

UNIT MENU:

- (1-8) Move cursor.
- (0) View terrain only. All units are cleared from the screen so that the underlying terrain can be seen.
- (A) Go into All-Units mode. If the formation HQ is not the current unit, it will become the current unit. You will be able to issue certain orders to the whole formation.
- (B)** Bombard. The cursor location is the target square; the current unit is the spotter. Those units available to bombard and the administrative delay before firing starts will be listed.
- (C)@ Cancel orders. All movement and bombardment orders assigned to the current unit are cancelled.
- (D)*@ Debark passenger(s). If the current unit is a vehicle then it will unload all of its passengers; if the current unit is a passenger, then only it will unload.
- (E)* Embark passenger. When given to a vehicle, you will be asked for the formation and number of a unit to be loaded onto the vehicle.
- (F)*@ Change unit's facing. Use the directions of the movement compass.
- (G)** Rally. When an HQ unit is ordered to rally, it will attempt to halve the suppression value of all subordinate units within its rally radius. It costs one order to press the rally key, and one order for each unit rallied.
- (H) Find units HQ. The next superior headquarters unit becomes the current unit.
- (I)*** Inspect enemy units. All enemy units that can be seen by the current unit will be shown sequentially. The current unit can choose one of them as a target by pressing the T key when the desired enemy unit is accessed. It costs one order to designate a target.
- (J)@ Toggle computer control. Places a formation under computer control or removes it from that control if already under computer control.
- (K)* Infantry smoke. An infantry unit can be ordered to lay smoke in an adjacent square.
- (L) Locate. Moves the cursor over the current unit.
- (M)*@ Move unit. The unit will be ordered to move to the cursor location. An advance state will have to be chosen for it.
- (N) Next unit. The next unit in alphanumeric order will become the current unit.
- (O) Display units movement objective(s). Moves the cursor to the location of the movement objectives assigned to the unit. Its state will also be shown.
- (P) List units passengers. All units loaded aboard the current unit are listed.
- (R)*@ Range. The maximum firing range at which the current unit will automatically select targets can be changed.
- (S)*@ State. The state of the current unit can be changed.
- (T) Show units target.
- (U)* Infantry assault. The current infantry unit will assault the enemy at the cursor location.
- (V) View. All squares that the current unit can see will be inversed.
- (W) Weapons Page. The current units Weapons Page will be displayed.
- (X) Exit Unit Menu. Return to the Map Menu.
- (Y) Center screen on unit.
- (Z) Toggle maps. The map changes to whichever (strategic or tactical) is not in use.

Notes:

@ = Can be done in All-Units mode.

* = Costs an order.

** = May cost more than one order.

*** = Costs an order if an enemy unit is targeted during an inspection.



STRATEGIC SIMULATIONS, INC.

1046 N. Rengstorff Avenue
Mountain View, CA 94043

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A CONSTRUCTION SET OF WW II COMBAT FEATURING

TYPHOON ON STEEL

AMERICAN, JAPANESE, BRITISH & GERMAN FORCES



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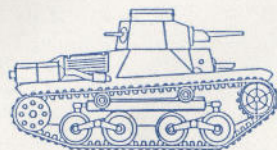
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I. INTRODUCTION

A. Overview:

TYPHOON OF STEEL is a tactical level simulation of small unit actions during World War II. You and your opponent command various units that represent the forces of the major powers of WWII. Each unit is an individual vehicle or a squad of men. At the beginning of each battle you are given a mission to accomplish. You then have a certain number of game turns in which to accomplish your mission.

Each game turn consists of two phases: an Orders Phase and a Combat Phase. You give orders to your units during the Orders Phase, and the units attempt to carry out those orders during the Combat Phase. You can choose to play just one battle or an entire campaign. A battle (also called a scenario) lasts for either 30 or 60 one-minute turns, depending on the type of battle; a campaign consists of several scenarios played one after another. Besides playing one of the historical scenarios included with the game, you may also design your own battles.

TYPHOON OF STEEL is a sequel to PANZER STRIKE!, and the rules to both games are very similar. *Where a rule for this game differs from one used in PANZER STRIKE!, that change is highlighted.* TYPHOON OF STEEL has no tutorial scenario; deletion of references to the tutorial are not marked.

