOD** clock will turn black, meaning that the movement order cannot be erased until the next turn, even if the clear moves option was chosen at the beginning of the game.

When the next turn begins, and that unit is chosen, it will move a couple of positions forward; a remnant of the previous turn's move order. The order can be cleared at this time.

If a unit is in the Scouting movement mode, it will not carry out an Extended Movement order if it sights an enemy unit. See the Scouting rules above for more explanation on that point.

The Effect Of Combat Orders On Movement

A unit can move and fire during the same turn, but its combat effectiveness is reduced. The amount depends upon the unit type. Vehicles which move and fire suffer a penalty to their chance of hitting, but not to the effect the shell will have if it hits. Infantry units are penalized in the opposite way: their chance of hitting remains the same, but they will not do as much damage.

Combat tends to discourage moving and firing by the same unit. The effect of this is especially apparent with the machine gun, which is best used when the unit firing it does not move and is dug-in. If the unit is not dug-in, its effectiveness is reduced, and if the unit is moving and firing, its firepower is cut in half.



6. LINE OF SIGHT

Before you can attack an enemy unit effectively, you must see it. The computer determines this by checking the elevation level of all units, then deciding if the terrain blocks the line of sight (L.O.S.). Unlike many games, sighting is not reciprocal: it may happen that unit A can see unit B, but unit B cannot see unit A. The implication of this is obvious: A can attack B more effectively than can B attack A.

The ability of the computer to handle hidden movement is one of the strengths of Under Fire. Playing a boardgame is nothing compared with the uncertainty of taking a squad into a seemingly empty village . . . or the sick feeling when an enemy unit pops up suddenly during combat. This section describes the L.O.S. option, which appears when you decide to REVIEW a unit, and how it will and will not work.

The L.O.S. option is chosen to determine if one unit can see into a chosen position on the map. When the option is chosen, the unit fulfills any movement orders given that turn, and a cross appears over the unit. Move the cross to a position and press the fire button. The computer will display a **BLOCK** or **CLEAR** message over the L.O.S. option, and below that, the range to that position in meters. Toggle the joystick to use the option again; press the fire button to leave it.

The L.O.S. option is especially useful to determine what the unit can see from its new position. This can only be done if the unit is ordered to move to that position first.

The line of sight is checked from the unit to the position immediately in front of the target. A blocked line of sight does not always mean you cannot see units in that terrain,

because the man may be in a position to see the enemy, but not be able to fire on them.

For example, vehicles are considered to extend one point above its base elevation level. A tank is behind a wall, and you are commanding an infantry unit making a L.O.S. check over that wall. If your base elevation is the same as the wall, you would get a **BLOCK** response, meaning that you cannot see the terrain (it's blocked by the wall) but you can see the tank. This also works in reverse; that you can see the terrain, but you cannot see the unit in it. This can happen due to range considerations and the current state of the unit in that terrain. If, for example, an infantry unit is in either a woods, wall, hedge, river, or building position, and not firing its weapons, an enemy unit would have to be within 303 meters to see it. If the same unit was "dug-in," the range

would be reduced to 101 meters. For vehicles, the ranges would be 405 meters and 303 meters, respectively.

Restrictions: units that are broken or berserk cannot report enemy sightings. Therefore, if only one squad can see a line of enemy units approaching, and that squad breaks, the enemy could vanish from your screen.

Digging In: units become quiet by digging in (using the DEPLOY option) and not firing their weapons or moving for three turns. If a unit is spotted at that time, it must move out of sight of the enemy and start over.

Determining Line Of Sight

(This is a general discussion of the rules, and not hard-and-fast cases. As in real combat, line of sight is judged by the eye, and players are given every opportunity to learn the lay of the land by trial and error.)

There are 10 elevation levels, and each position has a Base Elevation Level. A depression position is Level 0, open terrain is level 1, a hillside position is level 2, and a hilltop position is level 4. A unit is considered to be at the Base Elevation Level of the position it is in. This BEL is modified by additional terrain, and what mode the unit is travelling in. A position cannot be higher than 10, or lower than 0.

Hillside and hilltop positions are considered to be plateaus, not slopes. A unit adjacent to a position with a lower BEL will be able to see as if on a slope. If a unit is sighting through a position with the same BEL as the position it is in, blind spots can be formed.

The following features add or subtract from the BEL: trees (+3), two-story buildings (+3), one-story buildings (+2), walls and hedges (+1), and rivers in spring, summer and fall (-1). A unit sighting from the second floor of a building receives a +2 modifier; from the first floor a +1 modifier. Example: if a unit is on the 2nd floor of a building on a hilltop, then the unit is considered to be at elevation 6.

Blind Spots

The L.O.S. cannot only prevent units from seeing into a position, it can also prevent observation of the area behind it. This creates a blind spot, and the length of it depends upon many factors, and the vast combinations of elevations that can be obtained from an *Under Fire* mapboard. Since there is not one easy way of determining what position can be blocked on what condition, players are directed to use the L.O.S. option to determine where the blind spots are located.

Example: an infantry unit is on the second floor of a building on a hilltop (BEL 6), trying to see over a strand of trees

(BEL 1) eight positions away. The trees have a blocking elevation of 4. Therefore, the unit can see into the trees, but not beyond it. This is a blind spot, and it extends for seven positions beyond it, barring the presence of other terrain and units.

Special Modifiers: if a unit is in a depression position (BEL 0), and the adjacent position through which it is being attacked has a BEL of 1 (open terrain) then it sights as if it were at level one, but considered hull down for combat. If a tank is in the scouting mode, it has opened its turret hatch, and the leader is sighting from there, giving it a +1 level modifier. All vehicles when sighted are considered one level higher, but this does not mean that a unit sights from one level higher. It means that, if a unit is behind a wall (+1) at elevation 1, it could be sighted by an infantry unit at level 1, but it cannot see the infantry unit.

ELEVATION CHART

TERRAIN	BLOCKING ELEVATION	UNIT ELEVATION
Open	1	1
Depression	0	0 ¹
Hillside	2	2
Hilltop	4	4
Road	@	@
River	0 ²	0
1-Story Building	2	1
2-Story Building	3	1 ³
Trees	3	@
Stone Wall	1	@
Hedge	1	@
Rough	@	@

Footnotes:

@: same as base terrain

1: elevation is 1 if unit is at the edge of the depression.

2: if winter, elevation is 1.

3: elevation 2 if unit is on the second floor.

Range

The range displayed upon the screen represents the greatest possible distance between two points. When considering attack ranges, the computer will check instead for the smallest possible distance by subtracting 50% of the game scale from the range. Example: at a game scale of 48 meters, the distance between units three positions apart can range from 120 meters to 144 meters. This explains why a unit can throw grenades 68 meters; the computer is giving the benefit of the doubt to the attacker.



7. EXECUTE ORDERS

When the EXECUTE ORDERS option is selected, the following procedure is followed:

1. The prompt EXECUTE ORDERS appears in the center of the screen. Press the fire button and the phase will continue.

2. The prompt COMBAT ORDERS appears. When the fire button is pressed, the prompt COMBAT ORDERS TEAM 1 will appear. Press the fire button. The Combat Phase has been entered and, if the Player Combat or Leader Combat option was selected, the fire of your units is directed. When finished, scroll to the DONE prompt from the SELECT UNIT option and press the fire button. In the two-player game, Team 2 will enter its combat phase.

3. If any fire orders have been issued, the results will be

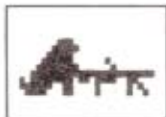
displayed upon the screen: the prompt COMBAT RESOLUTION will appear and the fire button must be pressed.

4. Until the next combat phase, the computer will count off the periods and move each unit. At the end of each period, the computer checks the L.O.S. of each unit. If no enemy unit has been sighted, the words NO UNITS SIGHTED. Otherwise, the name of the unit being sighted will appear. It is possible for a unit to be sighted, yet not know who spotted it.

5. After period 24, the turn ends and the computer will automatically enter the Unit Organization Phase.

Sometimes, after the fire button has been pressed, it will appear that the computer is not responding. This will become more apparent if a scenario has more than 20 units involved. If the fire button is pressed, and the computer responds with three clicks or no clicks, it has received the order and is at work processing the information. Sometimes

during this phase, a moving dash appears next to the Period Clock, indicating that the computer is leading its team. We can only recommend patience. They last only seconds, and remember that, if *Under Fire* was a boardgame, the turn would last much longer!



8. COMBAT

Combat is a complex operation in Under Fire, so much so that attempting to explain it all would more than double the length of the rules booklet, without giving the players a better idea of how to fight. So, this section will give all the factors that will affect combat, but specific figures will remain within the mind of the computer.

All orders are executed simultaneously. Just like movement orders, combat orders must all be entered first, then resolved at the same time. While the combat phase is actually two separate phases (called the Combat Orders phase and the Combat Resolution phase), we treat them as one in the rules booklet to reduce confusion.

Combat orders may be given to every unit, depending upon its movement orders and what enemies it can see. There are three different types of combat:

Direct Fire is an attack on an enemy unit that has been spotted by the friendly unit.

Indirect Fire is an attack on an enemy unit the firing unit cannot see. A friendly unit can sight the enemy unit (which it then relays the location of the enemy unit by radio or other signals), but it is not required. Only units with tubed weapons and H.E. capability may fire indirect.

Area Attack is an attack on a piece of terrain. It is used on enemy positions, or to destroy a bridge, building, wall, or to block a road.

There are also two different postures a unit may be in: assault and defensive.

The assault posture means that the attacking unit is coming to a stop, deploying briefly, and attacking. An infantry unit in the assault posture will suspend moving until the next combat phase. A vehicle, however, will continue moving halfway into its next series of movement periods.

For example: there are four combat phases per turn, meaning that the turn is divided into four blocks of six movement periods each. Therefore, if an infantry unit enters the assault posture, it will not move during the block of six periods, while a vehicle will begin moving three periods into the block.

The defensive posture means that the unit is not attacking; it is taking the maximum amount of advantage from the terrain and (if a vehicle) from its armor. Infantrymen will hug the ground. Tanks will close all their vents and hatches and take evasive action within its position. While a valuable tactic, if the unit is not fired upon this combat period, it remains in its defensive posture until the next combat period. It is, in effect, pinning itself down.

Tactical note: if an infantry unit is dug-in a stone building, and chooses the defensive posture, a squad outside can fire all its ammunition and may still not affect the unit!

Entering Combat Orders

When a unit is chosen, you have the option to put it in an ASSAULT or DEFENSIVE posture. If the ASSAULT option is chosen, a cross will appear. Place the cross over the target position and press the fire button. Depending upon what pre-conditions have been met, you will be able to select DIRECT, INDIRECT or AREA fire. After making that selection,

choose what weapons will fire into that position by pressing the fire button. A slash will appear next to the chosen weapon. Press the space bar to pass over weapons you do not wish to fire. The DONE prompt will end the selection and permit another attack. Rifle fire can be split among two targets; all other weapons can only be fired once. On tanks with A.P. and H.E. ammunition, only one of those types may be fired. The SMOKE option appears for some units when H.E. is selected; toggle the joystick when the black box appears around H.E..

To end giving combat orders to a unit, press the fire button when the UNITS ATTACKS COMPLETE prompt appears. Toggling will allow more orders to be given to the unit.

Selecting the DEFENSIVE option automatically ends the giving of orders to that unit.

Unit Density

If there are so many men and vehicles in a position that they cannot be considered individual targets, then they are easier to hit. The smaller the game scale, the more likely there will be a density modifier added to the combat calculation. In fact, at scale 12, Russian infantry squads automatically suffer a unit density penalty (unlike their smaller U.S. and German counterparts).

Calculating Unit Density: a quick-and-dirty way to check for a high-density position is to assign each man in a unit 1 "density point," and each vehicle 10 "density points." (We put quotes around density point because the word does not appear anywhere in the game or the rest of the rules booklet.)

If there are more than the maximum number of density points in a position, the unit density penalty is applied to the unit's chances of getting hit. The unit density penalty adds 0.5% per excess "density point" to the chance of hitting the unit.

Scale	Max. # Of Density Points
12	12
24	18
48	36
72	44

Effect Of Range On Combat

All open-sight weapons (those fired without a scope like rifles and machine guns) will lose effectiveness from 300 meters out, due to the difficulty of sighting a target with the naked eye at that distance.

Extended Range: when this notation appears, it means that the unit will be attacking with far less firepower. Deductions for Extended Range firing is in addition to deductions for range effectiveness, above.

Tactical note: the effectiveness of even the most powerful weapons can be reduced when several negative modifiers are combined. An infantry squad firing a heavy machine gun 700 meters suffers two negative modifiers: one for firing at an Extended Range, and one for firing an open sight weapon more than 300 meters. And if the squad is moving and firing, it suffers a large penalty in addition to the above!

Multiple Weapon Firing

Rifle squads may be ordered to fire at two different positions in the same combat phase. Except for rifles, only one weapon type may fire on a position. Example: an infantry squad may use its rifles to attack an infantry squad, and its bazooka to attack a tank.

All attacks by a unit must be ordered at one time. Once combat orders have been given to a unit, it cannot be cleared.

Demolition

Certain pieces of terrain can be destroyed. There are four possible targets: roads, bridges, buildings and stone walls.

Roadblocks: if a satchel charge is used on a road running through a woods, there is a 20% chance a roadblock can be formed, and a 90% chance of the road being cratered. A roadblock will trap traffic, but cratering it will slow down vehicles. A vehicle halted by a roadblock cannot move. A unit halted by a blown bridge can turn around. Only by driving a vehicle along that road will tell how successful the attack was.

A H.E. attack can turn a road into rough, but cannot form a roadblock. The chance of success is the same.

Blowing Bridges: if an area attack with a satchel charge is ordered on a road position crossing a water position, there is a 20% chance of the bridge being destroyed. Only by driving a vehicle along that road will tell how successful the attack was.

Blowing Buildings: if an H.E. attack is made on a building position, there is a 5% chance of destroying it. The position is turned into a rough position.

Blowing Stone Walls: a hole may be blown in a stone wall position if a satchel charge, A.P. or H.E. charge is lobbed at it (using an area, indirect or artillery attack).

The three maps that come with the game all have terrain that can be demolished. See the Mapmaker rules booklet for instructions on creating this type of terrain.

Morale

Units may break or go berserk as a result of enemy fire. A unit need not be fired upon to suffer a morale check. Each time there is combat somewhere on the map, all units have a chance of breaking.

Breaking: units break when they become disorganized and demoralized in combat. The more inexperienced a unit, the greater their chance of breaking. When a unit breaks in the open, it will disregard previous movement orders and head for cover. A unit will continue broken until it is rallied; an automatic function handled by the computer. If a vehicle's crew breaks, it may bail out of the vehicle, effectively destroying it.

Rally: how quickly and under what condition units rally depends upon their morale and perception of the tactical situation. Crack units normally rally very quickly, while green units are the hardest to rally.

Effect on rallying: each unit considers the tactical situation when deciding if it should rally. The presence of enemy units when there are no friendly units in sight would indicate that the squad is cut off, and it may not rally. This modifier can increase if there are enemy tanks in sight. Likewise, if there are friendly squads and tanks in sight, but the enemy cannot be seen, the unit has a better chance of rallying. The presence of a leader in the same or adjacent

position as the squad also increases their chance of rallying.

Berserk: units can go berserk as a result of combat. A berserking unit will charge the nearest enemy unit it can see. If an enemy unit is not nearby, the player loses control of the unit for a period of time. Berserk units eventually break.

Calculating Combat Odds

Under Fire calculates combat by applying modifiers to the attacking unit's percentage chance of hitting. The modifiers are:

1) is the defending unit firing back on the attacking unit? Units firing on each other will nullify part of each other's attack.

2) if the target unit is within sight of the attacker. Direct fire is much more accurate than indirect fire.

3) the number of casualties suffered by the attacking unit. A unit which has suffered losses has its firepower reduced, and (if it is a green or seasoned unit) will maintain their fire for shorter periods of time.

4) if the target unit has moved, or if it has orders to move this turn. A moving unit is penalized when fired upon.

5) the defensive position of the target unit: whether it is dug-in, or has been ordered to dig in. A dug-in unit can never be surprised.

6) if the target unit has fired its weapons this turn. This is different than #1. If the target unit has fired its weapons, it indicates that it is in a ready position. It has taken cover and thus derives some benefit from the terrain.

Terrain And Other Defensive Benefits

How much terrain and other factors help a unit defensively will not be revealed. However, the types of terrain have been ranked from the most advantageous to the least. Example: a unit in a building is more protected from enemy fire than a unit behind a stone wall. The terrain that hurts the target unit has also been ranked: a unit in a water position suffers more than a unit in the open. The terrain has also been grouped by how much of an effect they make on combat.

Good Terrain

- Building
- Stone Wall
- Rough
- Depression*
- Woods

Adequate Terrain

- Hedge

Ineffectual Terrain

- Hilltop
- Hillside
- Grass

Negative Terrain

- Open
- Road
- Water

* the defensive modifier is given if a unit in a depression is fired upon from a unit in a position that is one elevation level higher or less; there is no effect if the unit is fired upon from a unit in a position that is two elevation levels higher or more.

In addition, a unit in a Defensive posture receives a defensive modifier, as does a unit with a Leader unit in the same or adjacent position.

Tank/Self-Propelled Gun Modifiers

A tank or self-propelled gun receives a number of penalties and bonuses based upon what it does and how many crew members it has.

Penalties: for each crew member lost, for tank/self-propelled gun with 4 or less crew members, if a self-propelled gun must turn in place to fire, and/or if a unit makes two separate attacks (that is, if it fires its main gun at one unit, and its machine gun at another).

Bonus: for each turn the unit fires at the same position without moving, and/or for crews with more than 4 members.

Vehicle Damage

A DESTROYED result means that the vehicle cannot be

operated anymore, and that the crew (if they survived the attack) will bail-out.

HIT SIDE: if the vehicle is not destroyed, it may have suffered track damage that will immobilize the unit for the rest of the game. The crew may bail-out, but if it doesn't, it will stay in the tank and follow orders.

HIT REAR: if the vehicle is not destroyed, it may suffer damage to the fuel system that is similar in effect to the track damage, except that the tank may not become immobilized until several turns later.

HIT FRONT: the vehicle could lose its machine gun or lose a crew member. If a crew member dies, the rest of the crew may bail-out automatically. The chance of that happening may increase if the vehicle is in the Scouting mode.



9. SUPPLY

Supply depletion is an option selected on the Set-Up screen which will keep track of each unit's supply of ammunition. We strongly encourage using this rule. Without it, units will be able to constantly lay down smoke barrages, and attack in each combat phase.

Supply is counted in two ways. For all weapons except grenades, one supply point equals one attack. For hand grenades, four points equals one attack (that is why only four supply points worth of grenades can be purchased at a time). One attack does not mean one bullet or shell, but the amount of ammunition expended during the fire phase. The amount of supply a unit begins with is based upon historical precedent and the unit's combat experience. The more experienced a unit, the more efficiently it can use its ammo.

Each weapon has a number of supply points assigned to it (see the Ammunition Chart, below). A unit can receive more than that amount during the game if supply trucks and halftracks are used.

Supply trucks and halftracks are bought at the beginning of the game, and must be loaded with ammunition at that time. H.E. and A.P. shot loaded in a truck can be used with any vehicle. Smoke attacks are deducted from the unit's H.E. supply.

AMMUNITION CHART Green Seasoned Crack

Weapon/Attacks			
Rifle	4	8	12
Submachine Gun	4	8	12
Light Machine Gun	4	8	12
Medium Machine Gun	6	10	12
Heavy Machine Gun	8	12	14
Bazooka	4	4	4
Panzerfaust	1	1	1
Flamethrower	1	2	3
Light Mortar	4	4	4
Medium Mortar	3	3	3
Satchel Charge	1	1	1

When selecting which weapon(s) a unit will fire with, to the right of its name is the number of attacks that weapon has left before it runs out of ammunition. For example, the notation on a typical infantry unit might read 8-RIFLES 12. This means that the squad is armed with rifles, each of which can be fired during twelve combat periods.

Units can be resupplied if supply trucks and halftracks were purchased at the beginning of the game. To resupply a unit, it must move into the same position as the supply vehicle and select SUPPLY from the DEPLOY option. The SUPPLY option will not appear if the unit has not fired its weapons, and does not need to be resupplied.

A unit that needs only rifle or submachine gun ammunition will be supplied automatically during the Unit Organization phase. Each supply vehicle is considered to have that type of ammunition on hand. The transfer of other ammunition takes place during the Unit Organization phase. If the unit being supplied has any number other than zero in the SUPPLY PERIODS section, the GET SUPPLY option will be available. A list of available weapons will appear. Toggle and choose among them.

If the message UNABLE TO TRANSFER SUPPLY appears, the unit may not have enough supply periods left, the vehicle may not have the right type of ammunition, or the unit may not need to have that weapon resupplied.



10. UNIT ORGANIZATION

During this phase, units can be resupplied or shed weight that will make them move faster. Crews can bail-out of a damaged vehicle, and units may be integrated into single squads. It is the last phase in an Under Fire turn.

When the prompt ENTER ORGANIZATION PHASE appears, ENTER or SKIP it by toggling the joystick. Broken and berserk units will not appear during this phase. If all of one team's units are that way, the DONE prompt will appear automatically.

The number of options that will appear with each unit will depend upon what pre-conditions have been met.

SHED WEIGHT: this option will always appear. When chosen, a unit can either DROP WEAPON or DROP SUPPLY. If DROP WEAPON is chosen, a list of eligible weapons will appear. In all cases, toggle the joystick to list the choices, press the fire button to select. DROP SUPPLY has the same effect as DROP WEAPON except on a weapon's ammunition supply. A unit may want to do this when it is one burden point away from moving faster. For example: an infantry unit with 40 burden points (moving at the speed of heavy infantry) may drop its grenades in order to move at the speed of medium infantry.

BAIL-OUT: choosing this option will force the crew to evacuate the vehicle.

SUPPLY: can only appear if a unit is eligible for resupply. See *Section 9: Supply* for more information.

INTEGRATION: units can combine under certain conditions. One unit receives the men and weapons of another unit. No more than 15 men may be in an integrated squad. Tubed units such as mortars cannot be transferred from one squad to another, but an infantry squad can be integrated into a mortar unit. In other words, the squad with the tubed weapon must be on the receiving end of the integration.

Few things are more satisfying than a bull session after the game is over. Everything is revealed: the tactics and the thinking that went into your favorite plans. In that light, we suggest saving the game before the first turn, even if it is one of our scenarios you're playing. Then, at the end of the game, the saved game can be loaded, and all of the units and their starting positions will be revealed.

The Victory screen is the last phase in *Under Fire*, and appears when you decide to quit the game or when all units on one side have been destroyed. The total number of men participating in the scenario are revealed along with their General Orders, casualties, and the number of men completing their orders. All American and German tank crews count as five men, Russian tanks as four men.

There is no declaration of victory in *Under Fire*. Determining who won and who lost is a subjective task saved for the greater glory of the argument before and after the game.

For example: if Team 1 had Attack Objective Area, and Team 2 Defend Objective Area, you may agree that the Team occupying the area won. But what if both sides are in the Area? The team with the most men there may be declared the winner, but did they win if they outnumbered the other team at the start?



11. VICTORY

Determining who won a break-out scenario is the most subjective of all. Let's say that one player was commanded to break out. He gets 20% of his men off, with the rest dead or still on the board. Did he win? What was the odds of getting all of them out? If he was up against strong opposition, he could have done a masterful job of getting them out.

The game allows both players to look at the various maps and decide for themselves. The maps show the location of all units, how much supply they had left (it could be bad if that Panther sitting on the hillside that pinned you down with its presence had no ammo left), and how much damage each unit suffered. If the scenario was saved before turn one, that can be loaded by following the loading instructions. The argument after the game can be just as informative and entertaining as playing the game.

INDEX

References to the Mapmaker rules booklet are marked with an "M". **Example:** GO GET NEW PART, 3M.

- ACCEPT GAME OPTIONS SELECTED, 7
- ALLOW CLEARING OF MOVES, 7
- AREA ATTACK, 16, 9M
- ASSAULT, 16, 5M
- BAIL-OUT, 19, 6M
- BROKEN, 17
- BURDEN, 8, 9, 10, 5M
- CHANGE UNIT, 11, 12
- CHOOSE MAP BOARD TO PLAY ON, 8
- CLEAR, 12
- COMBAT COMMANDS, 6, 15
- COMBAT CONTROL, 7
- COMBAT RESOLUTION, 15
- DEFENSIVE, 16, 5M
- DELETE THIS UNIT, 8
- DEPLOY, 11, 12, 5M
- DESIGN YOUR OWN, 7
- DESTROYED, 18
- DIG-IN, 11, 13
- DO YOU NEED TO INITIALIZE A DISK
(FROM GAMEDMASTER DISK), 5, 5M
- DO YOU NEED TO INITIALIZE A DISK
(FROM MAPMAKER DISK), 1M, 5M
- DROP SUPPLY, 19
- DROP WEAPON, 19
- ENTER LAST GAME TURN, 10
- ENTER NUMBER OF POINTS FOR TEAM, 9
- ENTER ORGANIZATION PHASE, 19
- ENTER THE NAME OF THE MAP BOARD, 9
- ERASE, 2M
- EXECUTE ORDERS, 15
- EXECUTING COMMANDS, 15
- EXTENDED RANGE, 16, 4M
- GENERAL ORDERS, 8, 10, 5M
- GO GET NEW PART, 1M
- HIT FRONT, 18
- HIT REAR, 18
- HIT SIDE, 18
- HUMAN OR COMPUTER CONTROL OF TEAM, 7
- IDENTIFY UNIT, 11
- INTEGRATION, 19
- LOADING, 13
- L.O.S., 14, 5M
- MAXIMUM NUMBER OF UNITS FOR TEAM, 9
- MOVE, 11, 12, 13
- MOVE UNITS, 11
- NEW GAME, 6
- NEW ORDERS, 12
- NOT ENOUGH PERIODS REMAINING, 14
- NUMBER OF COMBAT PHASES PER TURN, 7
- ONLY 45 DEGREES AT TIME, 14
- PLAY PRE-SET, 7
- PLAY WITH EXTENDED CAPABILITY DISK, 8, 9
- PRE-SET DONE, 11
- REMOVE MAP DISK AND INSTALL UNITS DISK, 8
- REPLAY SAVED GAME, 6, 7
- RETURN TO H/Q, 11
- REVIEW, 11
- REVIEW YOUR UNITS, 8, 5M
- SCOUTING, 12
- SEARCH, 11
- SEASON, 7
- SELECT A NATIONALITY, 8, 9
- SELECT DESIRED PART, 1M
- SELECT GAME SCALE, 7
- SET OBJECTIVE AREA, 10, 5M
- SITUATION MAP, 11, 5M
- STANDARD, 12
- STRATEGIC MAP, 11
- SUPPLY, 18, 19, 5M
- TACTICAL MAP, 11
- TEAM COMPLETE/END BUYING, 8
- UNABLE TO TRANSFER SUPPLY, 18
- UNITS UNABLE TO ENTER, 14
- USE AUDIO RESPONSE ON BUTTON PRESS, 7
- USE PRINTER DRIVER, 1M
- USE SUPPLY DEPLETION RULE, 7
- WAIT, 12
- WHAT SLOT IS THE PRINTER IN, 1M
- WOULD YOU LIKE TO END THIS GAME, 12
- WOULD YOU LIKE TO GET A MAP FROM DISK, 1M
- WOULD YOU LIKE TO PRINT A MAP, 1M
- WOULD YOU LIKE TO SAVE THIS GAME, 12
- WOULD YOU LIKE TO SAVE THIS MAP BOARD, 2M
- 1ST FLOOR, 13
- 2ND FLOOR, 11

TAC

Tactical Armor Command

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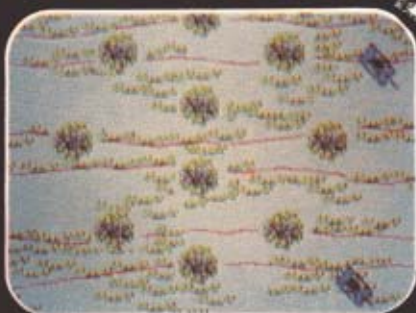
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T.A.C. on diskette retails for \$40.00 and can be played on the following computers: Apple® II's 48K (Mockingboard™ Sound Enhanced!) Atari's® with 48K and the Commodore 64®. IBM® PC version coming this fall.

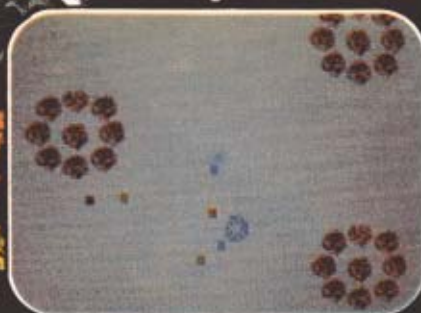
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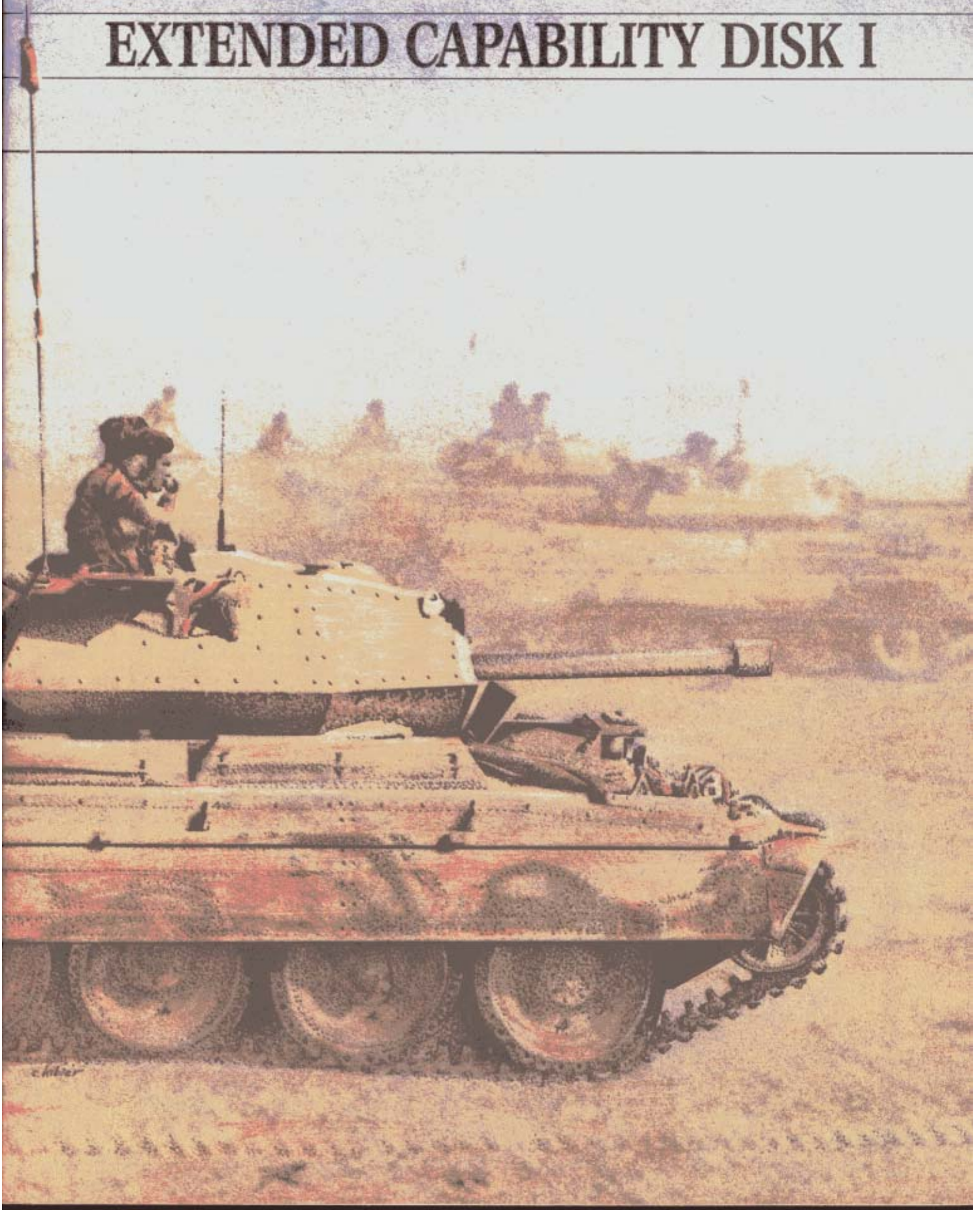


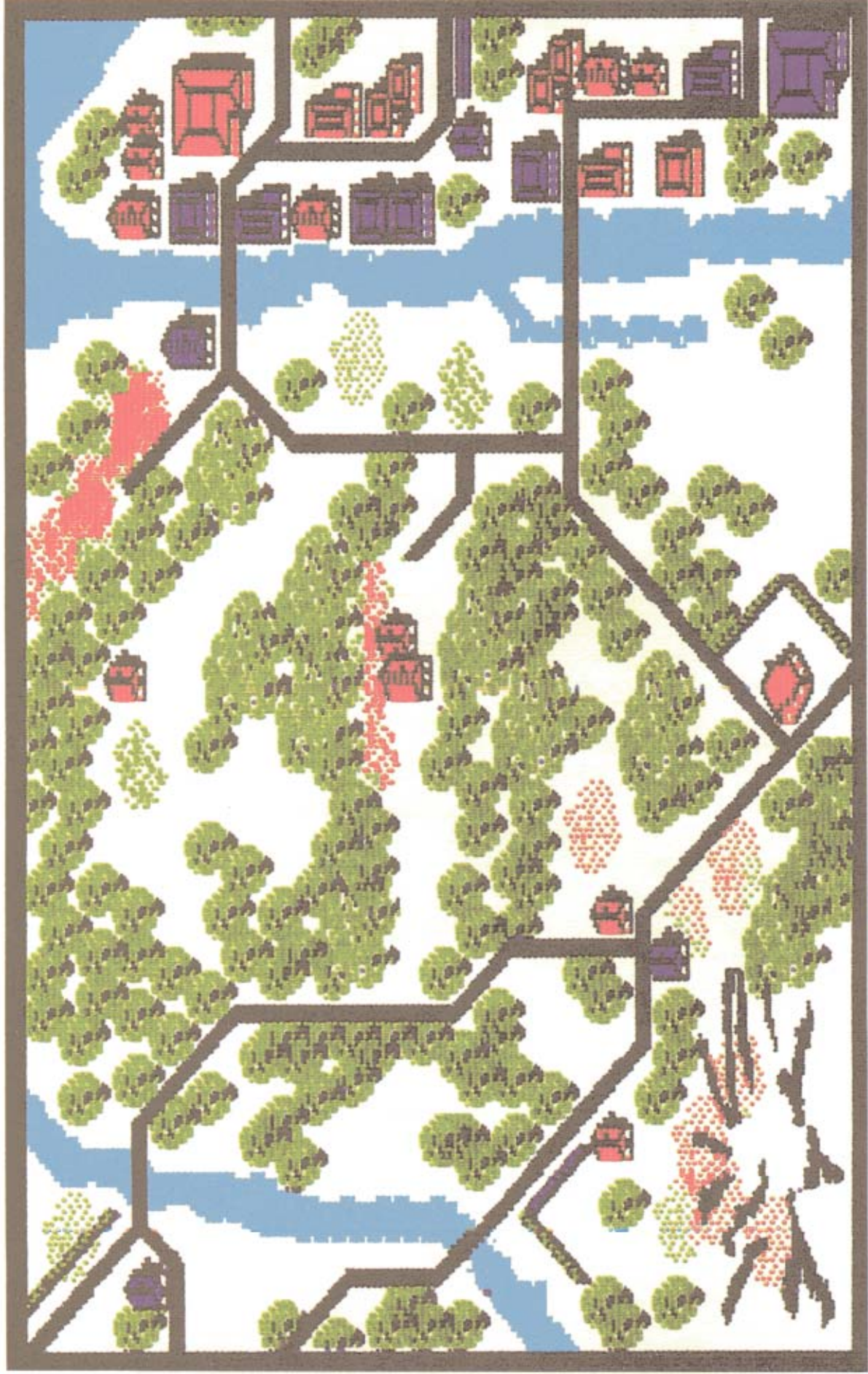
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UNDER FIRE!

EXTENDED CAPABILITY DISK I





Hell's Corridor Scenario Map for *Under Fire Extended Capability Disk I*. Permission granted to reproduce for Player's use only.
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HELL'S CORRIDOR

INSIDE THE RULEBOOK

This rule book contains all the information needed to use the *Under Fire* Extended Capability I disk with your game; The disk contains two new maps, six scenarios, and units and vehicles from the armies of Germany, Great Britain, Italy, Japan, the Soviet Union, and the United States. The rulebook consists of two sections:

- *instructions on how to use the disk with your *Under Fire* game;

- *an interview with the designer, and;

- *a profile of the vehicles available for play.

We hope that adding the Extended Capability disk increases your enjoyment of playing *Under Fire*. The Avalon Hill Game Company plans on releasing future disks covering other areas of the *Under Fire* world. Sending in the registration card will ensure that you are notified of their

availability.

Recon Report: *Under Fire* fans be advised that there are two supplements planned, one in which you can have a hand in shaping!

The Extended Capability Campaign disk will take *Under Fire* to the battalion/regiment level by allowing players to build larger forces. Rules for surrenders and retreats will be used as players game out situations such as offensives and breakthroughs.

After that, work will begin on the third Extended Capability disk. *Under Fire* fans are invited to submit nominations for this supplement. Write us a letter, telling what vehicles you wish to see included, and why. The deadline is June 1, 1986. Send your entry to: The Avalon Hill Game Company; Microcomputer Games; 4517 Harford Rd.; Baltimore, MD 21214

IMPORTANT: to load the Judgement and Hell's Corridor maps (for creating your own scenarios), insert the ORIGINAL UNITS & SCENARIOS disk when the game prompts PUT MAP BOARD DISK INTO DRIVE #1, and then the Extended Capability disk when it asks ENTER THE NAME OF THE MAP BOARD.

Mapmaker Rulebook clarification: maps included with the game *can* be altered; but cannot be saved back to the Mapmaker disk. Use a disk initialized according to rulebook instructions.

DESIGN: *Ralph H. Bosson*

JUDGEMENT MAP DESIGN: *George Bosson*

HELLS CORRIDOR MAP DESIGN: *Charles McCullough*

RULEBOOK EDITING & ART DIRECTION: *William E. Peschel*

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PRINTING: *Monarch Services*

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USING THE DISK

The *Under Fire* Extended Capability disk (abbreviated EC from here on) works exactly like the Original Units/Scenarios disk. The disk contains the armies and weapons used by six nations during World War II, and expands on those appearing on the Original Units/Scenarios disk.