When playing TYPHOON OF STEEL you will be able to choose one of three fronts (also called theatres) for your scenarios. On each front, one player will command

the units of Germany or Japan; the other player will command the units of their opponents on that front. All troops controlled by the German or Japanese player are called the Axis forces. Their opponents are called the Allied forces. The time period covered by the game also varies with each front, and has an effect on type of weapons available. The fronts available, the time period covered, and the countries comprising the Allied and the Axis forces are shown in the following chart:

Front	Time Period	Allies	Axis
Pacific	1942-1945	United States	Japan
Asia	1942-1945	British Commonwealth	Japan
Europe	1943-1945	United States	Germany

The European front includes both North Africa and Europe. The Americans are in North Africa until late 1943.

Note that the computer can play either or both sides. In addition, you can choose to turn over part of your own forces to the computer while you control only a portion of your troops. In this way you can command only certain types of weapons if you wish, while still having a balanced force.

The game is played over a map that depicts the terrain fought over in the actual battle. The map can be as large as 60 squares by 60 squares, but you can vary the north-south width of the map so that it is smaller. *There are four different terrain sets: Pacific/Asia, European summer, European winter, and North Africa* (See the Briefing Manual for details.) When playing a non-historical scenario, you can have the computer generate the map, or you can build it yourself using the terrain appropriate to the front being played.

During play, you can choose to view the map at two different levels. At the tactical level you will see a 20 square by 10 square portion of the map. At the strategic level you will see a 40 square by 20 square portion. You may freely go back

and forth between the two levels when the game is in progress.

The units and the map are scaled to represent their actual counterparts. Each unit is an individual vehicle or a squad of men. On-map artillery units are one gun; off-map artillery represents a four gun battery. Each square on the map is 50 yards from side to side. Each combat pulse represents 20 seconds, so that each game turn represents a minute of real time. The screen shows a top-down view of the units. Generally on the Apple II, the symbols for the Axis units are hollow, while those of the Allies are filled. On the Commodore 64/128, the Axis are white (black in winter), while the Allies are colored.

A complete game of TYPHOON OF STEEL should contain the following:

- 2 Game disks
- 1 Rule book
- 1 Briefing Manual
- 1 Game box

In addition, if the start-up instructions for the computer version you purchased are not included in these rules, there should be a separate card included providing those instructions.

B. Getting Started:

This section provides the start-up instructions for the various computer versions. It also explains the opening menu and how to save the game. If you are playing TYPHOON OF STEEL for the first time you should read this section and the section entitled Playing a Game. Choose an historical scenario and play it scenario several times until you have a good idea of how the game plays. You then can progress to building a battle of your own design. Before doing so, you should read the Building a Scenario section. The Formulas section deals mostly with detailed combat procedures and you only need to refer to it if you want to know more on some point. Once you feel that you have a good command of the game, you should proceed to read the Campaign Game section and play a campaign game on one of the fronts.

Talking to the computer:

TYPHOON OF STEEL is menu driven. This means that you will decide what actions to take by making selections from various menus. Generally, to select an action from a menu or to answer a yes/no question, just press the desired key. In some instances where numbers are being inserted you may also have to hit the **Return/Enter** key. Note: if a screen does not list an exit key, press the **X** key to quit that screen.

Saving the game:

You are given an option to view the Save Game Menu at three different points: during the map build routine by pressing the **V** key; automatically after deploying troops for a new scenario; and after each Combat Phase by pressing the **Y** key in answer to the question "Save Game?". You must have an extra disk initialized for your system to store the saved game. Apple and Commodore users will be able to initialize a disk using the Save Game Menu. You should use the "Map Save" option and not the "Save Game" option if you are saving a map during the map build routines. Never type file extensions when saving or deleting a game or map.

Copy Protection:

There is no physical copy protection on any version of the game. There are, however, copy protection questions which will come up in the course of the game. These questions should be easily answered if you have all of your documentation. Since there is no physical protection on the disks, you should make copies of your disks before play, set the originals aside, and play off the copies. Note that Apple II owners will need a commercial bit copy program since SSI uses its own DOS.

Starting the game on the Apple II:

Choose which front you wish to play. Put that disk in your drive with the proper side up and turn on your computer. The game will start automatically. Important: if your keyboard contains a **Caps Lock** key make sure it is depressed.

Starting the game on the Commodore:

Choose which front you wish to play. Put that disk in your drive with the proper side up and turn on your computer. (If you own a Commodore 128 you should hold down the Commodore key when you turn the computer on). Type **LOAD** "*,8 and hit the **Return** key. When **READY** appears, type **RUN** and hit the **Return** key.

The Opening Menu:

On starting the game you will see the Opening Menu. This menu will allow you to determine certain of the conditions under which the game will be played. If you own an Apple, the numbers 1 through 6 are associated with the following choices:

- (1) Whether to play a new game or a saved game;
- (2) Whether to use 1 or 2 disk drives;
- (3) Which side(s) the computer will play;
- (4) What Handicap Level to play at;
- (5) How long the message delay length should be; and
- (6) Whether to build your own scenario or to play one of the historical scenarios.

On the Commodore, the numbers range only from 1 to 5:

- (1) Whether to play a new game or a saved game;
- (2) Which side(s) the computer will play;
- (3) What Handicap Level to play at;
- (4) How long the message delay length should be; and
- (5) Whether to build your own scenario or to play one of the historical scenarios.

The default values for each item are inversed. To make a change, just press the number key associated with the desired condition.

Game Determination:

If you choose to play a new game, you will also be asked to choose whether to build your own scenario or to play an historical scenario. See the Building a Scenario sec-

tion of these rules if you wish to design your own battle. On the other hand, if you wish to restart a game from the point that you previously saved it, choose the "Saved Game" option. Please note that if you restart a saved game you will also have to choose which side will be computer controlled. (This information is not saved with the game. It allows you, however, to switch sides in the middle of the battle or to convert a two-player game into a one-player game or vice versa.) When you recall a saved game, you will be able to modify it as if it were a new game before continuing to play.

Computer Control:

TYPHOON OF STEEL may be played by either zero, one, or two players, and this is determined by the options selected on the Opening Menu. For example, if you wished to watch a demonstration game where a computer controlled Axis force faces a computer controlled Allied force, you should select the option **BOTH COMPUTER**. This determination must be made every time you boot the game, even if playing a saved game.

Handicap Level:

At the beginning of the game you may choose a handicap level of from 1 to 5. These levels only make a difference when you are building your own battle. When playing the Tutorial or an historical scenario you do not need to change the level in any way. The effects of the handicap levels are to reduce the number of strength points available to a given side by the amount shown below:

Level 1: Axis reduced by 40%

Level 2: Axis reduced by 20%

Level 3: No effect on points

Level 4: Allied reduced by 20%

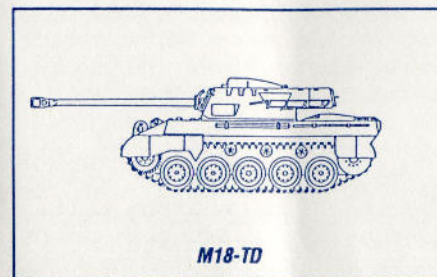
Level 5: Allied reduced by 40%

Note: these levels have no effect in the campaign game.

Delay Length:

The delay length affects messages displayed during the Combat Phase. The greater the delay length the longer these messages will be displayed. A delay of 1 will speed up the game, but will cause

the messages to be virtually unreadable. A delay of 9 will slow the game down, but will allow you more time to study the various reports provided. (You may vary the delay length during the combat phase if you wish the messages to be displayed for a greater or lesser amount of time. Pressing the 1 key during the combat phase decreases the delay length by one increment; pressing the 9 key increases it by one.)



Choosing a Scenario:

You may choose to play one of the historical scenarios or to design a scenario of your own to play. If you choose to design your own, you should read the Building a Scenario section of these rules when you are done with this section. If you are playing for the first time you are encouraged to play an historical scenario before building a scenario of your own.

Limited Command Rules:

Before actually beginning to play any scenario, you will be asked whether to use the Limited Command rules. These rules are explained more fully in the Playing a Game section, but in general if you use these rules, a headquarters unit will not be able to issue any orders once the number of orders it has reaches zero. If you don't use them, a headquarters unit will be able to issue all orders except a rally order when it is out of orders. The consequence of answering "Yes" to the question is that you will not have as much control over your forces. Until you feel comfortable with the game you should answer "No".

Campaign Game:

If you chose to build a scenario, and you chose to have the computer play one side

or the other, you will be asked whether you want to play a campaign game. If you wish to play a single scenario, answer "No". Once you have become familiar with the game and have read the campaign game rules, you should play a campaign game; answer "Yes" at this prompt.