The EC disk cannot be used unless the *Under Fire* game disk has already been booted on your computer. When the prompt PLAY WITH EXTENDED CAPABILITY DISK? (YES) appears, press the fire button. The prompt REMOVE DISK/INSTALL UNITS/SCENARIO DISK will appear. Put the EC disk in the drive and press the fire button. Then, return to page 8 or page 9 of the *Under Fire* rulebook, to the paragraph entitled SELECT A NATIONALITY FOR TEAM 1, for further instructions.

Both teams must be selected from the EC disk. The scenarios accompanying the Lions Ridge, Shadow Valley and Demons Maze maps cannot be used with the EC disk. You can still use them with it to create your own scenarios, however.

Notes And Additional Rules

The Crocodile VII tank is equipped with a flamethrower instead of a machinegun. Due to the way the game was programmed, however, it is possible for a crew to bail out and take the flamethrower with them. Players are advised not to use the weapon, and to drop it in the Reorganization Phase.

Scouting mode: no vehicle may fire its medium machine gun (MMG) unless it is in the Scouting mode. When a vehicle is in the Scouting mode, the commander or machine gunner has popped open the hatch, and the vehicle is not "buttoned down." While Scouting allows access to the MMG, it also means that the man in the hatch can be affected by infantry fire. If the man is killed, there is a chance that the tank crew will bail out.

A misprint in the *Under Fire* rulebook resulted in an incorrect Terrain Effects Chart. The complete movement rates for fast, medium and slow vehicles are summarized below:

	Fast Veh.	Med. Veh.	Slow Veh.
Open	2	3	4
Depression	2	3	4
Hillside	3	4	6
Hilltop	2	3	4
Road	1	1	2
Water	12	12	12
Building	P	P	P
Woods	8	8	8
Rough	4	6	6
Stone Wall	P	P	P
Hedge	3	4	6

THE SCENARIOS

Attack/Defend Objective Areas

Breached Command (Judgement): you drove the enemy out of the coastal village only to face an immediate counterattack before you could establish new fire perimeters. Your units are split into two or three groups, and headquarters is not offering any advice. It's up to you: do you wear them down in time for reinforcements to come, or continue attacking the objective?

Tight Rope (Hells Corridor): the enemy is being pushed back towards the river. Everything has been jake, but there is trouble coming. Your ranks are thinning and your supply line tighter, but if you wait for help, the enemy will be established beyond the river and bring your lightning thrust to an end. Your mission: break the enemy's defense and storm the town.

Breakthrough

Judiths Sword (Judgement): in a war drawn from the pages of history, it took one woman to break the siege of Jerusalem. She did it by trickery and guile, and you must do the same. Make your thrust to the southeast and re-establish the supply line, or face losing the entire city.

Last Roll (Hells Corridor): the cork is in the bottle, and you and your men are on the wrong side of it. The intelligence officer who said you could retreat across the river is not here, but the enemy is. One Joe said that the enemy was already across the river, but he's not reliable. No help is coming, so it's up to you to lead your men across the river. You wanted to command. Now's your chance.

Meeting Engagement

Rams Horn (Judgement): it took the horn from a ram to bring the walls of Jericho down. The defender has the finest observation post in the area, and it's up to you to take it.

Blindmans Bluff (Hells Corridor): the battle has been seesawing back and forth for so long that no one knows where the front is. The orders from HQ bear no resemblance to reality. But orders are orders, and yours is to take the town at the southwest crossroad that is feeding the enemy fresh troops and supplies. Better you than me.

The Vehicles

With a little research, it becomes quickly apparent that it is difficult for *Under Fire* to cover all major tank types without releasing numerous extended capability disks. Many tanks had more than a dozen models released during the war, each with differences in firepower, armament and speed. This disk provides players with a sampling of the major tank types available during the war. While players will have their own favorites omitted, keep in mind that each country has a good selection of light, medium and heavy tanks to choose from. If your favorite model is not here, a close equivalent can usually be found.

The designation of a vehicle's weapon types will not be the same as it was historically. Not all heavy machine guns are alike. Since the firepower effects of different types of weapons have already been worked out, it's easier to simulate the effect of a vehicle's weapon by assigning it to a different machine gun category.

A Guide To The Listing

The history and statistics for each tank was compiled from a number of different sources. Not surprisingly, these sources sometimes give different names, armor thicknesses, dimensions, and so on. Each tank is listed in the order it appears on the *Under Fire* unit menu. The cost for the tanks that appeared on the Original Units/Scenarios disk have been adjusted to reflect the inclusion of a wider selection of vehicles.

Each tank is described with the following statistics:

Name: usually the most common reference, sometimes including alternate names or official government designations.

Country of Origin: the country in which the tank was built. Some tanks were built by one country, then sold to another (like the Sherman).

Crew: number of crew members

Armament: main gun size only, measured in millimeters

Armor: where possible, specific measurements in millimeters for each part of the tank was included. Where the figures were not available, the minimum and maximum thicknesses were used.

Dimensions: measurements given in feet and inches

Weight: weight given in pounds

Performance: road speed and road range given only

THE VEHICLES

GERMAN

Panther

The sudden appearance of the T-34 in 1941 surprised the Germans, and the result was an attempt to emulate its features in the PzKpfw series. The Panther was the result. While the original design copied the T-34, the High Command decided instead to incorporate its features into a design that included the long 75mm gun and thick frontal armor.

Its first appearance at Kursk was marred when most broke down after a few miles due to an inadequate cooling system. Once that problem was solved (by refitting the initial production run that were still moving), the Panther

became a popular tank, able to survive against the T-34. Its power was respected by the Allies: the US Army reported that on the average it took five Shermans to destroy a Panther. Over 5,000 were produced, saw service throughout the rest of the war, and were absorbed into the French and Soviet armies afterwards.

Name: Panzerkampfwagen V; Sdkfz 171

Country of Origin: Germany

Crew: 5

Armament: 75mm

Armor: 120mm turret; 80mm hull

Dimensions: 20'11.5" long; 12'2.5" wide; 7'6" high

Weight: 89,200 lbs.

Performance: road speed 29 mph; road range 124 miles

Panther



Panzer IV

Pzk-IV

In formulating the tank specifications for the army, General Heinz Guderian believed that two types of tanks would be needed: those carrying a high-velocity anti-tank gun, and support tanks with large-calibre guns. The latter was the basis of the Pzk-IV.

In the early models that served in Poland and France, it was found that the worthy design was marred by its thin armor. The E model had a new cupola and more armor. With the F and G versions, the tank was fitting easily into its new role, and when the IVh appeared, its powerful 75mm gun enabled it to take on almost any tank, including the T-34. Over 8,000 were produced in all versions, some which still saw action in the 1967 Six Day War as static anti-tank emplacements.

Name: PzKpfw IVh; SdKfz 161
Country of Origin: Germany
Crew: 5
Armament: 75mm
Armor: 90mm to 20mm thick
Dimensions: 19'5" long; 9'7" wide; 8'6" high
Weight: 43,431 lbs.
Performance: road speed 24 mph; road range 124 miles

Pzk-III

The III was designed to carry a high velocity anti-tank gun. Originally intended to carry the 50mm gun, it was downgraded to accommodate the 37mm, but the tank size remained the same to allow for future upgrading (which happened with the IIIg). The Ausf H also carried more armor in its hull and turret, and a wider track to carry the increased weight. The III became outmatched against the T-34 and KV tanks. Over 2,600 were produced and used throughout the war.

Name: PzKpfw IIIh; SdKfz 141
Country of Origin: Germany
Crew: 5
Armament: 50mm
Armor: 80mm to 30mm thick
Dimensions: 18'1" long; 9'8" wide; 9'8" high
Weight: 43,600 lbs.
Performance: road speed 25 mph; road range 109 miles

Tiger I

As far back as 1937, while the PzKpfw III and IV were the centerpiece of the rebuilding Wehrmacht, the decision

Panzer III



Tiger I

was made to build an even heavier and more powerful tank. From the moment it appeared, the Tiger I became the most powerful tank in the world. Its front armor could absorb almost any shot, and its 88mm gun was powerful. Special tactics were needed to fight it, and stories of its effectiveness in battle were legendary. In one instance, a Tiger held up an entire division in France, and killed 25 tanks before being destroyed.

Not surprisingly, the major shortcoming of the Tiger I was in its speed, and, more importantly, how it was deployed. When used in ambush, or on the defensive, it was supreme. But when it was used in offensive situations, or deployed far enough apart to allow shots on its side or rear, it could be destroyed, as at Leningrad and Kursk. But its reputation had a noticeable effect on the morale of infantrymen; after first encountering a Tiger, every tank thereafter became even more fearsome.

The design of such a heavy tank created unique handicaps of which the enemy could take advantage. While its eight torsion-bars gave a stable ride, they also froze during winter. Russian winter attacks were planned with that idea in mind. Its weight made it a slow-moving vehicle, and a British clutch and brake steering system had to be adapted for it. Once Allied tankers found that they could maneuver behind it and penetrate the rear armor, its effectiveness dropped, causing it to be phased out in 1944. Over 1,300 Tigers were produced.



Wespe



Tiger II

Name: PzKpfw VIe; SdKfz 181
Country of Origin: Germany
Crew: 5
Armament: 88mm
Armor: 110mm mantlet; 100mm hull; 80mm sides; 26mm decks
Dimensions: 27' long; 12'3" wide; 9'4" high
Weight: 121,253 lbs.
Performance: road speed 24 mph; road range 62 miles

Tiger II

The heaviest, best protected, and most powerful tank produced during the war, it was also poorly maneuverable, unreliable due to the strain put on the engine and transmission, and, like the Tiger I, unable to cross German bridges. Only about 485 were completed after its introduction in late 1944.

Name: PzKpfw VIb; SdKfz 182 (a.k.a. Royal Tiger, King Tiger)
Country of Origin: Germany
Crew: 5
Armament: 88mm
Armor: 185mm to 80mm thick
Dimensions: 33'8" long; 12'3" wide; 10'2" high
Weight: 153,000 lbs.
Performance: road speed 24 mph; road range 68 miles

Lynx

Designed to be a tracked armor recon vehicle, the model L was the most advanced of the PzKpfw II series. Since its introduction in August 1942, the vehicle saw service in the Soviet Union and France. The PzKpfw III did not have a cupola in its turret; an episcopes and periscope were installed instead.

Name: PzKpfw II, Ausf. L; SdKfz 123
Country of Origin: Germany
Crew: 4
Armament: 20mm
Armor: 35mm to 14.5mm thick
Dimensions: 15'3" long; 8'2" wide; 7'3" high
Weight: 25,600 lbs.
Performance: road speed 40 mph; road range 155 miles

Jag/Pzv

This vehicle combined the Tiger II's gun with the Panther chassis to make a very powerful weapon. A total of 230 Jagdpanthers were built during 1943 and 1944.

Name: Jagdpanzer V; SdKfz 173s
Country of Origin: Germany
Crew: 5
Armament: 88mm
Armor: 80mm hull
Dimensions: 22'7" long; 10'9" wide; 8'11" high
Weight: 89,560 lbs.
Performance: road speed 28 mph; road range 130 miles

Hummel

This weapon mounted a 150mm gun on the chassis of a PzKw. III or IV. Over 600 Hummels were built during 1943 and 1944.

Name: Hummel ("Bumble Bee"); SdKfz 165
Country of Origin: Germany
Crew: 6
Armament: 150mm
Armor: 30mm thick
Dimensions: 19' long; 10' wide; 8' high
Weight: 50,000 lbs.
Performance: road speed 24 mph; road range 124 miles

StG IIIg

One of a series of vehicles mounted on a PzKpfw III chassis. A highly popular model, more than 10,000 were built beginning in April of 1940.

Name: Sturmgeschütz III; SdKfz 142/1
Country of Origin: Germany
Crew: 4
Armament: 75mm
Armor: 50mm thick
Dimensions: 18' long; 9'8" wide; 6'4" high
Weight: 43,300 lbs.
Performance: road speed 25 mph; road range 101 miles

Marder III

In the beginning (around 1938 to be exact), the Czech army released the TNHP-S tank. It was a good tank, and so was absorbed into the Wehrmacht following the country's annexation. Renamed the PzKw 38(t), it followed the German armies into France and the Soviet Union. But against the T-34 and KV-1, the uneven match-up forced the Germans to come up with alternate designs for the PzKw 38(t) body. Refitted with the 7.62cm gun, the Marder III was sent to Africa in 1942. The new gun proved to be a success, and the Marder fought the desert and the East Front. A total of 344 were produced.

Name: Marder III; SdKfz 139
Country of Origin: Germany
Crew: 4
Armament: 76.2mm
Armor: 52mm hull; 15mm sides and rear
Dimensions: 15'3" long; 7'1" wide; 8'3" high
Weight: 23,520 lbs.
Performance: road speed 26 mph; road range 115 miles

Nashorn

This SP gun was mounted on the PzKpfw IV chassis and was part of series of variants used as anti-aircraft guns (Flakpanzer IV) and SP guns (Jagdpanzer IV). Its protection was light, but its gun was effective against the T34. A total of 473 Nashorns were built in 1943-44.

Name: Nashorn ("Rhinoceros"); SdKfz 164
Country of Origin: Germany
Crew: 5
Armament: 88mm
Armor: 33mm thick
Dimensions: 19' long; 9'8" wide; 9'8" high
Weight: 47,240 lbs.
Performance: road speed 24 mph; road range 124 miles

Brumbar

With the realization that tanks and assault guns had proved ineffective against heavily fortified buildings in Stalingrad, studies began on a heavy assault vehicle. A number of models were tested, and in April 1943, the Brumbar appeared with assault companies of the panzer divisions. It was successful in its limited role of street fighting against entrenched positions.

Name: Sturmpanzer IV; Brumbar ("Grizzly Bear"); SdKfz 166
Country of Origin: Germany
Crew: 5
Armament: 150mm
Armor: 100mm front, 30mm hull sides; 20mm rear hull
Dimensions: 19'4" long; 10'2" wide; 8'2" high
Weight: 56,400 lbs.
Performance: road speed 24 mph; road range 124 miles

Hetzer

The Hetzer began its service as a tank destroyer in 1944 to replace the inadequate anti-tank guns and towed guns suffering heavy losses on the Russian front. The Hetzer used the widened chassis of the Czech TNHP-S light tank available since 1938. Between May of 1944 and 1945, the period when the Hetzer fought, 1,577 were produced. Sent to all fronts, a number of them were allocated for the Ardennes Offensive at the expense of Eastern Front units. Hetzers continued to serve after the war in the armies of Czechoslovakia and Switzerland.

Name: JgPz 38(t); Hetzer ("Baiter")
Country of Origin: Germany
Crew: 4
Armament: 75mm
Armor: 60mm front; 20mm side; 8mm rear
Dimensions: 16' long; 9' wide; 6'2" high
Weight: 31,600 lbs.
Performance: road speed 26 mph; road range 130 miles

Wespe

This SP was a 105mm gun mounted on the PzKpfw II chassis, produced during 1942-3.

Name: Wespe ("Wasp"); SdKfz 124
Country of Origin: Germany
Crew: 5
Armament: 105mm
Armor: 30mm thick
Dimensions: 14'6" long; 8'2" wide; 7' high
Weight: 23,600 lbs.
Performance: road speed 40 mph; road range 155 miles



Nashorn

GREAT BRITAIN VEHICLES

Sherman

One of the most popular tanks of the war, partly because it was easy to drive, easy to fire and easy to maintain. When the need for the Sherman was recognized, it had to be produced as quickly as possible, and that it be mass-produced by men who were more familiar with the

automobile assembly line than an engineering factory, and driven and fired by conscripts with little or no training. While not the most powerful or well-protected, its numbers produced and simple design made it recognized as an important Allied tank. It was adapted to many purposes, and some are still in use today. More than 50,000 were

produced and used by the U.S., Great Britain and the Soviet Union. Many of the British Shermans were shipped over during the Lend-Lease period, and first saw action at El Alamein.

Name: Medium Tank M4 (Sherman)
Country of Origin: United States
Crew: 5
Armament: 75mm
Armor: 51mm front and side; 38mm rear and 76mm front turret
Dimensions: 20'7" long; 8'11" wide; 11'1" high
Weight: 69,000 lbs.
Performance: road speed 26 mph; road range 100 miles

Achilles

Appearing early in 1945, the Achilles was a hybrid tank designed for the Tank Destroyer Command by mounting a 17-pdr. high-velocity gun on an M10 medium tank chassis. The result: a powerful anti-tank weapon that was still in use after the war.

Name: Achilles Mark IC
Country of Origin: Great Britain
Crew: 5
Armament: 76mm
Armor: 37mm to 12mm thick
Dimensions: 19'7" long; 10' wide; 8'1" high
Weight: 66,000 lbs.
Performance: road speed 30 mph; road range 200 miles

Matilda II

One of the better-known tanks of the early period of the war, the Matilda was one reason for British success against the Italians in North Africa. The Matilda I was to be used to support advancing infantry, and was little more than a mobile machine gun nest. The appearance of the anti-tank gun demanded a more powerful weapon, so the II was designed.

A tank is only as effective as what is opposing it at the time. Compromises in the design is required, usually between speed and armor. With the Matilda, its thick armor reduced its speed. It was immune to most Italian tanks and guns, and only the German 88mm gun was consistently effective against it. When guns more powerful than the 2-pdr. appeared, a failed attempt was made to upgrade the Matilda. Close to three thousand were built before production halted in August of 1943.

The Matilda was last used for its original purpose at El

Alamein. They were used thereafter in a variety of ways: to clear minefields with flails, lay bridges, or as bulldozers and flamethrowers. Matildas were also shipped to Australia and the Soviet Union.

Name: Matilda II (A12)
Country of Origin: Great Britain
Crew: 4
Armament: 2-pdr.
Armor: 78mm to 13mm thick
Dimensions: 18'5" long; 8'6" wide; 8'3" high
Weight: 59,360 lbs.
Performance: road speed 15 mph; road range 160 miles

Grant

After declaring war, the rush to build up its army forced Britain to shop in the world arms market. They first went to the United States, which, uncertain about the war's outcome, refused to build a tank for them. But existing tanks were for sale, and quantities of the M3 (renamed the Grant) were purchased in 1940. Later, the Grant was included as part of the Lend-Lease package. These tanks had sponson-mounted 75mm guns that enabled the British to fight German tanks on closer to an equal footing. Its hull-mounted gun did restrict its effectiveness, but it was still a powerful tank for its time.

Name: Grant (modified Medium Tank M3)
Country of Origin: United States
Crew: 6
Armament: 75mm
Armor: 51mm front; 38mm side; 38mm rear; 57mm turret front
Dimensions: 18'6" long; 8'9" wide; 9'4" high
Weight: 60,000 lbs.
Performance: road speed 26 mph; road range 120 miles

A13/MkIV

The Cruiser Tank Mark IV saw service in the first half of the war, but suffered mechanical problems that in part forced its recall. This outgrowth of the Mark III had more armor, was faster, and had a larger turret, but was hampered by the retention of its 2-pdr. gun. By 1940, the Mark IV was used only for training tankers. But 335 were produced and sent to the 1st Armored Division in France and the 7th Armored in North Africa. Some remained in service as late as 1942.