II. PLAYING A GAME

A. Preliminaries:

Introduction:

After reading this section of the rules booklet you should be able to play any of the historical scenarios of TYPHOON OF STEEL. This section describes how to give orders to your units to carry out your assigned mission. It also discusses in general terms how the various unit characteristics interrelate. It does not, however, contain all the specific formulas used in the program. If you wish to know one of those formulas, please refer to the corresponding paragraph in the Formulas section.

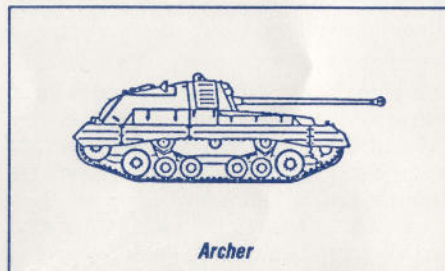
This introduction should give you a brief overview of this section and introduces some of the terms used in the game. All terms and menus mentioned in it will be described more fully later.

The central concept of TYPHOON OF STEEL is the proper use of orders. Orders are given by eligible headquarters (HQ) units to eligible subordinate units during the Orders Phase. Eligibility for both types of units depends on the state of the unit and whether it is in command control. Command control and whether a unit is subordinate to an HQ depends on the chain of command. There are four major categories of orders: movement, fire, organizational, and cancellation. These are covered in subsections B2 through B5, respectively, of this section.

Orders are given by selecting the desired order from a menu. There are two main menus in the Orders Phase. The one you see when you first enter the Orders Phase is called the Map Menu. This menu is mainly used to move the cursor

around the map, to view parts of the battlefield or to access a unit. Once a unit is accessed, you will see the Unit Menu. This menu is used to check various aspects of the unit and to give orders or perform actions in an attempt to carry out an order.

Both sides give orders to their units during the Orders Phase, the Axis first and then the Allies. When both you and your opponent have exited the Map Menu you will begin the Combat Phase. During this phase your units will attempt to carry out the orders which you have given them. Each Combat Phase lasts 3 pulses. The Combat Phases will follow one after another unless you wish to interrupt for an Orders Phase by pressing the **O** key. After 30 Combat Phases (60 for an Assault scenario) the game will end. You will then be given a listing of how many units of each type have been destroyed on each side.



Achieving Your Mission:

Orders should be given in an attempt to achieve your mission. You and your opponent score points for destroying enemy units and for certain geographical objectives. At the end of the game the number of points each side has accumulated is compared. The side with the greater number of points is the winner, and the size of the difference is the size of the victory.

Each historical scenario lists two factors which affect how victory points are counted: the type of battle and the assigned mission. (If you design your own battle, you can choose both of these. See the Building a Scenario section of

these rules.) There are 5 different types of battles:

1. Axis Assault
2. Axis Pursuit
3. Meeting Engagement
4. Allied Pursuit
5. Allied Assault

In each type there is one attacking side (the side whose name is mentioned) and one defending side. The exception to this is a meeting engagement, in which there are two attacking sides. (Whether a side is an attacker or defender has an effect on what mission that side may have).

The type of battle also determines the relative sizes of the two sides and the length of the game. In a pursuit scenario, the attacking side has about a 2 to 1 superiority over the defender, while the forces are about evenly matched in a meeting engagement. In an assault scenario, the attacking side has about a 2.5 to 1 superiority, but both sides may be dug-in at the start of the scenario (see the Unit States subsection below for a description of what being dug-in means). Assault battles last for 60 turns; all others last for 30 turns.

Type of Mission and Victory Conditions:

The type of mission assigned to a side determines how the victory points will be calculated. For all types of missions, you gain points for destroying enemy units and for exiting your own units off the enemy side of the battlefield. Units exit by moving onto any square adjacent to the east or west edge of the field.

Certain missions also may require one side or the other to clear or hold a certain objective area. This area can be seen from the Map Menu by pressing the **W** key. It consists of an objective square and all other squares within a range of 5 that have a Line of Sight (see subsection so titled below) to the objective square.

The actual number of points you get for each unit depends on the missions for both sides and whether the unit is being exited or has been destroyed. The points

you get for destroying an enemy unit are a multiple of the cost of the unit; exit points are a fixed number which is given for each friendly unit exited regardless of its cost. Normally, each side will get points equal to the cost of an enemy unit if the unit is destroyed, and 1 point if a friendly unit is exited. The cost of a unit is discussed in Unit Characteristics, below.

The mission chosen may affect the points awarded, however. There are 3 missions for an attacking force: Engage, Bypass, and Clear Objective. In an Engage mission, each side gets points equal to 2 times the cost of each enemy unit killed. In a Bypass mission, the attacking player gets **10** points for exiting attacking units off the defenders map edge, but the defender gets 2 times the cost of each attacking unit killed. In a Clear Objective mission, besides getting points normally, the player with the Clear Objective mission gets 100 points if the objective area is free of all opposing units. Note that this might occur even in the middle of a scenario, causing the score to change to reflect this fact.

There are also 3 missions for a defending force: Engage, Delay, and Hold Objective. The defender's Engage mission is the same as the attacker's. In a Delay mission, the attacker gets **4** points for exiting attacking units off the defenders map edge, while the defender gets 2 times the cost of each attacking unit killed. In a Hold Objective mission, the defender gets 100 points as long as 1 defender is in the objective area.

These values are cumulative. Thus if the attacker's mission was a Bypass, and the defender's was a Delay, the attacker would get **40** points for exiting attacking units and the defender would get 4 times the cost for each attacking unit killed.

Normally an Abandoned unit counts as a Destroyed unit. However, whichever side has the most points is considered to have retained possession of the battlefield and is able to recover some of the Abandoned units. Thus this side will lose

only half the normal number of points for Abandoned units.

At the end of the game, victory is determined by which side has the most points. If one side has more points than the other, but not twice as many, it is considered a draw. If one side has more than twice as many points, but less than 4 times as many, that side is considered to have won a marginal victory. If one side has more than 4 times as many points, it is considered to have won a decisive victory. You can check the current score and see your mission during the Orders Phase by pressing the **9** key from the Map Menu.

Chain of Command:

Generally, a unit can receive an order only from its immediate superior headquarters. That headquarters in turn may report to an even higher headquarters. There may be several levels of such headquarters. This is called the "chain of command" and is dependent on the organization of your forces. The organizational terms used in this subsection do not appear on the screen when playing the historical scenarios (they do when you design your own battles) and the organization of the forces is preset. The concepts discussed here are important, however, for all scenarios and the terms are used in other sections.

Each infantry unit in the game represents a squad of men. Several of these squads are formed into a platoon. All units are identified by a letter and a number. Each platoon has a unique letter, and within each platoon each unit has a unique number. The number for all headquarters units, at whatever level, is 0. Having the same letter as another unit means that the units are in the same formation.

Several platoons constitute a company. There may also be troops attached directly to the company headquarters. These units use the same letter as the company HQ. As an example, company headquarters B0 may have squads B1

and B2 reporting directly to it, as well as platoons C, D, and E. In each of those platoons, there would be an HQ and several squads, say 4 for this example. Thus the whole company would consist of units C0 to C4, D0 to D4, E0 to E4, and B0 to B2. This would be four separate formations.

Vehicles and guns are organized in a similar fashion, but each individual vehicle or gun is separately identified, and several vehicles or guns constitute a platoon. In addition, part of a platoon (2 vehicles or guns) is termed a section. It is treated for game purposes as if it were a platoon.

The terminology used in these rules is based on the general usage of those terms in most western armies. What a formation is called in the game may not actually reflect how it is treated in these rules. Thus Commonwealth tank formations which are called "squadrons" function in the game as companies, and should be treated as such when reading these rules. Likewise, Commonwealth tank "troops" should be treated in these rules as platoons.

The overall supreme headquarters for your troops is unit A0, and is called the battalion headquarters. All HQs that do not report to another HQ report to it.

All units below an HQ in the chain of command are said to be subordinate to the HQ. All HQs above a unit in the chain of command are said to be superior to the unit. This applies to intermediate HQ's as well. Thus in the above example, HQ C0 is superior to units C1 to C4, but is subordinate to HQ B0 as well as A0.

You can check a unit's chain of command by pressing the **H** key from the Unit Menu. Doing so will access the next superior HQ, and will list that HQ's morale, its command rating, and the current number of orders it has to spend. In the above example, pressing **H** from the Unit Menu for C4 will access

C0; doing it from C0 will access B0; doing it from B0 will access A0.

The chain of command of a unit is important when giving orders. A headquarters can only give an order to a unit in its formation. Conversely, a unit can receive an order only from its formation HQ. There are two exceptions to this. Any HQ unit can call in bombardment fire, and a unit can be recipient of a rally attempt from any superior HQ. Finally, the number of orders an HQ receives in a turn may be increased by receiving an order from a superior headquarters. All of these items are explained more fully below.