Name: Cruiser Tank Mark IV (A13)
Country of Origin: Great Britain



British Mark IV

Crew: 4
Armament: 2-pdr.
Armor: 30mm to 6mm thick
Dimensions: 19'9" long; 8'4" wide; 8'6" high
Weight: 33,040 lbs.
Performance: road speed 30 mph; road range 90 miles

Crusader

Designed as a heavy cruiser, the Crusader originally was well-armored but had a light gun. The Mark III version solved the gun problem by adding more armor and the 6-pdr. gun, but the designers reduced the crew by one. This gave the commander three jobs: leading the tank, loading the gun and part-time radio operator. Its suspension was very good and could reach speeds of up to 40 mph once the drivers broke the engine's governor. This version saw action in North Africa and Italy. Between May and June 1944, 144 tanks were produced. Many variants of this tank remain in service.

Name: Crusader III Cruiser Tank (A15)
Country of Origin: Great Britain
Crew: 3
Armament: 6-pdr.
Armor: 51mm to 7mm thick
Dimensions: 19'8" long; 8'8" wide; 7'4" high
Weight: 44,240 lbs.
Performance: road speed 27 mph; road range 127 miles

Ch.II

When generals fight the next war with the lessons from the last war, the Churchill stands as an example. Its design was based on a perceived need to cross trenches and obstacles. The result was a 24-foot long tank that can cross a 10-foot trench. Designed and manufactured in a hurry, the early versions produced in mid-1941 broke down under normal use. Although most of its problems were taken care of, its reputation for unreliability stuck. The original Mark had a 3" howitzer, which was replaced with a machine gun in the Mark II version. The Churchill turned out to be a well-protected tank, but slow; a feature that did not hurt in the mountains of Tunis and Italy. Churchills were used in a variety of ways: bridge-layers, flamethrowers, mine clearers and mobile cranes.

Name: Churchill Infantry Tank, Mark II
Country of Origin: Great Britain
Crew: 5
Armament: 2-pdr.
Armor: 102mm to 16mm thick
Dimensions: 24'5" long; 8'2" wide; 10'8" high
Weight: 87,360 lbs.
Performance: road speed 16 mph; road range 90 miles

Ch.VII

The Churchill tank went into several Marks, and this one was a major redesign that featured thicker armor and a 75mm gun mounted on a larger turret. It was the first British tank to have the commander's cupola allow 360 degree

vision when buttoned down. This version lasted the rest of the war.

Name: Churchill Infantry Tank, Mark VII
Country of Origin: Great Britain
Crew: 5
Armament: 75mm
Armor: 152mm to 25mm thick
Dimensions: 24'5" long; 9' wide; 11'4" high
Weight: 89,600 lbs.
Performance: road speed 16 mph; road range 90 miles

Comet

The Comet began life as a variant of the Cromwell that would handle the heavy 77mm gun. But it was a completely different model when the first units appeared in December of 1944, with over 60% of the tanks having new components. Designed with the heavier gun to match German strength in North Africa, it had a strong suspension system, making it agile and fast, but rough. Its top speed was more than the bodies of tank crews could take. It was capable of making high speed jumps, and its only weak points were in its inferior front and belly armor. The Comet participated in the Ardennes Offensive with the 11th Armored Division, and most continued to see service after the war.

Name: Comet Cruiser Tank (A34)
Country of Origin: Great Britain
Crew: 5
Armament: 77mm
Armor: 76mm front; 32mm side and rear; 101mm turret front
Dimensions: 25'1" long; 10' wide; 8'9" high
Weight: 78,800 lbs.
Performance: road speed 32 mph; road range 123 miles

Cromwell

Another tank designed to put the British at a parity with the Germans, the Cromwell became the most important tank during 1944 and 1945 due to its quality and quantity. It featured strong suspension, good armor, and the 75mm gun. The Mark VII version added wider tracks, more armor, and changes to its suspension and engine. This version was popular with tankers for its reliable engine and easy maintenance. The only problem was difficulty in getting out in a hurry, corrected by adding side doors to the front compartment.

Name: Cruiser Tank Mk VII, Cromwell
Country of Origin: Great Britain
Crew: 5
Armament: 75mm
Armor: 76mm to 8mm thick
Dimensions: 20'10" long; 10' wide; 9'4" high
Weight: 61,600 lbs.
Performance: road speed 40 mph; road range 173 miles

Firefly

The Firefly was a Sherman variant that was available in time for the Normandy landings. Strong enough to take



Crusader

on the Tiger and Panther tanks, only a small number were produced, and assigned in individual lots to the troops until early 1945, when more 17-pdr. guns became available.

Name: Sherman IIC, IVC and VC (Firefly)
Country of Origin: Great Britain
Crew: 4
Armament: 17-pdr.
Armor: 51mm front and side; 38mm rear and 76mm front turret
Dimensions: 20'7" long; 8'11" wide; 11'1" high
Weight: 69,566 lbs
Performance: road speed 26 mph; road range 100 miles

Val VIII

The Valentine was one of the more visible British tanks of the war, moving through at least eleven different Marks and numerous variants. (One interesting variant had rockets attached to it in an unsuccessful attempt to create a flying tank.)

The first models appeared in 1940 and over 8,000 were produced until 1944. Its name came from the date the original design was submitted (14 February 1938).

Before 1939, the British Army believed that tanks should be designed with one of two functions in mind: a cruiser to perform cavalry functions, and a heavy tank with armor for infantry support. For the heavy tank like the Valentine, adding armor meant sacrificing speed and performance.

The Valentine VIII was a redesign of the Valentine III that eliminated a crew member and replaced the 2-pdr. gun with a 6-pdr. The tank suffered from a small turret, which housed two of the three-man crew. Like the Crusader, the commander had to load the main gun, command the ve-

hicle, select targets for the gunner and man the radio. There was no cupola, so his sight was very restricted. Because of this, the main hatch was usually left open for the commander to bob his head through.

Name: Valentine Infantry Tank Mark VIII
Country of Origin: Great Britain
Crew: 3
Armament: 6-pdr.
Armor: 65mm to 8mm thick
Dimensions: 17'9" long; 8'8" wide; 7'6" high
Weight: 35,840 lbs.
Performance: road speed 15 mph; road range 90 miles

Croc.VII

This variant of the Churchill VII featured a flame-thrower, the fuel for which was carried in a two-wheeled trailer.

Name: Churchill Crocodile VII
Country of Origin: Great Britain
Crew: 5
Armament: 75mm thick
Dimensions: 24'5" long; 9' wide; 11'4" high
Weight: 89,600 lbs.
Performance: road speed 16 mph; road range 90 miles

Priest

(see the United States section for information)

M12

(see the United States section for information)



Valentine Mark III

ITALIAN VEHICLES

Autob 41

The Autoblinda vehicles were armored cars first developed around the time of the Spanish Civil War to be used by cavalry and reconnaissance units. The first models had twin 8mm machine guns, which were replaced with a 20mm gun on the AB 41. This version was the most widely produced armored car and was used throughout the war in North Africa, the Soviet Union, Italy and Hungary.

Name: Autoblinda ("armored car") 41
Country of Origin: Italy
Crew: 4
Armament: 20mm
Armor: 9mm turret; 9mm hull
Dimensions: 17'1" long; 6'4" wide; 8'2" high

Weight: 14,800 lbs.
Performance: road speed 48 mph; road range 250 miles

L6/40

Featuring a 20mm gun mounted on an offset turret and a coaxially mounted 8mm machine gun, the L6/40 was considered the equal of the German PaKpfw II. It was assigned to cavalry and reconnaissance units. Almost three hundred were produced and used from 1940 to 1943 in North Africa, the Soviet Union and Italy.

Name: Carro Armato ("tank") L6/40
Country of Origin: Italy
Crew: 2
Armament: 20mm

Armor: 30mm turret and front; 14.5mm sides and rear; 6mm deck and floor
Dimensions: 12'6" long; 6'4" wide; 6'8" high
Weight: 13,400 lbs.
Performance: road speed 25 mph; road range 124 miles

M11/39

As the standard medium tank for the Italian Army, the M11/39 was an elegant design, with its front drive, left-offsetting turret, and side access doors. But when 70 were sent to Libya, it proved to be no match against the British, and most were captured or destroyed by July 1941 during O'Connor's Offensive. About a hundred were produced. Despite its drawbacks, this tank founded the line of Italian medium tanks, with future versions attempting to improve on the original design.

Name: Carro Armato M11/39
Country of Origin: Italy
Crew: 3
Armament: 37mm
Armor: 30mm turret and front; 14.5mm sides; 6mm deck and floor
Dimensions: 15'7" long; 7'2" wide; 7'7" high
Weight: 22,000 lbs.
Performance: road speed 21 mph; road range 124 miles

M13/40

The next tank after the M11/39 was an excellent design, with more armor, horsepower and a larger main gun. Eight hundred were produced, of which more than two hundred were sent to the Western Desert. Along with the M14/41, it became the mainstay of the Italian army, but was out-classed by the Matilda, the Lee and the Grant. Despite its slow speed, it was more than a match for the British cruisers and the Stuart.

Name: Carro Armato M13/40
Country of Origin: Italy
Crew: 4
Armament: 47mm
Armor: 40mm turret front; 30mm front hull; 25mm sides and rear; 14mm top, deck and floor
Dimensions: 16'2" long; 7'3" wide; 7'10" high
Weight: 27,600 lbs.
Performance: road speed 20 mph; road range 124 miles

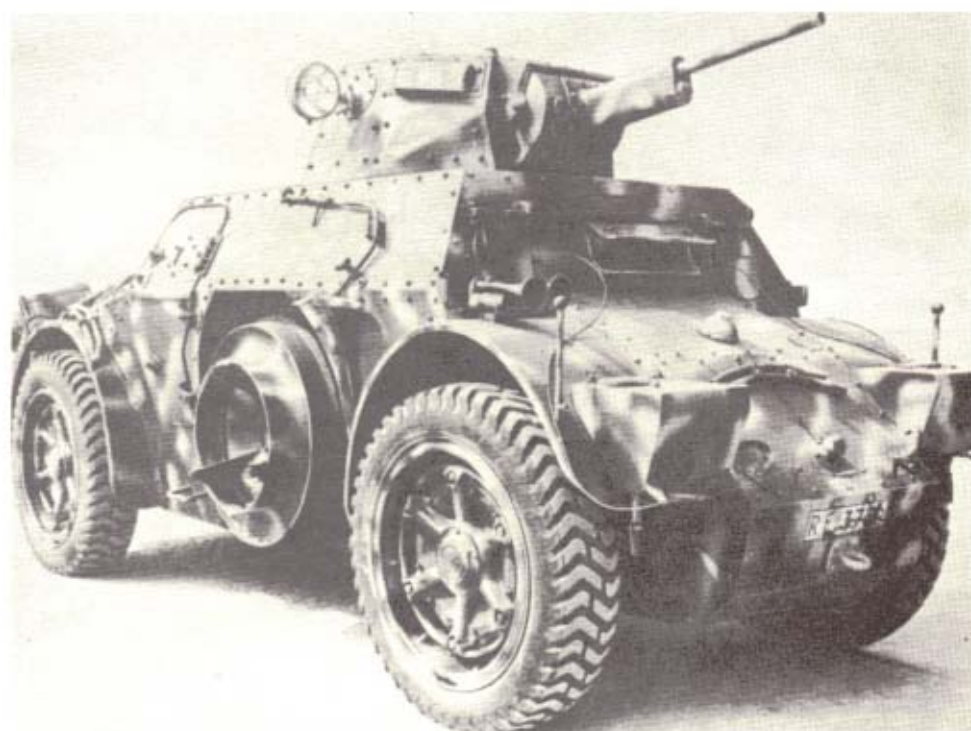
M14/41

This is the M13/40 with a more powerful engine. Over a thousand were produced, most of which saw service in North Africa.



L6/40

Autoblinda 41



Name: Carro Armato M14/41
Country of Origin: Italy
Crew: 4
Armament: 47mm
Armor: 40mm turret front; 30mm front hull; 25mm sides and rear; 14mm top, deck and floor
Dimensions: 16'2" long; 7'3" wide; 7'10" high
Weight: 29,000 lbs.
Performance: road speed 20 mph; road range 124 miles

M15/42

This revision of the M14/41 differs from the former by having a gasoline engine, armored covers for the exhaust pipes, and a heavier, longer 47mm gun. This was a top quality medium tank, but only 82 were built, most of which were used in 1943 against the Germans, which reused what they could capture.

Name: Carro Armato M15/42
Country of Origin: Italy
Crew: 4
Armament: 47mm
Armor: 45mm turret; 42mm hull front; 25mm sides and rear; 14mm deck and floor
Dimensions: 16'7" long; 7'4" wide; 7'11" high
Weight: 31,000 lbs.
Performance: road speed 25 mph; road range 137 miles

Sem.M40

This excellent self-propelled gun was a 75mm gun mounted on one of three tank chassis: the M13/40, M14/41 and the M15/42 (the figures below are taken from the M14/41). First appearing in late 1941, over 200 of them were produced and used primarily in an anti-tank or self-propelled artillery role.

Name: Semovente ("self-propelled gun") M40 da 75/18
Country of Origin: Italy
Crew: 3
Armament: 75mm
Armor: 40mm turret front; 30mm front hull; 25mm sides and rear; 14mm top, deck and floor
Dimensions: 16' long; 7'3" wide; 5'1" high
Weight: 28,800 lbs.
Performance: road speed 20 mph; road range 124 miles

M41 How

A special *Under Fire* variant, this version was never manufactured beyond the one production model currently on display at Aberdeen Proving Ground in Maryland.

Name: Semovente da 149/40
Country of Origin: Italy
Crew: 2 (with gun crew in separate vehicle)
Armament: 149mm
Armor: 25mm frontal; 14mm sides; 6mm top deck
Dimensions: 21'4" long; 9'8" wide; 6'7" high
Weight: 48,000 lbs.
Performance: road speed 22 mph; road range 124 miles

M41

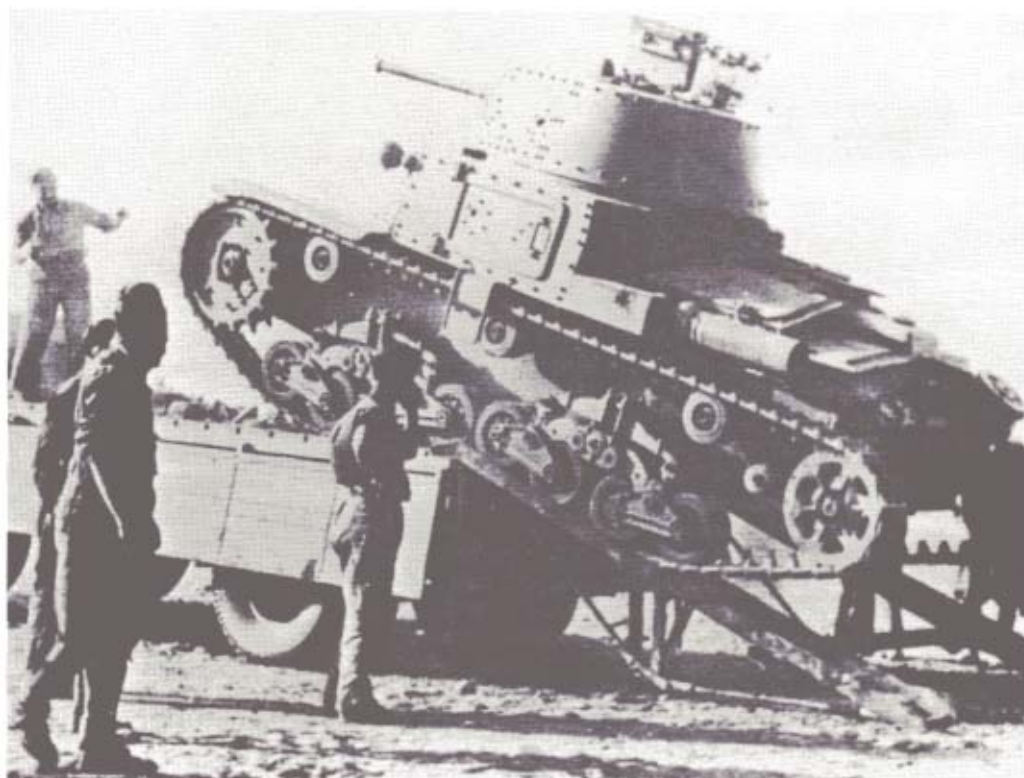
Approximately 25 of these vehicles were produced, filling the gap between the 75/18 gun/howitzer and the 75/34.

Name: Semovente da 75/32
Country of Origin: Italy
Crew: 3
Armament: 75mm
Armor: 40mm turret front; 30mm front hull; 25mm sides and rear; 14mm top, deck and floor
Dimensions: 16' long; 7'3" wide; 5'1" high
Weight: 28,000 lbs.
Performance: road speed 20 mph; road range 124 miles

M41 (90mm)

Mounted on a modified M14/41 tank chassis, the M41M was designed as an anti-tank weapon to counter the Russian T-34 tank. Only 30 were produced by June 1943, sent not to the Soviet Union, but used by the Raggruppamento Semoventi in Sicily. Of its ammunition capacity, six rounds were on board, 26 carried by an ammunition carrier, and the rest in a caisson towed by the carrier.

Name: Semovente M41M da 90/53
Country of Origin: Italy
Crew: 4
Armament: 90mm
Armor: 40mm front gun shield; 25mm front and sides; 10mm gun shield side; 14mm floor
Dimensions: 17'1" long; 7'3" wide; 7' high
Weight: 34,000 lbs.
Performance: road speed 22 mph; road range 124 miles



M14/41

JAPANESE VEHICLES

Shinhoto

In the 1939 Sino-Soviet clash, the Japanese learned that their Type 97 gun was ineffective against the Soviets. A number of Type 97 tanks were refitted with the Model 1 47mm anti-tank gun in an enlarged turret. In 1941, the new version was rechristened the Shinhoto Chi-Ha (the Shinhoto meaning "new turret"). The refitting was welcome, but still no match against Allied tanks and guns.

Note: Japanese tank types were numbered for the last two digits of the year on the Japanese calendar that the design was approved. The prototype for the Type 97, for instance, was built in 1937 (2597 on their calendar).

Name: Medium Tank Type 97 Shinhoto Chi-Ha

Country of Origin: Japan

Crew: 4

Armament: 47mm

Armor: 28mm to 8mm thick

Dimensions: 18' long; 7'8" wide; 7'4" high

Weight: 33,000 lbs.

Performance: road speed 23.6 mph

Type 97

The Type 97 Chi-Ha was meant to replace the Type 89 series. The version first produced in 1937 featured a two-man turret, two 7.7mm machine guns mounted in the hull and the turret, and increased suspension. The Type 97 was one of the most technically advanced tanks, except for its short, ineffective 57mm gun. Its armor was well-sloped and compact, and the diesel motor gave good service. Several thousand were built.

Name: Medium Tank Type 97 Chi-Ha

Country of Origin: Japan

Crew: 4

Armament: 57mm

Armor: 25mm to 8mm thick

Dimensions: 18'1" long; 7'8" wide; 7'4" high

Weight: 33,069 lbs.

Performance: road speed 23.6 mph; road range 130.5 miles

Type-98a

This light tank improved the Type 95 tank by adding thicker armor with an increased slope, a Model 100 37mm gun and two Model 97 7.7mm machine guns. The driver was moved to the center and given a steering wheel. Because of the success of the Type 95 Ha-Go, the Ke-ni was not put into production until 1942, when 200 were built.

Name: Light Tank Type 98-A Ke-Ni

Country of Origin: Japan

Crew: 3

Armament: 37mm

Armor: 16mm to 6mm thick

Dimensions: 13'6" long; 7' wide; 6' high

Weight: 14,000 lbs.