Moving Around The Map:

When you first enter the Orders Phase you will see the Map Menu on the screen below the map. This menu will list most of the commands which you can use from this menu. The bottom line of the menu shows the x and y coordinates of the cursor and, if the cursor is over a unit, the type of unit it is. You can move the cursor 1 square in a given direction by pressing the appropriate number key. Each number 1 through 8 corresponds to a compass direction:

8	1	2
7		3
6	5	4

Thus to move the cursor one square to the east (right), press the **3** key. The cursor can also be moved in this manner from the Unit Menu and from some other submenus (such as the Bombardment Menu).

Accessing Units:

In order to do something with a unit during the Orders Phase you must see the Unit Menu for that unit at the bottom of the screen; bringing up a Unit Menu is called accessing that unit. The top line of a Unit Menu lists the unit's formation letter and its ID number, the type of unit it is, the number of suppression points it currently has, its state, and the direction it faces.

There are several ways to access a unit. One way is to press the key which corresponds with the unit's formation letter. You will then be prompted for the individual ID number for the unit you want to access. Thus if you wanted unit H4, you would hit the **H** key followed by the **4** key. Note that there is a maximum of 20 formations possible, so that letters **A** through **S** on the Map Menu are reserved for accessing formations.

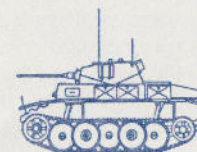
You can also access a unit by moving the cursor over the unit. When you do so the type of unit that it is will appear on the bottom line of the Map Menu. You can access the unit by pressing the **U** key. If there is more than one unit in the square, make sure that the type of unit you wish to access appears on the bottom line of the Map Menu. If it does not, press the **Y** key until it does, and then press the **U** key to get the unit.

Once you have accessed a unit, you access another unit in one of three ways. First of all, if you press the **X** key from the Unit menu you will return to the Map Menu, and you can use the ways listed above to access another unit. Secondly, if you press the **N** key from the Unit Menu you will get the next unit in alphanumeric order. Thus if formation B has only 2 units, pressing the **N** key from the Unit Menu for B1 will access unit C0. Finally, if you press the **H** key from a Unit Menu, you will access the unit's immediate superior headquarters. This is handy when you need to find a unit's HQ for rally purposes.

Unit Characteristics:

There are many values associated with a unit that have an effect on some aspect of the game. The actual values that a unit has depend on many factors, including the type of unit it is, the type of weapon(s) the unit has, the time period of the battle, and the values chosen for some of the variables when the scenario was designed. (These are set for the historical battles.) Some of the unit's characteristics will change as the unit takes losses, comes in or out of command control, rallies, or follows orders.

Do not be concerned if you do not understand everything in this subsection on first reading. After reading it you should, though, know what the abbreviations stand for. The impact of the various characteristics on the game are discussed in the various subsections below.



PZ-III (Lynx)

To see a unit's current values you need to access a unit during the Orders Phase. On the top line of the Unit Menu you will see the unit's formation letter and ID number followed by the type of unit it is. The next two items are its suppression value (following the S:) and its current state. Finally, the number from the movement compass corresponding to the direction the unit faces is also given.

The suppression value is the current number of suppression points a unit has, and is a rating of how affected the unit has been by enemy fire. The unit's state is dependent on the unit's suppression level and on the orders it is attempting to carry out. A unit's state has an effect on how the unit moves and takes losses and whether it can receive orders.

The other characteristics for a unit can be seen by referring to its Weapons Page. This is done by pressing the **W** key from the Unit Menu. A typical weapons page is represented in figure 1 on the next page.

This shows that the unit type is a German Panzer IVH tank. It has 3 weapons: a 75L48 gun and 2 tank machine guns. Each weapon has a listing for its ammo, size of shell, shell penetration value, accuracy, maximum range, and infantry attack value. All of these values have an effect when the unit fires at the enemy.

On all vehicles the first two weapons listed are considered to be in the turret or upper hull, and the last two in the lower hull.

All vehicle units have a listing for the amount of armor in various locations on the vehicle. Infantry and gun units do not show any values for armor. The vehicle's front turret, front hull, side turret, side hull, and top armors are all given. If a unit has no top armor it is considered an open-topped vehicle. If it has no front hull armor it is considered a soft target vehicle. Halftracks are open-topped; trucks are soft targets. The armor on the back of a vehicle is the same as its side armor.

The size listing under the armor values is the silhouette size, and is a rating of how big the unit is. A tank with a size of 5 or more is considered a heavy tank. The size affects sighting and fire directed at the unit.

The max speed is the maximum speed of the unit in miles per hour and determines how far the unit moves in a pulse. The number of men in the unit has an effect on the unit's fire. The first shot rating is used in fire combat to determine how soon after being ordered to fire that a unit does so and how many shots a unit can fire in a pulse. Whether a unit has a radio has a bearing on how it traces its command control.

A unit's skill is a rating of its experience and affects its fire and how soon it discovers enemy units. Its morale is a rating of how much punishment it can take in terms of suppression points before its state changes. The unit cost is used in determining the victory conditions.

In the right-hand column are four values. The first is the range and shows the current range at which the unit will open fire. This is equal to or less than the maximum range of its biggest weapon, and you can adjust it during play. The last value states whether the unit is in command control.

The two middle values in the right column may or may not apply to the unit. If

the unit is a headquarters unit, these numbers are the current number of orders it has to use and its Command Rating. If the unit is not an HQ, the numbers listed are the number of orders and the Command Rating of its formation HQ. The Command rating is used to determine how many orders an HQ gets each turn.

PZ-IVH	AM	SZ	PN	AC	RG	IA
75L48	81	4	14	16	50	5
TMG	95	1	0	6	10	8
TMG	70	1	0	6	10	8
	FT	FH	ST	SH	TP	
ARMOR	7	9	4	4	3	
SIZE	4					
MAX SPEED	13					
MEN	5					
1ST SHOT	10					
RADIO	YES			RANGE		50
SKILL	5			ORDERS		3
MORALE	4			COMMAND		6
COST	12			CMD-CTRL		YES

Figure 1.

Unit States:

The state of a unit is shown on the top line of the unit menu and affects its ability to move, to fire, and to give or receive orders. Note: the state shown on the screen is the unit's state as of its last pulse prior to the Orders Phase. If its suppression value was increased after that point, the suppression value and the current state may not correspond as they should.

There are 14 different states possible in the game. Those states and their effects are:

Dug-In:

How state is entered: A unit can become Dug-in only if it is in an assault type battle, and then only during deployment. If you press the * key from the Map Menu during the deployment phase, all of your units will become Dug-in.

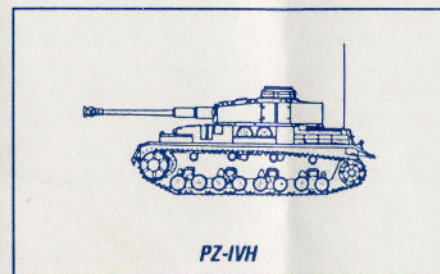
Effects of state: A unit that is Dug-in receives certain benefits in combat. The

unit cannot move and remain Dug-in. Even when its suppression level is high enough, it does not become Pinned or Buttoned.

How state is exited: A unit will remain in this state until ordered or forced to assume another state.

Positioned:

How state is entered: You can order a unit to enter this state during the Orders Phase. A moving unit will automatically enter this state when it has reached its last movement objective.



Effects of state: This is the normal non-moving state for a unit. It has no effect on any value, but a unit in such a state may be able to take advantage of certain fire benefits it could not otherwise use. A unit must be positioned in order to receive certain benefits in combat, such as being hull-down.

How state is exited: A unit will remain in this state until ordered or forced into another one.

Cautious Advance:

How state is entered: A unit enters this state when ordered to do so during the Orders Phase. It also enters this state if it was given a Full Advance order but its suppression level is at least 2 and it is visible to an enemy unit. Warning: when one unit in a formation drops from Full Advance to Cautious Advance, all units in the formation will do so.

Effects of state: Infantry type units (including machine gun units) and mobile gun units (mortars) move at 3 miles per hour in this state. These units become Pinned if forced to take a loss. Vehicle units move at 6 miles per hour. If either a

firing unit or its target is moving the fire is less effective. If it is not Buttoned it can see in a 360 degree circle.

How state is exited: A unit will remain in this state until it has reached its last movement objective, the Cautious Advance order has been cancelled, or it has been forced into another state.

Full Advance:

How state is entered: A unit enters this state when ordered to do so during the Orders Phase.