Performance: road speed 34 mph; road range 186 miles

Type 95

This light tank was designed in 1933 as a well-armed fast tank for mechanized brigades. Ahead of its time, it was obsolete by world standards when the war broke out. The type 95 featured a hand-traversed offset turret and a forwardthrusting front compartment housing a 7.7mm machine gun. The Type 95 remained in production until 1942 and was Japan's most widely used light tank.

Name: Light Tank Type 95 Ha-Go

Country of Origin: Japan

Crew: 3

Armament: 47mm

Armor: 12mm to 6 mm thick

Dimensions: 14'1" long; 6'10" wide; 7'6" high

Weight: 14,600 lbs.

Performance: road speed 25 mph; road range 155 mph

Type 94

The British Vickers Medium Mk C tank was the basis for this medium tank. Originally the Type 89, which appeared in 1932, it was upgraded and called the Type 89B.



Shinhoto Chi-Ha

Also referred to as the Type 94 (for the last two digits of the year the change was approved – 2594 on the Japanese calendar), this series featured a sloping glacis plate, box hull containing a machine gun, and turret placed forward. The Type 94 also had, among other changes, a sloping front plate and a redesigned turret with commander's cupola. This was one of the most widely used tanks during the war.

Name: Medium Tank Type 94 (89B Chi-Ro Otsu)
 Country of Origin: Japan
 Crew: 4
 Armament: 57mm
 Armor: 17mm to 6mm thick
 Dimensions: 18'10" long; 7'2" wide; 8'5" high
 Weight: 25,000 lbs.
 Performance: road speed 15.5 mph; road range 106 miles

T-1/Honi

This support gun mounted a 75mm gun on a Type 97 chassis. It was introduced in April of 1942 and served throughout the war, although no large quantities were produced.

Name: Type 1 Honi (Gun Tank Type 2 Ho-1)
 Country of Origin: Japan
 Crew: 4
 Armament: 75mm
 Armor: 25mm to 8mm thick
 Dimensions: 18'1" long; 7'8" wide; 7'4" high
 Weight: 33,069 lbs.
 Performance: road speed 23.6 mph; road range 130.5 miles

Type-38

This field howitzer mounted a 150mm cannon (built in 1905, thereby accounting for the very early type number) on the body of the Type 97. Like the Honi, it first appeared in the second quarter of 1942.

Name: Type 38 Howitzer
 Country of Origin: Japan
 Crew: 4
 Armament: 150mm
 Armor: 25mm to 8mm thick
 Dimensions: 18'2" long; 7'6" wide; 7'4" high
 Weight: 33,069 lbs.
 Performance: road speed 24 mph; road range 130.5 miles

SOVIET UNION VEHICLES

T34-76

After the BT series of wheel/tracked tanks appeared, efforts were underway to modernize it. The designer in charge of the project believed that remaining true to the BT design would cause weight problems reducing its effectiveness. He received permission to change the design, and the T-34 was in production by 1939.

When the Germans invaded in 1941, over 1,200 were produced, their existence kept hidden from German intelligence – and even the Soviet tank crews – until they were used in combat. The invaders faced a tank whose shaped armor increased its defense strength, and a 76.2mm gun considered an innovation. Like most Red Army vehicles, it was easy to repair and maintain by troops who did not have time or experience. The appearance of the T-34, and its ability to match German armor strength, was one of the revolutionary turning points of the war.

Name: T34/76c Medium Tank
 Country of Origin: Soviet Union
 Crew: 4
 Armament: 76.2mm

Armor: 60mm to 18mm thick
 Dimensions: 24'7" long (incl. gun); 9'7" wide; 7'10" high
 Weight: 70,547 lbs.
 Performance: road speed 31 mph; road range 186 miles

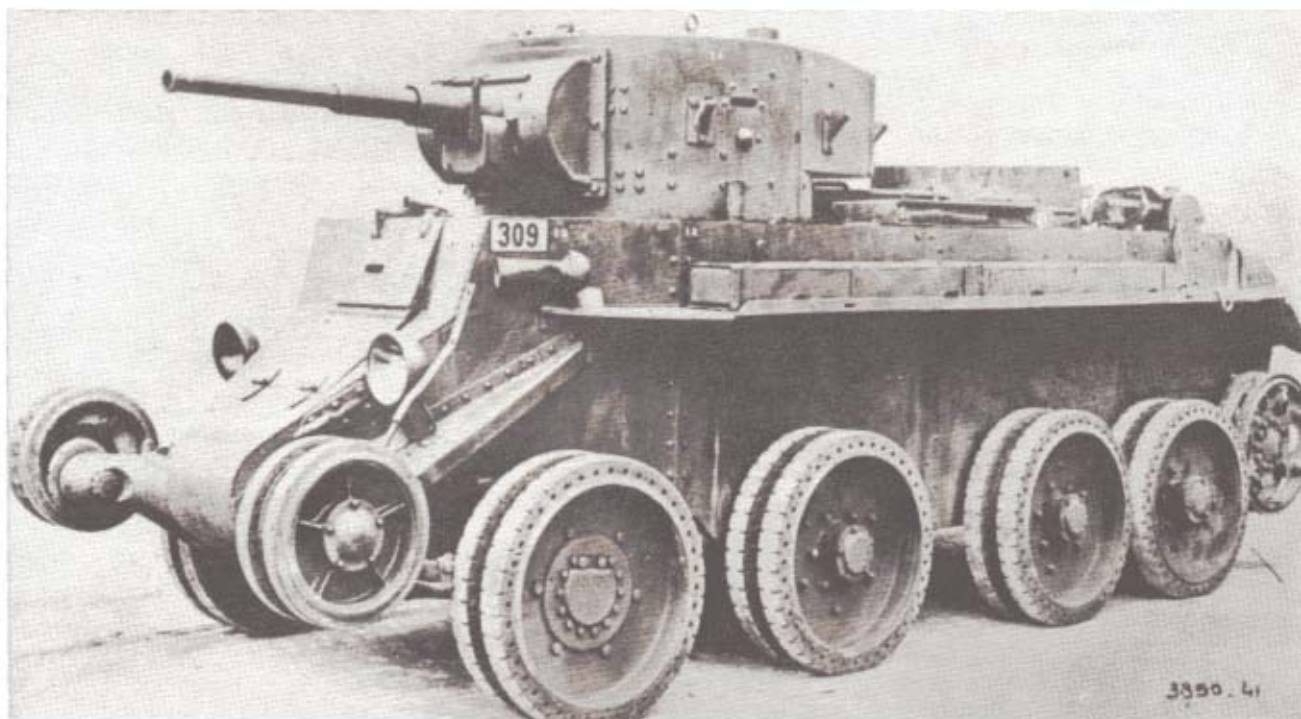
KV-85

The KV-85 is part of a line of heavy tanks used throughout the war. Appearing in the fall of 1943, it was the first of the series to carry a 85mm gun, and also received thicker armor.

Name: KV-85 Heavy Tank
 Country of Origin: Soviet Union
 Crew: 5
 Armament: 85mm
 Armor: 100mm to 75mm thick
 Dimensions: 20'7" long; 10'2" wide; 7'11" high
 Weight: 104,719 lbs.
 Performance: road speed 22 mph; road range 156 miles

BT-7

Based upon an American design by J.W. Christie back in 1930, the seventh tank in the series featured a redesigned turret. The purpose of the BT was to penetrate deep behind



BT-7 in wheeled mode

the lines and take out communication centers and headquarters.

The most unusual feature of the BT was its ability to operate as a wheeled or tracked vehicle. As a wheeled car, power was shifted to the rear wheels, while the front wheels could be steered like a car. This increased the vehicle's road speed to 46 mph and almost doubled its range, and it took 10-15 minutes for a tank crew to make the change. However, it is not believed that the Red Army made extensive use of this feature.

Name: BT-7 Fast Tank
Country of Origin: Soviet Union
Crew: 3
Armament: 45mm
Armor: 22mm to 10mm thick
Dimensions: 18'7" long; 7'6" wide; 7'11" high
Weight: 30,644 lbs.
Performance: road speed 33 mph (tracked model); road range 270 miles

JS-II

The "Josef Stalin" series was developed when the Soviets learned that the Germans were working on heavy tanks of their own, and to counter the use of the 88mm gun. The JS-I carried the 85mm gun, and demands came for a more powerful tank followed soon after its introduction. The JS-II began production at the end of 1943.

The basic design was a modification of the KV-85, changed to allow a bigger turret, and a cast-formed nose section and sloping hull rear like the T-34.

Name: JS-II Heavy Tank (a.k.a. IS-II)
Country of Origin: Soviet Union
Crew: 4
Armament: 122mm
Armor: 132mm to 19mm thick
Dimensions: 32'9" long (incl. gun); 10'6" wide; 8'11" high
Weight: 101,963 lbs.
Performance: road speed 23 mph; road range 94 miles

JS-III

After the JS-II appeared in battle in February 1944, its shortcomings were corrected in the JS-III. This time, the model had more armor, a change in the internal layout, and a new turret design. Appearing first in January of 1945, full production started much later, and its appearance in the September 1945 victory parade in Berlin caused a sensation due to its advanced design.

Name: JS-III Heavy Tank (a.k.a. IS-III)
Country of Origin: Soviet Union
Crew: 4
Armament: 122mm
Armor: 132mm to 19mm thick
Dimensions: 32'9" long (incl. gun); 10'6" wide; 8'11" high
Weight: 101,963 lbs.
Performance: road speed 23 mph; road range 94 miles

T-26

An old tank involved in the early part of the war, the first model appeared in 1931 and was based upon the British Vickers 6-ton tank. The earlier version (T-26A) had twin machine gun turrets, while the model in the game had a single 45mm gun.

Name: T-26B Light Tank
Country of Origin: Soviet Union
Crew: 3
Armament: 45mm
Armor: 17mm to 5mm thick
Dimensions: 15' long; 7'11" wide; 7'2" high
Weight: 15,680 lbs.
Performance: road speed 22 mph; road range 100 miles

T34/85

This version of the T-34 (fitted with the 85mm gun) appeared in 1944. By the end of the war, more than 11,000 were produced, and remained in service until the 70s in a variety of roles.



JS-III (left) and JS-II (right)



JSU-152

Name: T34/85 Medium Tank
Country of Origin: Soviet Union
Crew: 5
Armament: 85mm
Armor: 110mm to 18mm thick
Dimensions: 24'7" long (incl. gun); 9'7" wide; 7'10" high
Weight: 70,547 lbs.
Performance: road speed 31 mph; road range 186 miles

T-70

Developed during the war years, the T-70 was a compromise between giving a few units good tanks, and giving

everyone a tank of considerably less quality. It was discovered that there was no need for a light tank, but the T-70 was easy to build in quantity; over eight thousand tanks were produced.

Name: T-70 Light Tank
Country of Origin: Soviet Union
Crew: 2
Armament: 45mm
Armor: 60mm to 10mm thick
Dimensions: 15'3" long; 7'8" wide; 6'9" high
Weight: 22,000 lbs.
Performance: road speed 32 mph; road range 279 miles



T-26



SU-85

T-34



SU-76

This "open air" assault gun was introduced in 1942 and used frequently to support infantry. It remained in production until 1944.

Name: SU-76
Country of Origin: Soviet Union
Crew: 4
Armament: 76mm
Armor: 25mm thick
Dimensions: 15'3" long; 7'8" wide; 6'9" high
Weight: 22,000 lbs.
Performance: road speed 32 mph; road range 279 miles

SU-152

This heavy assault gun was built on a KV chassis and sported a powerful 152mm howitzer.

Name: SU-152
Country of Origin: Soviet Union
Crew: 4
Armament: 152mm
Armor: 45mm thick
Dimensions: 20'7" long; 10'2" wide; 7'11" high
Weight: 92,000 lbs.
Performance: road speed 22 mph; road range 156 miles

SU-85

Built on the T34 chassis, this tank destroyer was widely used by the Soviets.

Name: SU-85
Country of Origin: Soviet Union
Crew: 4
Armament: 85mm
Armor: 45mm thick
Dimensions: 24'7" long (incl. gun); 9'7" wide; 7'10" high
Weight: 70,000 lbs.
Performance: road speed 31 mph; road range 186 miles

SU-100

This improved variant on the SU-85 was produced in late 1944.

Name: SU-100
Country of Origin: Soviet Union
Crew: 4
Armament: 100mm
Armor: 110mm to 18mm thick
Dimensions: 32' long (incl. gun); 9'10" wide; 7'6" high
Weight: 62,000 lbs.
Performance: road speed 31 mph; road range 186 miles

SU-122

This assault gun was produced from late 1943 until the end of the war.

Name: SU-122
Country of Origin: Soviet Union
Crew: 4
Armament: 122mm
Armor: 45mm thick
Dimensions: 24'7" long (incl. gun); 9'7" wide; 7'10" high
Weight: 70,000 lbs.
Performance: road speed 31 mph; road range 186 miles

UNITED STATES VEHICLES

Sherman

See the entry under Great Britain vehicles for information on its capabilities.

Almost every Allied nation added the M4 to their armories. Like the M3, its height proved a disadvantage, and was unsuitable when fighting the Panther and Tiger tanks. These disadvantages were countered by the enormous number of Shermans thrown into battle. Over 40,000 M4s were produced.

M/10

One concept in US armor development was the creation of a Tank Destroyer force, believing that the best way

to fight a tank was with vehicles armed with large-caliber weapons that can move quickly. These vehicles would be vulnerable due to their thin armor, but their speed would get them out of trouble. This Sherman variant placed a 76mm gun on the M4A2 chassis. The first models appeared in June 1942.

Name: Gun Motor Carriage M10
Country of Origin: United States
Crew: 5
Armament: 76mm
Armor: 37mm hull; 12mm sides and rear
Dimensions: 19'7" long; 10' wide; 8'2" high
Weight: 66,000 lbs.
Performance: road speed 30 mph; road range 200 miles



Sherman

Stuart

The Stuart light tank was ordered by the British and used in the North African campaign, primarily in a recon role.

The description below is for the M3A1, the first production version.

Name: Light Tank M3
Country of Origin: United States
Crew: 5
Armament: 37mm
Armor: 38mm front; 25.4mm side; 38mm turret front
Dimensions: 15' long; 7'4" wide; 7'6" high
Weight: 28,500 lbs.
Performance: road speed 36 mph; road range 70 miles

Grant

See the Grant entry under Great Britain vehicles for more information.

Originally intended as a stop-gap, the M3 (named the Grant by the British) became one of the more popular tanks in the early part of the war. The chassis was based on the M2A1, its gun was changed from the 75mm to a 37mm based on the French '75' dating from WWI, and one of the first tanks to be produced via the assembly line. A total of 6,258 were produced. Despite the obstacles to overcome, the tank was considered a success until it was scrapped in 1944.

Name: Medium Tank M3
Country of Origin: United States
Crew: 6
Armament: 75mm



Hellcat



Pershing

Armor: 51mm front; 38mm side; 57mm turret front
Dimensions: 18'5" long; 8'10" wide; 10'4" high
Weight: 60,000 lbs.
Performance: road speed 26 mph; road range 100 miles

M4A3/HOW

This variant on the Sherman design was fitted with a 105mm gun and used in the close support role. The first vehicles were produced in early 1944. Specifications are those of the Sherman.

Name: Medium Tank M4A3 Howitzer
Country of Origin: United States
Crew: 5
Armament: 105mm
Armor: 63.5mm turret and front; 38mm sides and rear
Dimensions: 24'7" long; 8'10" wide; 11'3" high
Weight: 71,175 lbs.
Performance: road speed 29 mph; road range 100 miles

Cobra

Another heavily armored tank, the Cobra was also nicknamed "Jumbo." Its numerical designation was part of a common set of notations the Americans used and applied to everything from tanks to tents. In the case of the M4A3E2, the M4 stood for Medium Tank 4 (applied to the Sherman series), the A3 for the third series of alterations, and the E2 for the second experimental model. A standard problem among the troops was that a person talking about an M4 could be talking about a tank, a gun or an artillery piece; hence the use of nicknames like "Jumbo."

Name: M4A3E2 (a.k.a. "Cobra", "Jumbo")
Country of Origin: United States
Crew: 5
Armament: 76mm
Armor: 150mm turret; 100mm hull
Dimensions: 24'7" long; 8'10" wide; 11'3" high
Weight: 84,000 lbs.
Performance: road speed 22 mph; road range 100 miles

Chaffee

The Light Tank M24 was intended to replace the 37mm gun with the 75mm. Fitting it to the M5 chassis proved unsatisfactory, and a new design was requested. The M24 was the result, entering service in late 1944. Some made it to Europe in time for the final assault on Germany. The M24 remained in service, and was extensively used in

Korea.

The Chaffee's importance lies in its ability to be adapted for a variety of roles. The chassis was fitted with 155mm howitzer, 40mm Bofors anti-aircraft guns, and the 105mm howitzer.

Name: Light Tank M24
Country of Origin: United States
Crew: 5
Armament: 75mm
Armor: 25.4mm front; 38mm turret front; 19mm side and rear
Dimensions: 16'3" long; 9'8" wide; 8'1" high
Weight: 40,500 lbs.
Performance: road speed 35 mph; road range 100 miles

Hellcat

This vehicle was developed specifically to destroy tanks. See the M10 description above for more information on the role of the tank destroyer. The Hellcat, as it was known unofficially, appeared in February 1944. It proved to be a powerful weapon, accentuated by its speed, its 76mm gun and its low profile. A number of variations were made on this model. A total of 2,507 were produced before production ceased in October 1944.

Name: Gun Motor Carriage M18 ("Hellcat")
Country of Origin: United States
Crew: 5
Armament: 76mm
Armor: 12.7mm to 7mm thick
Dimensions: 21'10" long; 9'9" wide; 8'6" high
Weight: 40,000 lbs.
Performance: road speed 55 mph; road range 150 miles

M-26E4

In the field of heavy tank design, the US fell far short of other countries. While a design for one tank (Heavy Tank M6) was produced in 1941, the project was scrapped for a number of reasons. It was an extremely large tank (weighing 56 tons and armed with a 3" gun); two Shermans could be shipped in the space of an M6. Politicians also did not see the need for a heavy tank, and fought its development.

Only when the need for a heavy tank became apparent was the M-26E4 (the "General Pershing") developed. Appearing in 1945, it was a top-quality tank that saw only limited action in Europe and the Pacific.

Name: Heavy Tank M26 (General Pershing)
Country of Origin: United States

Crew: 5
Armament: 90mm
Armor: 101.6mm turret and front; 76mm side; 50.8mm rear
Dimensions: 28'10" long (with gun); 11'6" wide; 9'1" high
Weight: 92,000 lbs.
Performance: road speed 30 mph; road range 92 miles

Priest

The Priest mounted a self-propelled 105mm howitzer on the M10 chassis. The first models appeared in late 1942 and became an important addition to the British armory because it gave them the mobile artillery it needed to keep pace with the tanks. It performed well in North Africa and Italy, but suffered from resupply problems due to its unusual 105mm calibre. In June 1944, it was replaced by the British-made Sexton, with its 25-pdr. gun, to standardize ammunition in the 21st Army Group, and to make more 105mm ammunition available to the Americans.

Name: Howitzer Motor Carriage M7 (British a.k.a. 105mm SP, Priest)
Country of Origin: United States
Crew: 6
Armament: 105mm
Armor: 62mm hull; 12mm sides and rear
Dimensions: 19'9" long; 9'5" wide; 8'4" high
Weight: 50,634 lbs.
Performance: road speed 26 mph; road range 105 miles

M12

The M12 was one of the first US support guns to be designed but one of the last to see combat. The 155mm gun was set on the M3 medium tank chassis, with the engine moved forward, and the driver and commander seated forward in their own compartment. Designed for long-range bombardment of enemy positions, the design spent most of the war bouncing between the Ordnance Department, which supported the project, and the Army Ground Forces, which rejected the idea. In the end, only 100 vehicles were produced by March 1943, 74 of which were sent to Europe in June 1944.

Name: Gun Motor Carriage M12
Country of Origin: United States
Crew: 6
Armament: 155mm
Armor: 51mm front; 38mm side
Dimensions: 22'1" long; 8'9" wide; 8'10" high
Weight: 58,000 lbs.
Performance: road speed 24 mph; road range 140 miles

Son Of The Under Fire Interview

This interview continues the one published in the Under Fire rulebook.

Bill Peschel: Let's begin with the Extended Capability disk. How were the tanks selected?

Ralph Bosson: First off, I have to say that there was only so much space on the disk. With that limitation, and the desire to put vehicles from six countries on it, there had to be some omissions, some of which will be covered on the second EC disk.

The criteria was, first, to select tanks we had data on. Then, was the tank well-known? If so, I tried to use it. I couldn't use all the well-known tanks for some nations because there were so many of them. The next criteria was play balance, to give each country something that would give them a chance against any other country. Then, there were tanks that had subtle differences in the amount of ammunition it carried. There is an Italian tank (the M11/39) that has 15 shots, making it excellent for goading other tanks into wasting their ammo. It's also great for taking out half-tracks and trucks, blowing walls so armor can enter. Because it can carry that extra ammo, it can blow holes through terrain while those that carry six shots have to

save it.

BP: How were the values determined, and why were some of the costs changed for tanks that appear on both disks?

RB: The values were determined on a curve and, as more and more units were added, the curve changed. The values were based on the size of the tank, its speed, and to a smaller degree how many were built. If the tank was poor and not many were built, I didn't increase its price. I also considered the number of machine guns it carried, and its general ability to survive and inflict damage.

While we're talking, there are some hidden goodies in the game for the more experienced players. Give you an example: Extended Move forces a unit to move even though it may be brought under fire, unless it broke. It cannot be given a combat order. The trick to using it properly is to combine the Extended Move with the Scouting Mode. Then, when it spots an enemy unit, it will cancel its Extended Move and stop. You lose the next combat period because it must reset its weapons, but it can attack in the combat phase after that. It's a way to use the Extended Movement without much risk, and it's not obvious when you read the rules.

BP: That's especially valuable when you're attempting a breakthrough. The nature of the scenario forces you to expose your units to attack.

RB: The rulebook states it, but doesn't put it together. Also, once a unit is in the Scouting mode, its status can be changed to Standard mode by leaving the unit and reselecting it. The unit must not be given a movement order (its clock must be at :00). So, if you give a unit Scouting, drop down to the movement menu and decide you want him in Standard, you must clear any movement orders you gave him, select the Done option, then reselect that unit. You can change the mode then.

Another thing people don't realize is that sighting is different depending upon the mode you're in. Suppose you're Scouting and you spot some tanks at the end of the movement phase. Now it's turn two and you want to attack them. You button up by putting your tank in Standard mode, and find out that you cannot see them anymore. You burned yourself out of a shot. What happened is that in Scouting mode, you're considered to be at one terrain level higher than at Standard. You can check your Line of Sight from the HQ menu by putting your unit into Scouting, going to the LOS option, then into Standard and checking again.

BP: Let's discuss some of the playtester comments. One questioned the use of indirect fire, saying that it seems to be much more accurate than historically.

RB: He was talking about arc indirect fire, such as a unit firing over a building, at a position behind the building. Recreating that exactly means calculating the arc of that fire and judging which units can and cannot do it. In order for it to be truly accurate, I would have to take into account the arc of fire to find out how close behind the building the tank could fire. The amount of coding needed to store maximum and minimum gun elevation and to determine the arc of fire based on elevation and range would mean remov-

ing other features of the combat system.

Designing a game is full of compromises, so the only alternative I could see is to cancel the ability to fire indirect fire on-map - because there is no way I could get the math into the game. At least most of the time, it's realistic.

He also said that units within a building should not be able to fire indirect from inside. What he didn't know is that each building is actually several buildings, but represented by one. That's why you cannot move from one building to another on the second floor.

BP: Whatever your interpretation of the rule, it does apply equally to both sides. There was also some question about including the Hummel on the Original Units/Scenarios disk, that it was never meant for the front line.

RB: The Hummel was not designed, nor expected, to be used on the front line. Players can bring them forward and use them, but they could have done the same thing during the war. If they do so, they lose the Hummel.

BP: Its armor was 30mm maximum. Even the Matilda II had better frontal armor. But *Under Fire* has the flexibility to allow you to use the vehicles as you wish. Wargamers expect restrictions in their games. But if I'm out in the field, and a Russian tank appears, am I going to say "Don't fire! It's illegal?"

Another comment was the need for scouting vehicles. One playtester put in several great choices for each of the countries, such as the Damlier.

RB: Halftracks make excellent scouting vehicles already, but the Extended Units Disk II will include more tanks, field guns, and scouting vehicles.

BP: Can I announce that in this rulebook?

RB: Sure, let's do that.

SUMMARY OF VEHICLE AND GUN FACTORS

GERMANY

Tanks	SP	AP	HE	HMG	MMG	SUB	Crew	Value
Panther	M	8	5	6	6	4	5	170, 180, 190
Pzk-IV	M	8	6	5	5	4	5	130, 140, 150
Pzk-III	M	9	5	3	3	4	5	110, 120, 130
Tiger I	S	8	6	6	6	4	5	200, 210, 220
Tiger II	S	8	5	8	8	4	5	240, 250, 255
Lynx	F	15	x	5	x	4	4	100, 110, 120

Assault Guns and Mobile Artillery

Jag/Pzv	M	7	3	3	x	4	5	170, 180, 190
Hummel	M	x	6	x	x	4	6	130, 140, 150
StG-III	M	6	2	2	x	4	4	110, 120, 130
Marder	S	6	2	x	4	4	4	120, 130, 140
Nashorn	M	6	2	2	x	4	4	130, 140, 150
Brummbar	S	x	5	x	x	4	5	160, 170, 180
Hetzer	S	6	2	2	x	4	4	130, 140, 150
Wespe	S	x	5	x	4	4	5	120, 130, 140

JAPAN

Tanks	SP	AP	HE	HMG	MMG	SUB	Crew	Value
Shinhoto	M	10	4	4	4	4	4	90, 100, 110
Type 97 How	M	x	8	4	4	4	4	90, 100, 110
Type 98a	M	15	4	4	x	3	3	80, 90, 100
Type 95	M	12	8	5	x	3	3	100, 110, 120
Type 94	M	8	6	5	x	4	4	100, 110, 120

Assault Guns and Mobile Artillery

T-1/Honi	M	6	4	3	x	4	4	120, 130, 140
Type 38	M	x	6	x	3	4	4	140, 150, 160

GREAT BRITAIN

Tanks	SP	AP	HE	HMG	MMG	SUB	Crew	Value
Sherman	M	10	4	4	4	4	5	130, 140, 150
Achilles	M	8	4	4	4	4	5	140, 150, 160
Matilda II	S	8	3	x	3	4	4	80, 85, 90
Grant	M	12	8	8	8	4	6	95, 100, 105
A1.3/MkIV	M	10	4	x	3	4	4	80, 85, 90
Crusader	M	8	4	x	3	4	3	99, 110, 120
Ch.II	S	8	4	6	6	4	5	100, 110, 120
Ch.VII	S	8	4	5	5	4	5	140, 150, 160
Comet	M	7	3	4	4	4	5	140, 150, 160
Cromwell	M	6	4	4	4	4	5	140, 150, 160
Firefly	M	8	4	x	6	4	4	160, 170, 180
Vail VIII	M	6	3	4	x	4	3	90, 100, 110
Croc.VII	S	8	4	2*	5	4	5	140, 150, 160

*indicates flamethrower instead of HMG

Assault Guns and Mobile Artillery

Priest	M	x	8	3	x	4	6	120, 130, 140
M12	S	x	6	x	3	4	6	140, 150, 160

ITALY

Tanks	SP	AP	HE	HMG	MMG	SUB	Crew	Value
Autob 41	F	9	x	3	3	4	3	75, 80, 90
L6/40	S	10	x	4	x	4	2	75, 80, 90
M11/39	S	15	x	3	3	4	3	80, 85, 95
M13/40	S	8	4	3	3	4	4	85, 90, 100
M14/41	M	8	4	x	3	4	4	100, 105, 115
M15/42	M	10	4	5	5	4	4	110, 115, 125

Assault Guns and Mobile Artillery

Sem.M40	S	x	6	3	x	4	4	110, 115, 125
M41 How	S	x	5	5	x	4	4	150, 155, 160
M41	S	6	4	4	x	4	4	120, 125, 135
M41	S	6	2	4	x	4	4	160, 170, 180

SOVIET UNION

Tanks	SP	AP	HE	HMG	MMG	SUB	Crew	Value
T-34-76c	F	8	4	4	4	4	4	140, 150, 160
KV-85	M	8	5	5	5	4	5	160, 170, 180
BT-7	F	12	x	6	6	4	3	85, 90, 95
JS-II	S	4	2	4	4	4	4	195, 205, 215
JS-III	S	4	2	4	4	4	4	230, 240, 250
T-26	F	12	x	x	5*	4	3	90, 100, 110
T34-85	F	7	3	3	3	4	5	170, 180, 190
T-70	M	10	x	x	4	4	3	90, 100, 110

*indicates tank is armed with two MMG

Assault Guns and Mobile Artillery

SU-76	M	8	4	6	x	4	4	90, 100, 110
SU-152	S	x	5	x	x	4	4	140, 150, 160
SU-85	F	7	3	x	x	4	4	140, 150, 160
SU-100	F	6	2	x	x	4	4	160, 170, 180
SU-122	F	x	6	x	x	4	4	130, 140, 150

UNITED STATES

Tanks	SP	AP	HE	HMG	MMG	SUB	Crew	Value
Sherman	M	10	4	4	4	4	5	130, 140, 150
M-10	M	6	3	3	3	4	5	130, 140, 150
Stuart	F	12	4	8	8	4	4	80, 90, 100
Grant	M	12	8	8	8	4	6	95, 100, 105
M4A3/HOW	M	x	7	6	6	4	5	120, 130, 140
Cobra	S	8	4	4	4	4	5	150, 160, 170
Chaffee	F	5	4	6	6	4	5	100, 110, 120
Hellcat	M	6	2	2	2	4	5	120, 130, 140
Pershing	S	8	4	6	6	4	5	180, 190, 200
T-26E4	M	8	4	6	6	4	5	220, 230, 240

Assault Guns and Mobile Artillery

Priest	M	x	8	3	x	4	6	120, 130, 140
M12	S	x	6	x	3	4	6	140, 150, 160

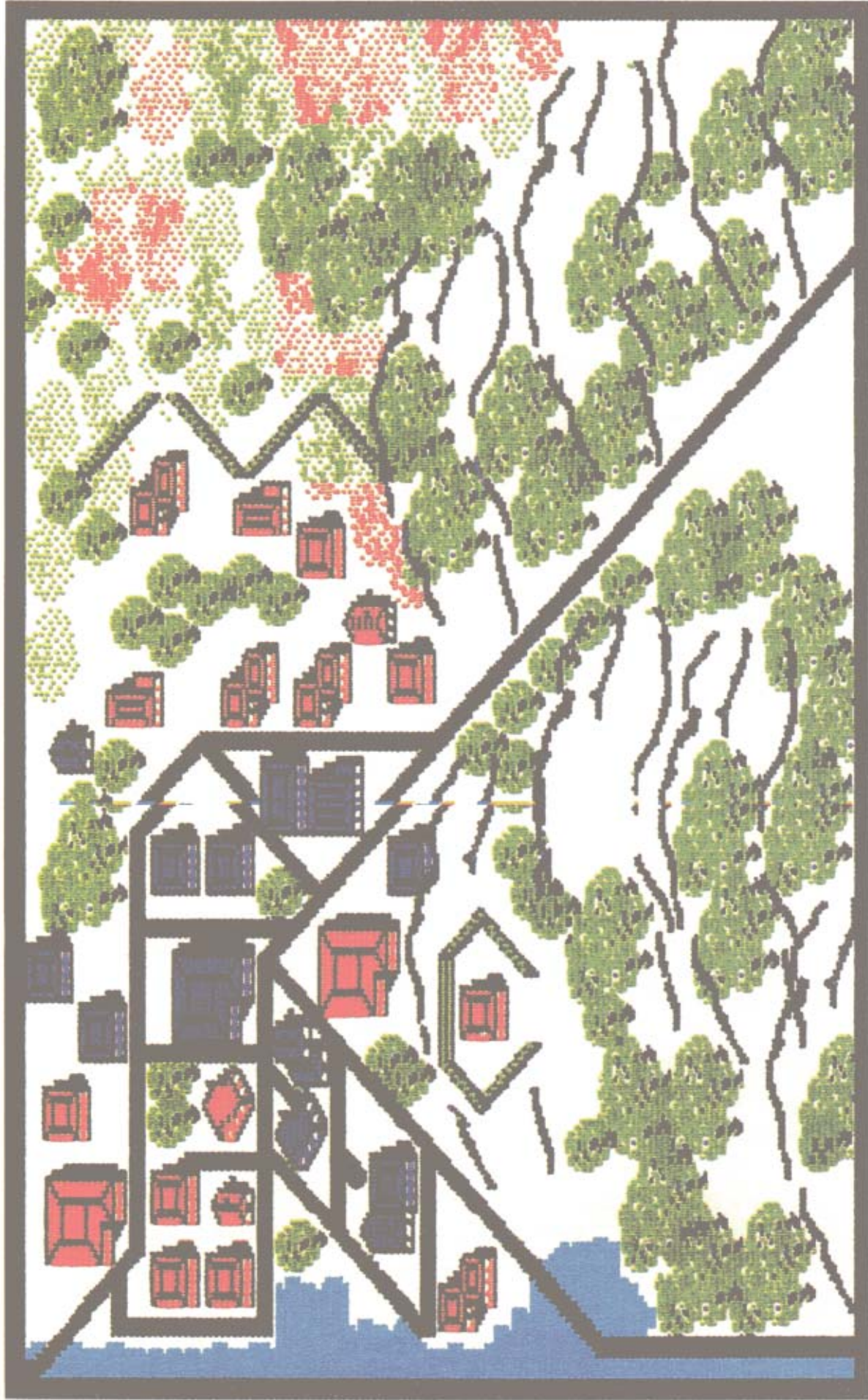
Key: Tanks are listed in the order they appear on the Extended Capability disk.

SP is the speed of the vehicle (Fast, Medium or Slow).

The AP, HE, HMG, MMG, R and SUB columns list the number of attacks a unit has for that weapon.

Crew is the number of men operating the unit.

Value is its cost for a green, seasoned and crack unit.



Judgement Scenario Map for *Under Fire Extended Capability Disk 1*. Permission granted to reproduce for Player's use only.
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JUDGEMENT

UNDER FIRE! IS EXPANDING

There's more in store for your UNDER FIRE! game. This is the first of at least three supplemental disks that open new ways to make UNDER FIRE! your kind of game. Each Extended Capability Disk fits easily into the UNDER FIRE! system, adding new units, maps, scenarios, and rules.

WHAT DOES THIS DISK HAVE?

1. Tanks. Lots of them. Over 65 types covering the period from 1941 to 1945. The chart below tells you exactly what each nation has. In addition, each country has three to four field guns, and some special items as well (like the Bren carrier for British units).

TANK & ASSAULT GUN ROSTER

GERMANY: Panther, Panzer III, Panzer IV, Tiger I, Tiger II, Lynx, Jagdpanther, Hummel, STG-III, Marder, Nashorn, Brumbar, Hetzer, and Wespe.

GREAT BRITAIN: Sherman, Achilles, Matilda II, Grant, Mark IV, Crusader, Churchill II, Churchill VII, Comet, Cromwell, Firefly, Valentine VIII, Churchill Crocodile VII (with flamethrower).

ITALY: Autoblinda 41 armored car, Carro Armato L6/M40, M11/39, M13/40, M14/41, M15/42, Semovente M40, M41 Howitzer, M41/75mm, M41/90mm.

JAPAN: Type 97 Shinhoto Chi-Ha, Type 97 Chi-Ha, Type 98-A Ke-Ni, Type 95 Ha-Go, Type 89B Chi-Ro Otsu, Type 1 Honi, Type 38 Howitzer.

SOVIET UNION: T34/76c, KV-85, BT-7, JS-II, JS-III, T-26, T34/85, T-70, SU-76, SU-152, SU-85, SU-100, SU-122.

UNITED STATES: Sherman, M-10, Stuart, Grant, M4A3 Howitzer, Cobra, Chaffee, Hellcat, Pershing, T-26E4, Priest, M12.

2. Armies. In addition to German, Russian and American units, this disk also has vehicles and men for Great Britain, Italy and Japan. With Under Fire's unique construction set, this disk allows you to game out almost every possible form of conflict during World War II, including hypothetical firefights.

The rule book contains historical background on each tank and assault gun, including vehicle data such as main gun size, armor thickness and speed.

3. Scenarios and Maps. Two new maps are included, and six scenarios designed especially for them. With Under Fire's flexibility, these scenarios can be played with any nation, in both two-player and solitaire versions.

UNDER FIRE!
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for your Apple® II
home computer with 64K.

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INSIDE THE RULEBOOK

This rulebook contains all the information needed to play with *Extended Capability Disk #2: The Campaign Disk*. It consists of three sections:

- The Campaign Tutorial: a fast-and-easy way to get into using the supplementary disk. Instead of stopping at each menu and carefully explaining what each option means, it will lead you into creating a team, saving them to disk, and setting up a scenario.
- The Rulebook: a complete guide explaining how to play *Under Fire!* with this new system. Because the process of creating a team requires looping through menus several times, the structure of this rulebook is different than in past products. All the menus are listed along with a description of the options found in each. Players are advised to carefully read the rulebook.
- The Armies: a complete Table of Organization and Equipment (TO&E) listing all of the units available for play. Armies from the original *Under Fire!* disk are listed along with those found in *Extended Capability Disk #1*. Players should find this a useful reference when creating their own armies for play.

Special Note: the Campaign disk consists of two disks. The front side (the side with the label) is called the Set-Up side. On the back is the Play side. Keep this in mind while reading the rules and playing the game, for nowhere else is this mentioned.

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microcomputer games DIVISION
The Avalon Hill Game Company
A MONARCH AVALON, INC. COMPANY

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PRINTED IN THE UNITED STATES OF AMERICA



CAMPAIGN TUTORIAL

This tutorial is intended to take you through the game for the first time. Its purpose is instructive; it's not teaching the perfect way to create your army, but it'll help you through the process until you get around to reading the rulebook. We believe that following the tutorial is a good way of introducing the player to the game. Once through it, subsequent playings become much easier.

This tutorial was written to be as complete as possible, so begin by booting the game disk. When the title screen appears, initialize a blank disk. This will be used to save the team you'll create. During the initial menu choose the default options (the ones already on the screen) except have the COMPUTER control team 2 at skill level 1. Answer YES to the PLAY WITH EXTENDED CAPABILITY DISK option and put the Set-Up side of the Campaign disk in the drive. A minute will pass until the next menu appears.

CREATE TEAMS / REVIEW TEAMS / PLAY

Choose CREATE TEAMS and answer the next prompt with DO NOT HAVE EXTENDED UNITS DISK #1.

NATION / PERIOD / POINTS / SELECT / DONE

The Order of Battle from the United States for the 1941-43 period has already been loaded, but let's use the Russian army by selecting NATION, then RUSSIA. When the above menu appears again, toggle to SELECT and choose it.

INFANTRY / TANKS / SP/GUNS / AT/GUNS / SUPPORT

The team we're creating is not going to be very large, consisting of an infantry company, two tank platoons, and a support squad. Select INFANTRY and choose the GUARDS COMPANY. Accept it, then toggle to the DONE option.

SELECT / SAVE / CHANGE / CANCEL

Choose SELECT.

INFANTRY / TANKS / SP/GUNS / AT/GUNS / SUPPORT

Toggle over to SP/GUNS. Choose the platoon of SU/152s, accept it, then choose DONE.

SELECT / SAVE / CHANGE / CANCEL

We've decided that we didn't want the SU/152s, so choose CHANGE, toggle down to the tank platoon, and press the fire button. Then select SELECT.

INFANTRY / TANKS / SP/GUNS / AT/GUNS / SUPPORT

Choose TANKS, then a platoon of T34/76c and a platoon of KV/85s. Move through the DONE and SELECT options, then toggle over to the SUPPORT option.

From this menu, select the MG/GUN option and add that squad to your roster. Choose DONE, then SAVE. Put the initialized save disk in when prompted, and when ENTER UNITS NAME appears, type 1ST.GUARDS.DIVISION. Insert periods between the words as the space bar cannot work here. Use the left arrow key to backspace over errors.

Answer NO to the print option, and the team is saved to disk. Put in the Campaign Set-Up disk when asked.

NATION / PERIOD / POINTS / SELECT / DONE

Choose DONE, then PLAY. Since it's a solitaire game, the SELECT OPPONENT prompt will appear. Choose GERMANY.

REMOVE CAMPAIGN SETUP DISK / INSTALL SCENARIOS DISK

This is a tricky command when encountered the first time. "Scenarios Disk" refers to either Original Units & Scenarios disk, or the Extended Capability #1 disk. Do NOT insert a scenario disk of your own making, or the Campaign Play side.

With the Original Units and Scenarios disk, choose a scenario much like you've always done. Choose the following options: DEMONS MAZE, HOUSE TO HOUSE, SEARCH AND DESTROY ENEMY, ATTACK OBJECTIVE AREA. Reinsert the Campaign Set-Up disk when prompted. We're now ready to select the units that will make up your team.

TEAM #1 SELECT UNITS

The "Suggested Forces" shows the maximum number of infantry, armor and other vehicles that you can select. It changes with each playing. Load in the Russian team you just created. From the menu bar beginning with ALL / INF / ENG / PAR, select INF. This shows all available infantry units, including leaders. The first unit appears, a green rifle squad. Another menu appears on the right side of the screen, with the word CONTINUE shown as the default option. Pressing the fire button at this time displays the next infantry squad. They may all look the same now, but they will acquire an individual identity after several playings.

For now, choose the NAME UNIT option and give the first squad the name of KIROV. You can change it later if you like. Then, choose the SELECT option, and put Cpl. Kirov's squad in the FRONT LINE. Select CONTINUE to move on to the next unit. (You may notice that when the squad was selected, the box turned black and Kirov's name disappeared. Units chosen for the scenario are always displayed this way, and Kirov's name will reappear.)

Do the same thing to subsequent infantry units, until the number chosen matches the number of infantry units in the "Suggested Forces" box.

Choose more infantry units, but put them on RESERVE by selecting that option instead of FRONT LINE. Ignore the INTEGRATE option. When you have assigned all the infantry units you want, select the ABORT option. This gets you out of that menu and back to the previous menu. Despite the name, it does not erase the choices you've made thus far.

Choose the TNK option and do the same things to the tanks that you did to the infantry, picking and choosing them for front line or reserve duty. When you are finished, ABORT the process, then select DONE. Press the fire button to the END UNIT SELECTION question.

The next step is to take those selected units – front line and reserve – and assign a unit number to each – RU#1, RU#2, and RU#3. The default option is ALL, so choose that

and Cpl. Kirov's infantry squad should appear. Select COMMIT UNIT for each one that appears. Note that for some, the word RESERVE will appear below the word MEN. It is possible to rearrange the order, putting reserve units at the end for example, but this is a tutorial so don't bother with that now. The process will end when the PRINT ORDER OF BATTLE prompt appears. That means that all of your units have been assigned. Select NO and the disk drive will get to work, taking units off the disk and loading them into the computer. Put in the Campaign Set-Up disk and the Play disk when prompted. *Under Fire!* moves into more familiar territory with the Pre-Set Units phase, and you're on your way!

The Campaign disk is designed to add new rules for the player and greater realism to the *Under Fire!* game. Units can move from scenario to scenario, take casualties, be rebuilt, and gain experience and become better fighting men. The longer the unit lasts – as long as there are veterans who survived the battle – the stronger it becomes.

This means that you, as commander, must learn to husband your resources, and commit troops only when you feel some gain is possible. Retreating from battle to save your men becomes a viable tactic. It's now possible to turn defeat into a victory with a successful retreat. Nevermore should you throw in all your troops simply because it's the last turn and you have nothing to lose. Now you do.

With the added complexity also comes an added hazard; the nuke factor. To play the Campaign game, special armies are organized that may contain over a hundred units, although the usual number participate in a scenario. When they are sent into battle, they are removed from the disk and returned only at the end of the game. If during the game the computer loses power, if you shut off the machine, or if the Control and Reset keys are pressed, those units (along with their accumulated experience) are lost forever. They can be replaced with green troops, but the original men will be somewhere in the ether, perhaps eternally fighting that battle. Take care of your men, and they'll take care of you.

How To Learn The Game

This rulebook is written in a slightly different manner than previous *Under Fire!* products. In them, we described how to play the game like links in a chain. That is, that first comes A, then B, then C, and so on. But the structure of the Campaign disk is more flexible, allowing for backtracking through previous menus. Some menus are used two or three times with minor changes.

So we've broken down the rulebook into menus, with the options described underneath it. If an option leads to another menu, we identify it. So, instead of reading the rulebook from cover to cover, try reading it from menu to menu. We've also included a tutorial that takes you through the building and saving of a team. How you learn the intricacies of the Campaign game is your business. But we strongly recommend taking your time. Create a team with only a few units, and experiment with all of the functions before diving in and designing your own military units.

One more thing. At the end of the game, when the Victory screen appears, the option called DONE was added. When you are through with the game, choosing that will update your units disk with the status of your team; those that found glory in defeating the enemy, and those that did not survive. It is essential that you do this, because it is the only way that the units can save their new-found experience to disk. Note that this only saves and updates existing units; you must still use the REBUILD TEAM option to resupply each unit.

INTRODUCTION

Keyboard/Joystick Commands

Like previous rulebooks, we describe using the menus as if we were using a joystick. The keyboard can be used in place of the joystick; see "Using the Keyboard and Joystick" on page 5 of the *Under Fire!* rulebook for more information.

Integrating Scenarios

Any scenario may be chosen from the OU/S or EC#1 disk. In a design your own scenario, Campaign teams must be used for both teams. In a pre-set scenario, with the computer player option, then the computer may only use units from the scenario disk. However, the human player may control a team of any composition and/or nationality.

Example: you want to play solitaire the Powder Keg scenario from the OU/S disk. Any team that you created – no matter what nationality – can play. The computer opponent, on the other hand, can control only the US, German, or Russian forces.

Example: in setting up a game, you do not load the EC#1 disk. When it comes time to play a scenario, you decide to play the Ram's Horn scenario from the EC#1 disk. Not only can the scenario be played, but it's possible to give yourself a team created from the EC#1 disk, while the computer player must make do with the units available only in the main game.

Saving Games

We strongly recommend that before playing with the Campaign disk, that you initialize two disks with the Game master disk. The first time a disk is used dictates how it will be used in the future. Therefore, it is not possible to save a game in progress on a disk which has teams created with the Campaign disk, nor is it possible to save a Campaign game to a disk which has a saved non-Campaign game.

★ ★ ★ ★

Boot Camp is over; it's time for the real thing.

The second disk in the Extended Capability series permits the construction of company and battalion-level forces using the American, German, and Soviet units from the original units disk, or the units from the first EC disk.

The EC disk is actually two disks, one written on the

back of the other. The front side of the disk contains the Set-Up program needed to construct and preserve your armies. The second side contains the expanded *Under Fire!*

game. Either side of the disk is to be used only when prompted: DO NOT BOOT EITHER SIDE OF THE DISK!

SPECIAL FEATURES

A CAMPAIGN QUICKIE

Want to play a standard scenario with the surrender and retreat rules, but without diving into those carefully constructed teams? It's possible to play a standard game of *Under Fire!* using only the Play side of the Campaign disk. To do that, boot up the Game Master disk as you normally do, and create the game. When the Pre-Set Units Phase appears – when the Situation Map is at top, and the location of starting units can be changed before the first turn begins – take out the Game Master disk and insert the game side of the Campaign disk. Not only does this allow you to use the surrender and retreat rules, but it permits the regular *Under Fire!* game to work faster (see below).

UNDER FIRE! IN 128K

If your computer is a IIc, or a IIe with an Apple Extended 80-column card, the Campaign disk can take advantage of the extra 64K to make *Under Fire!* go

faster.

When you answer no to the prompts DO YOU WANT TO SAVE THIS GAME? and DO YOU WANT TO END THIS GAME?, the game checks the memory configuration of the Apple II and loads the combat files into the extra 64K. As a result, *Under Fire!* plays much faster!

If a saved game is being played, a turn is played before the game checks for the extra memory.

The Avalon Hill Game Company cannot guarantee that this feature works with anything other than the IIc, or a IIe with Apple's Extended 80-column card.

UNDER FIRE! IN 64K

Another improvement has been in speeding up the execution phase without sacrificing the information given to the players. Instead of reporting the units sighted each period automatically, the game will jump anywhere from one to six periods at a time, making the early and later turns pass quicker.

MENU #0 : LOADING THE GAME

To save armies created with the Campaign disk, format a disk using the Game Master disk (not the Mapmaker). Do not save games to this disk, save only teams. Up to eight teams may be saved per disk.

Do NOT put a write-protect tab on the Set-Up side of the disk.

Boot the original Game Master disk as usual and select

the game options, even if you want to set up armies only. When the PLAY WITH EXTENDED CAPABILITY DISK prompt appears, answer YES and (when prompted to), put the Campaign disk into the drive with the Set-Up side facing up. Press the fire button.

It takes about 50 seconds for this section to load before Menu #1 appears.

MENU #1 CREATE TEAMS REVIEW TEAMS PLAY

CREATE TEAMS: when choosing this the first time after booting the game, a prompt asks if the Extended Capability disk #1 is used. Since this disk not only adds three new countries (Italy, Japan and England), but expands on the tanks and vehicles available to the original countries, we recommend purchasing it. See Menu #2.

REVIEW TEAMS: this permits reviewing or rebuilding

teams that already have been created and/or played. See Menu #5.

PLAY: this is where scenario construction begins. Insert the disk that contains a saved team into the drive when prompted. See Menu #6.

If the Create Teams option was not selected, it asks if the Extended Capability disk #1 is used.

MENU #2 NATION PERIOD POINTS SELECT DONE

Purpose: this menu sets up the general parameters under which a team is created.

NATION: the three countries in the original game may be used, or all six if the EU #1 disk is used.

PERIOD: each team may be created from the 1941-1943 or 1943-1945 era. The first period has only those vehicles that appeared up to the second quarter of '43, while the lat-

ter has available all tanks and support guns, as well as bazookas and panzerfausts.

POINTS: any value between 100 and 9999 may be entered. To have an unlimited selection, enter a zero (0).

SELECT: see Menu #3.

DONE: see Menu #1.

MENU #3 INFANTRY TANKS SP GUNS AT GUNS SUPPORT

Purpose: this menu is used to select specific groups of units. The groups are: infantry, tanks, support guns, anti-tanks guns, and support units. The last category contains a variety of special units such as machine gun squads, leaders, artillery, transport and ammo dumps. As each category is selected, a list of available units appears. In some cases, a submenu describing exactly what that unit contains

appears. (E.G., the United States has four infantry companies available. Selecting one causes the makeup of it to appear, with the option to reject or accept it.)

See the Table of Organization and Equipment for a complete list of what is available for each country.

Whenever you leave a particular category, Menu #4 appears.

MENU #4 SELECT SAVE CHANGE CANCEL

SELECT: see Menu #3.

SAVE: the selection process ends, allowing the team to be saved to disk. First, however, the PRINT GROUPS SELECTED option appears. This allows you to send a list of your units to the printer. If YES is selected, then INDICATE PRINTER SLOT appears. Toggle through the available slot numbers and select the one in which is set your printer card. Selecting 0 aborts the process and returns you to the previous prompt.

After the print option has been chosen, the team may be saved to disk. Type in a name of up to 20 characters long,

placing periods in place of spaces. If no name is entered, the game cancels the order, just like the command of the same name below. Once a name is chosen, it cannot be changed, nor can the composition of a team be altered. If the team is saved, see Menu #2.

CHANGE: a unit must be deleted from the team. Note that you cannot leave this option unless a unit is removed from the team.

CANCEL: the selection process ends and the team is cleared of units. See Menu #2.

MENU #5 REVIEW UNITS REBUILD UNITS DONE

REVIEW UNITS: follow the prompts to load a team from disk. The screen changes to show the quick review section in the center. This indicates how many units of each type are on the team. Note that under artillery, the three numbers indicate the amount of light, medium and heavy artillery available.

Also, menu #6 appears, and choosing from it displays all the units of that type, as well as Menu #7.

When the team is off fighting a battle, all values are set to zero whether or not all units of a single category were sent into battle. *Example: of the team named 1st Soviet Guards, consisting of nine infantry units, three were sent into battle. This battle has been saved. If you review the team, it shows zero infantry units.*

REBUILD UNITS: when a unit suffers casualties in battle, its depleted strength is saved. If the unit was eliminated, its strength is zero. This command enables you to reinforce units, repair tanks and vehicles, and resupply the ammo dump. Rebuilding a unit does not affect its combat experience. If this option is chosen while the unit is still in combat (e.g., while the scenario was saved on disk), the rebuilt unit will consist of green troops. Saving the combat unit thereafter replaces the green troops.

Example: Unit #1, a crack Tiger II, is in the field while some paper pusher decides to rebuild the team. Unit #1 is replaced with a Tiger and a green crew. That unit is then sent into battle. When the crack unit returns, it is restored to its rightful place. Now, if the green unit returns thereafter, the crack unit vanishes. The moral of the story: never rebuild a team while some of its units are still in action.

As part of the rebuilding process, two columns will appear showing those units killed or missing in action. Units listed as missing in action were either nuked or not saved to disk at the end of the scenario. They could also be in a scenario that was saved, or someone forgot to update the campaign disk. Units listed as killed in action are known to have been lost in combat.

There are also units who may need rebuilding who will not appear on the chart. *Example, in one game, a German PZR-III destroyed two British tanks and flushed out a machine-gun nest. The tank was destroyed in an infantry attack, but the crew survived. At the end of the game, the crew received a crack rating for its heroic performance, but could not get a new tank until the team went through the rebuilding process. When the team was rebuilt, it received another PZR-III and retained its crack rating.*

MENU #6 ALL INF ENG PAR TNK SPG TRN GUN MRT DONE

MENU #7 AUTOMATIC REVERSE CONTINUE ABORT NAME UNIT

Menu #6 and #7 are combined here because they are used in tandem. Menu #6 selects specific unit types to display. Note that #6 also appears with other menus.

ALL: all units on the team can be accessed, beginning with the upper left hand corner of the quick review section and moving down.

DONE: ends the procedure. If information about a unit was changed (such as the name of the commander), this is written back to the unit disk automatically. See Menu #7A.

AUTOMATIC: this function displays each unit for three

seconds. Pressing the fire button cancels the function, but may be resumed by pressing it again. If the joystick is toggled, the function is also cancelled.

REVERSE: this reverses the direction in which units are being displayed.

CONTINUE: this function displays the next unit.

ABORT: returns to menu #6. Despite the name, this does not cancel the setup process.

NAME UNIT: the name of the unit leader may be given or changed. Press the left arrow key to delete a letter, and the Return key to enter the name.

MENU #7A AUTOMATIC REVERSE CONTINUE ABORT NAME UNIT SELECT REVIEW

Except for the last two options, this menu is the same as #7, above. At this point, you have chosen the first team, and it is time to decide which units from it are placed in the front line, or held in reserve.

Menus #7A and #7B perform this function in two stages. First, select all of the units to participate in the scenario, either as front line, or reserve units. This is done using #7A by itself.

In the second stage, menu #7B is used to assign the identification number (i.e., US#1, US#2, US#3) to each unit.

There is no rule about assigning numbers to reserve and front line units. Remember that during the game, sighted units have their identification number printed to the screen, so you may wish to keep the exact number of units committed to the scenario a secret by assigning low numbers to committed units, higher numbers to reserve units.

Once a team's units have been assigned a number, it can be sent to the printer by answering YES to the prompt PRINT THE ORDER OF BATTLE.

Use menu #6 to access a specific unit type, then #7A to manipulate it.

SELECT: the unit displayed in the lower left hand corner of the screen has been chosen. This status is reflected by printing the unit information in white on a black background. If you had just named the unit, that name will drop out. Don't worry; the game still remembers it. The following submenu appears:

FRONT LINE: this places the unit on the map.

RESERVE: the unit can be placed on the map anytime after turn 4.

See Reserve in the New Rules section below for more information.

INTEGRATE: if a leader is selected, this option assigns him to an infantry unit. A new submenu appears: **SELECT / CONTINUE / CANCEL**. The game displays each eligible unit one at a time. Use **SELECT** to make the assignment, **CONTINUE** to move on to the next eligible unit, and **CANCEL** to return to the previous menu. Rejecting all eligible units also returns to the previous menu.

MENU #7B AUTOMATIC REVERSE CONTINUE ABORT COMMIT UNIT

Purpose: final arrangements are made prior to entering the main game. Units are assigned identification numbers, infantry units can be loaded on transports, supply trucks are loaded and other questions answered.

COMMIT UNIT: assigns a unit to the number appearing in the box (i.e., US#1, GE#3, IT#4). The following tasks can also be performed.

1. Loading infantry units onto transports. When an infantry unit is committed, the game searches through the roster of previously committed units. If a transport is among them, it offers to load the men on it. Since it offers all previously committed transport units in order, pick and choose among them. But, the game lists each transport only once for each unit.

2. Assigning bazookas and panzerfausts to infantry. If such weapons were purchased, they are offered.

MENU #8 HQ INTELLIGENCE REPORTS

This is not a menu, but a brief report of what Intelligence Analysts say is in the area, and its recommendations of how many infantry and tanks units to commit. If used properly, this creates a balanced scenario. In solitaire games, or two-player games using a pre-set scenario, the report gives an idea of what your opponent selected, although there is a small chance that the information is wrong. While you can select any number of front line units, you may not have more than the combined number of front line and reserve

forces. That is, if the intelligence report suggests 4 infantry units in the front line and 6 in reserve, you can commit any combination of infantry, but the total cannot exceed 10 infantry units. The same rule applies to tank units.

Transport units are counted separately from the tank/infantry total, except when you select more transports than suggested. In that case, they are charged against the tank/infantry total.

Once the leader is integrated into a unit, his name appears in command of the unit, and another man is added to the unit's standard configuration. *Example: adding a leader to a Soviet infantry unit increases the number of men listed to 13, and to 11 in American and German units.*

See Leaders in the New Rules section below for the effects of integration.

REVIEW: this displays all of the selected units from both reserve and front line sections. Note that the location of the cursor on Menu #6 determines what appears (i.e., all selected infantry units appears when the cursor is on INF, all engineers if it's on ENG, etc.

During the review procedure, the word **REVIEW** is shown in a black box, and parts of Menu #7B can still be used. To get out of the command, place the cursor over the word **REVIEW** and press the fire button. Because both the word and the cursor are shown as black boxes, the only way to tell when the cursor is over Review is when it is not over any of the other options.

3. Assigning a job to a transport. When one is committed, it can be given the job of transporting men or supply. Choose from the **TRANSPORT / SUPPLY** menu that appears. Trucks assigned to supply duty are then loaded from the dump. A black box appears in the Supply Dump section of the screen. Moving it to a type and pressing the fire button loads one unit of supply onto the truck. The game automatically sets a limit on how much of each supply type a vehicle can carry. See the TO&E section below for the list. Selecting the Done prompt at the lower right corner of the dump ends the loading process. The transport is now committed to combat. If no supply was loaded, the **TRANSPORT / SUPPLY** menu reappears.

4. Assigning artillery. If a leader is committed when artillery is available, a menu offering the choice of artillery appears.

NEW RULES

Integrated leaders are detached from their units at the end of the scenario.

Reserve

Reserve units can be committed to combat after turn 4. Before then, they do not appear anywhere, even in the Unit

Leaders

Individual leaders may be assigned to units using Menu #7A and its submenus. While the leader can direct fire and perform the same functions as in the main game, he no longer becomes a target for enemy fire. He can be killed only if the unit is destroyed.

Organization Phase. At the end of turn 4, they will appear there and be identified by the word Reserve in place of the word Command. Two orders are possible: No Orders and Commit. Both are self-explanatory. The game determines where the committed unit appears.

Retreat

A team may be ordered to retreat under the following conditions:

1. Its general orders cannot be Break-Out or Delay.
2. Only the first team ordered to retreat can do so.

To retreat, enter the Unit Organization Phase and answer Yes to the retreat prompt. The game automatically moves the objective area to the side of the board that team is ordered to retreat through. (The selection is not made at random, but more than that we cannot tell you to prevent taking advantage of that knowledge). The retreating side's general orders are changed to Break-Out, and all rules applying to it applies. The opposing team may choose to prevent the break-out, or it may not. In a solo game, the computer player may or may not decide to pursue.

Each unit that successfully retreats gains experience.

In the spirit of the game, we suggest not informing your opponent that you are retreating. He can learn of your actions when the Situation Map shows the new objective area.

Surrender

Soft units – infantry, gun crews or tank crews – may surrender or be taken prisoner.

A player may order a friendly unit to surrender in the Unit Organization phase. When all weapons belonging to a unit have been dropped, the word SURRENDER appears. Pressing the fire button orders the unit to surrender; toggling the joystick allows the unit to continue play.

A unit may be captured under the following conditions:

1. the unit must be broken;
2. the unit will only surrender to a larger enemy soft unit;
3. the enemy unit must be in the same or adjacent position as the surrendering unit. In a situation like this, it is possible for an infantry squad to move into the same position as a tank, destroy it in a combat phase, and capture the crew as they bail-out.

Surrender in *Under Fire!* is mostly beyond the player's control. Even if there are several unbroken units around a unit, it may still surrender if a larger enemy unit occupies its position.

When a unit surrenders, the computer takes control. Guards are provided by subtracting one man from the capturing unit for every three surrendering. The capturing unit will have a LOS to that unit (as if it is friendly). The original team only sees it if a friendly unbroken unit can see it.

When a unit or leader surrenders or is captured, there is a chance that the enemy can discover the location of other friendly units. The capturing player will see the Situation Map at the time of surrender, with all friendly units and some or all enemy units displayed. There is a greater chance that capturing a leader will reveal information than a captured unit.

Units may be freed in two ways. An unbroken friendly unit must occupy the same position during any combat phase, or the team controls the field at the end of the game. If units are freed, the guards are considered lost. If the capturing side wins the game, the guards are returned to their unit and the captured units are lost.

Prisoners may be fired upon by all units. In either case, if casualties are taken, the side that had surrendered before will never do so again, and members of the other team who surrender will be executed. With this in mind, it is important to move prisoners to a safe area, and any commander who fires on his own men should be ashamed of himself.

Supply Dumps

In the game, trucks were loaded from an unlimited supply dump. In the Campaign game, the amount of supply is limited. The supply dump is off the map and cannot be destroyed.

The Rebuild Unit option restocks supply dumps depleted in a previous game.

Vehicle Medium Machineguns

A vehicle may use its medium machinegun when it is in the Scouting or Standard movement mode. In the latter case, the game considers that vehicle to be moving in Standard/Open mode (as opposed to Standard/Close mode). The unit closes automatically when its MMG is not used in a subsequent combat phase.

Victory

Reserve units that were not committed to combat are stacked in the center of the map. The Done option is added to load the units that survived the scenario back to the Campaign disk.

Table Of Organization & Equipment

The following charts show the units available to each country, including those found in the first Extended Capability disk. Bazookas and panzerfausts can be purchased only after 1943. Tanks and support guns appearing next to and below the (1943-1945) designation are available only during that period.

Crewed weapons usually consist of five men armed with rifles. Abbreviations: LMG (light machinegun), MMG (medium machinegun), HMG (heavy machinegun), SMG (submachine gun).

UNITED STATES

INFANTRY (600 points)

- 3 Platoons (9 Squads)
- 1 Weapons Platoon
- 3 Bazookas (1943-1945)

- 10-Man Squads
- 8 Rifles
- 2 SMGs
- 1 LMG
- 12 Hand Grenades

- Weapons Platoon
- 1 HMG Crew
- 2 MMG Crews
- 2 60mm Mortar Crews

MARINE INFANTRY (800 points)

3 Platoons (9 Squads)	
3 HMG Crews	
3 60mm Mortar Crews	
	12-Man Squad
	8 Rifles
	2 SMGs
	2 LMGs
	12 Hand Grenades

ARMORED INFANTRY (1000 points)

3 Platoons (9 Squads)	
15 Halftracks	
3 Bazookas (1943-1945)	
3 75/L53 Towed Guns	
2 60mm Mortar Crews	
1 HMG	
	10-Man Squad
	8 Rifles
	2 SMGs
	1 LMG
	12 Hand Grenades

PARACHUTE INFANTRY (1200 points)

3 Parachute Platoons (9 Squads)	
2 MMG Crews	
1 81mm Mortar Crew	
3 Bazookas (1943-1945)	
	8-Man Squad
	8 SMGs
	2 LMGs

TANKS

5 Shermans (500 points)
5 M10s (600 points)
5 Grants (400 points)
5 Stuarts (400 points)
5 Hellcats (650 points) (1943-1945)
5 Cobras (700 points)
5 M3A4 Hows (600 points)
5 Chaffees (500 points)
4 Pershings (700 points)
4 Super Pershings (800 points)

SUPPORT GUNS

3 Priests (350 points)
3 M/12s (450 points)
3 M3 w/75mm Hows (200 points)
3 M3 w/81mm Mortars (200 points)

ANTI-TANK GUNS

3 37/L57 w/3 Trucks (200 points)
3 75/L53 w/3 Trucks (250 points)
3 76/L55 w/3 Trucks (250 points)
2 90mm w/2 Trucks (300 points)

GERMANY**INFANTRY (600 points)**

3 Platoons (9 Squads)	
2 HMG Crews	
	10-Man Squads
	8 Rifles
	2 SMGs
	2 LMGs
	8 Hand Grenades

MOTORIZED PANZERGRENADIER (1200 points)

3 Platoons (9 Squads)	
1 Heavy Weapon Platoon	
9 Trucks	
12 Panzerfausts	
	10-Man Squad
	8 Rifles
	2 SMGs
	2 LMGs
	8 Hand Grenades
Heavy Weapon Platoon	
2 HMG Crews	
2 MMG Crews	
2 81mm Mortar Crews	

ARMORED PANZERGRENADIER (1500 points)

3 Platoons (9 Squads)	
1 Heavy Weapon Platoon	
9 Halftracks	
2 SD251 w/120mm Mortars	
2 Wespes	
	10-Man Squad
	8 Rifles
	2 SMGs
	2 LMGs
	8 Hand Grenades
Heavy Weapon Squad	
8 Rifles	
2 SMGs	
1 HMG	

ANTI-TANK GUNS

2 88/L56 w/2 Trucks (300 points)
3 75/L46 w/3 Trucks (300 points)

VOLKSGRENADIER (600 points)

3 Squads	
2 SMG Platoons (6 Squads)	
	10-Man Squads
	8 Rifles
	2 SMGs
	2 LMGs
	8 Hand Grenades
10-Man SMG Squad	
10 SMGs	
2 LMGs	

TANKS

5 PZK IVs (600 points)
5 Panthers (800 points)
5 PZK IIIs (500 points)
4 Tiger Is (800 points)
4 Tiger IIs (900 points) (1943-1945)
5 Lynxes (500 points)

SUPPORT GUNS

4 STG IIIs (400 points)
4 Marders (400 points)
4 Nashorns (500 points)
2 SD251 w/75mm Hows (150 points)
2 SD251 w/120mm Hows (150 points)
4 Jag/Pavs (700 points) (1943-1945)
4 Hummels (500 points)
4 Hetzers (500 points)
4 Brummbars (600 points)
4 Wespes (500 points)

3 50/L60 w/3 Trucks (250 points)
3 37/L45 w/3 Trucks (200 points)

RUSSIA

INFANTRY (600 points)

3 Platoons (12 Squads)	12-Man Squads
1 HMG Crew	10 Rifles
2 60mm Mortar Crews	2 SMGs
	1 LMG

3 T-26s (300 points)
3 T-70s (300 points)
3 T34-85s (500 points) (1943-1945)
3 JS-IIs (700 points)
3 JS-IIIs (900 points)

GUARDS COMPANY (1000 points)

3 Platoons (12 Squads)	12-Man Squad
16 Halftracks	10 Rifles
Heavy Platoon (4 Squads)	2 SMGs
3 HMG Squads	1 LMG
1 82mm Mortar Squad	

SUPPORT GUNS

3 SU-76s (250 points)
3 SU-152s (450 points)
3 SU-85s (400 points) (1943-1945)
3 SU-100s (500 points)
3 SU-122s (400 points)

TANKS

3 T34-76Cs (350 points)
3 KV-85s (500 points)
3 BT-7s (250 points)

ANTI-TANK GUNS

3 45/L45 w/3 Trucks (200 points)
3 76/L41 w/3 Trucks (250 points)
3 76/L54 w/3 Trucks (300 points)
2 85mm w/2 Trucks (300 points)

ENGLAND

INFANTRY (600 points)

3 Platoons (9 Squads)	10-Man Squads
3 60mm Mortar Squads	8 Rifles
3 Bazookas (1943-1945)	2 SMGs
	1 LMG
	8 Hand Grenades

5 Matilda IIs (250 points)
5 Shermans (400 points)
5 A13/MkIVs (250 points)
5 Crusader Mk IIIs (300 points)
5 Churchill IIs (300 points)
4 Achilles (550 points) (1943-1945)
4 Churchill VIIs (550 points)
4 Comets (600 points)
4 Cromwells (550 points)
4 Fireflies (700 points)
4 Valentine VIIIs (400 points)
4 Crocodiles (600 points)

ARMORED INFANTRY (800 points)

3 Platoons (9 Squads)	10-Man Squad
13 Bren Carriers	8 Rifles
3 Bazookas (1943-1945)	2 SMGs
3 6 pdrs. Towed AT Guns	1 LMG
3 60mm Mortar Crews	8 Hand Grenades
2 HMG Crews	

SUPPORT GUNS

3 Priests (350 points)
3 M/12s (450 points)

PARATROOP INFANTRY (1000 points)

3 Paratroop Platoons (9 Squads)	8-Man Squad
2 MMG Crews	8 SMGs
1 81mm Mortar Crew	2 LMGs
3 Bazookas (1943-1945)	

ANTI-TANK GUNS

3 2 pdrs. w/3 Lorries (200 points)
3 6 pdrs. w/3 Lorries (250 points)
3 76mms w/3 Lorries (300 points)
2 17 pdrs. w/2 Lorries (300 points)

TANKS

5 Grants (300 points)

ITALY

INFANTRY (400 points)

3 Platoons (6 Squads)	10-Man Squads
1 Weapons Platoon	10 Rifles
	8 Hand Grenades
Weapons Platoon	
1 HMG Crew	
2 MMG Crews	
2 60mm Mortar Crews	

MOTORIZED INFANTRY COMPANY (1000 points)

3 Platoons (6 Squads)	10-Man Squad
6 Halftracks	10 Rifles
1 HMG Crew	8 Hand Grenades
2 MMG Crews	
1 81mm Mortar Crew	
4 L6/40 Tanks	

BLACK SHIRT COMPANY (700 points)

3 Platoons (6 Squads)	10-Man Squad
1 HMG Crew	8 Rifles 2 LMGs
1 81mm Mortar Crews	2 SMGs 8 Grenades

TANKS

4 M11/39s (300 points)
4 L6/40s (250 points)
4 M13/40s (300 points)
4 Autoblinda 41s (300 points)

- 4 M14/41s (400 points)
- 4 M15/42s (450 points)

SUPPORT GUNS

- 4 Sem. M40s (450 points)
- 3 M41/146mms (450 points)
- 4 M41/75mms (500 points)

- 3 M41/90mms (500 points)

ANTI-TANK GUNS

- 3 47/L32s w/3 Trucks (200 points)
- 3 75/L34s w/3 Trucks (300 points)
- 3 90/L53s w/3 Trucks (350 points)

JAPAN

INFANTRY (600 points)

- 3 Platoons (9 Squads)
- 4 50mm Mortar Crews

- 10-Man Squads
- 10 Rifles
- 1 LMG

TANKS

- 3 Shinhotos (300 points)
- 3 Type 97s (300 points)
- 3 Type 98As (250 points)
- 3 Type 95s (350 points)
- 4 Type 94s (450 points)

SUPPORT GUNS

- 4 T1/Honis (500 points)

HEAVY WEAPONS COMPANY (800 points)

- 3 Platoons (9 Squads)
- 9 Trucks

- 10-Man Squad
- 10 Rifles
- 1 LMG

- Weapons Platoons
- 2 HMG Squads
- 1 81mm Mortar Squad

-
- 4 Type 38s (600 points)

ANTI-TANK GUNS

- 3 37/L45s w/3 Trucks (200 points)
- 3 75/L38s w/3 Trucks (250 points)
- 3 105/L45s w/3 Trucks (300 points)

SUPPORT WEAPONS (ALL COUNTRIES)

TRANSPORT

- 12 Trucks (150 points)
- 12 Halftracks (300 points)

Germany, Russia: reduce number of trucks and halftracks by 3.
 British: substitute lorries for trucks and Bren carriers for Halftracks.
 Italy: substitute 6 trucks and halftracks for 12.
 Japan: only 9 trucks are available.

MORTARS

- 3 Squads (200 points)

- 10-Man Squad
- 8 Rifles
- 2 SMGs
- 1 81mm Mortar

Russia: add two men armed with rifles to squad.
 Italy and Japan: substitute rifles for submachine guns.

ARTILLERY

- Heavy Battery (600 points)
- Medium Battery (400 points)
- Light Battery (200 points)

ENGINEERS

- 1 Platoon (250 points)
- 10-Man Squad #2
- 8 Rifles
- 2 SMGs
- 1 Flame Thrower
- 12 Hand Grenades

- 10-Man Squad #1
- 8 Rifles
- 2 SMGs
- 2 Satchel Charges
- 12 Hand Grenades

- 10-Man Squad #3
- 8 Rifles
- 2 SMGs
- 2 Satchel Charges
- 8 Smoke Grenades

Germany, British and Japan: substitute 8 hand grenades for 12.
 Russia: substitute 12-man squads for 10 and 8 hand grenades for 12.
 Italy: substitute rifles for submachine guns.

LEADERS

- 3 Green Leaders (100 points)
- 2 Seasoned Leaders (100 points)
- 1 Crack Leader (100 points)

Russia and Italy: pay 100 points for only one Seasoned Leader, and 150 points for one Crack Leader.

HEAVY MACHINE GUN SQUAD

- 3 Squads (200 points)

- 10-Man Squad
- 8 Rifles
- 2 SMGs
- 1 HMG

Russia: add two men armed with rifles to squad.
 Italy and Japan: substitute rifles for submachine guns.

AMMO DUMP

The amount of supply a vehicle can carry is in parenthesis after each type.

- 60 LMG Ammo (28)
- 40 MMG Ammo (28)
- 40 HMG Ammo (28)
- 32 AP Shot (16)
- 48 HE Shot (16)
- 5 Flame Throwers (4)
- 40 Hand Grenades (28)
- 40 Smoke Grenades (28)
- 20 Rifle Grenades (20)
- 10 Satchel Charges (8)
- Bazooka/Panzerfaust (4)

US, Russia and British: add 6 Bazookas (1943-1945).
 Germany: add 10 Panzerfausts (1943-1945).

UNDER FIRE![®] IS EXPANDING

There's more in store for your UNDER FIRE! game. This is the second supplemental disk opening new ways to make UNDER FIRE! your kind of game. Each Extended Capability Disk fits easily into the UNDER FIRE! system, adding new units, maps, scenarios, and rules.

WHAT DOES THIS DISK HAVE?

- 1. Firepower.** The Campaign Disk allows you to build formations of 100 units or more. Take on the role of general and create your own armored formation. Start with an infantry company. Give it armored support, anti-tank squads, engineer or more infantry. Become the quartermaster and assign it trucks, halftracks, artillery, good leaders, poor leaders, even an ammo dump. Then, put on your general's cap and name it after yourself if you wish.
- 2. History.** Create your own with the Campaign Disk, because you can take that division into a series of scenarios. Staying within the 32-unit maximum of the UNDER FIRE! game, choose only those units that will participate. If they survive, they are restored to the company, possibly with higher morale as a result of their trial by fire. If they're destroyed, assign replacements. Build a new division around the cadre of surviving veterans.
- 3. Speed.** UNDER FIRE! moves faster than before, depending upon what computer you have. On a IIc with 128K (or IIe with Apple's Extended 80-column card), disk accessing is reduced as much as 90%. Even if you have a plain 64K Apple, movement is resolved faster than before.
- 4. More Features.** The Campaign game contains rules that integrate leaders into infantry units so your Crack Major becomes less of a target. Units can surrender and be captured. An entire side may be ordered to retreat and can turn a certain defeat into victory by getting off the map. Units can be held in reserve and released only when you need reinforcements. In short, more of what UNDER FIRE! fans have been demanding of the game that can do it all.

COMPANY ROSTER

(The following companies are available with the Campaign Disk)

GERMANY: infantry, motorized panzergrenadier, armored panzergrenadier and volksgrenadier companies.

SOVIET UNION: infantry and guards companies.

UNITED STATES: infantry, marine, armored and parachute companies.

(The following are available when the Campaign Disk is used with Extended Units Disk #1)

GREAT BRITAIN: infantry, armored infantry and paratroop infantry companies.

ITALY: infantry, black shirt and motorized companies.

JAPAN: infantry and heavy infantry companies.

WHAT ABOUT THE OTHER DISKS?

Look for these other Extended Capability Disks:

Extended Capability Disk #1: the UNDER FIRE! game is expanded with the addition of three new armies and a host of vehicles for the American, German and Russian armies.

UNDER FIRE!
Extended Capability Disk #2
for your Apple[®] II
home computer with 64K.

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