Effects of state: All units move at their maximum speed. If either a firing unit or its target is moving the fire is even less effective than in a Cautious Advance state. A unit in this state can only see in a 90 degree arc in the direction that it is facing.

How state is exited: A unit will remain in this state until it has reached its last movement objective, the Full Advance order has been cancelled, or it has been forced into another state.

Loaded:

How state is entered: A unit enters this state by being ordered to embark.

Effects of state: A non-vehicle unit being carried by a vehicle is considered Loaded. Headquarters units can give orders while Loaded. Other units can receive orders while Loaded, but cannot execute any movement or combat orders. If the Loaded unit's carrier is eliminated the Loaded unit is also.

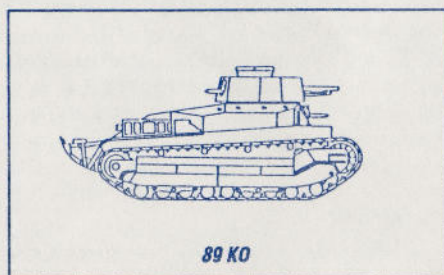
How state is exited: A unit leaves this state by being ordered or forced to debark. A unit is forced to debark when its carrier accumulates suppression points equal to or greater than the morale of the carrier. When debarked in this manner, the former passenger will gain a number of suppression points equal to that of its carrier.

Pinned:

How state is entered: A non-vehicle unit is forced to enter this state when its suppression level is greater than or equal to its morale and the unit is not Dug-in. A unit in a Cautious Advance state will become Pinned if it takes any losses.

Effects of state: Only a non-vehicle unit becomes Pinned. When Pinned, it cannot have an order cancelled. A Pinned unit will not fire as effectively, and fire against such a unit will not be as effective unless the firing unit is adjacent to the target unit.

How state is exited: A unit will remain Pinned until its suppression level is less than its morale or until it is forced into another state.



Buttoned:

How state is entered: A vehicle unit is forced to enter this state when its suppression level is greater than or equal to its morale and the unit is not Dug-in.

Effects of state: Only a vehicle unit becomes Buttoned. When Buttoned, a unit will move as if it had been given a Cautious Advance order, even if the order was for a Full Advance. A Buttoned vehicle can only search for enemy units in a 90 degree arc in its direction of facing during pulse three. A Buttoned unit will not fire as effectively.

How state is exited: A unit will remain Buttoned until its suppression level is less than its morale or until it is forced into another state.

Retreating:

How state is entered: A *non-Japanese* unit is forced into this state when its suppression level reaches twice its morale. A unit can also be ordered to enter a Retreating state.

Effects of state: A Retreating unit will use its full movement allowance to move to cover or to its edge of the battlefield. An HQ unit that is Retreating cannot issue any orders, and no Retreating unit can receive an order. A Retreating unit

can benefit from a rally order of a superior HQ. Fire against a Retreating unit will not be as effective unless the firing unit is adjacent to the target unit.

How state is exited: A unit will remain in this state until its suppression level is less than twice its morale or until it is forced into another state.

Routed:

How state is entered: A *non-Japanese* unit is forced into this state when its suppression level reaches three times its morale.

Effects of state: A Routed unit will use its full movement allowance to move to cover or to its edge of the battlefield. An HQ unit that is Routed cannot issue any orders, and no Routed unit can receive an order. A Routed unit can benefit from a rally order of a superior HQ. Fire against a Routed unit will not be as effective unless the firing unit is adjacent to the target unit.

How state is exited: A unit will remain in this state until its suppression level is less than three times its morale or until it is forced into another state.

Heavy Suppression:

How state is entered: A *Japanese* unit enters this state if its suppression level is twice its morale or greater. A *non-Japanese* unit under these conditions would be forced to enter a Retreating or Routed state. Japanese units do not Retreat or Rout.

Effects of state: A *Japanese* unit that is Heavily Suppressed cannot move or fire. It will remain in this state for 3 to 9 pulses. Heavy Suppression will not be listed as the state of the unit on the screen; rather, the unit's state will be listed as Pinned, Dug-in, or Positioned, depending on the its state prior to being Heavily Suppressed.

How state is exited: When the delay imposed on the unit is reduced to 0, the unit assumes the state listed for it on the screen.

Off-Map:

How state is entered: Certain artillery units are deployed at the beginning of

the game in this state. A unit which Routs, Retreats, or voluntarily moves off of its own map edge enters an Off-Map state, and no victory points are awarded for it.

Effects of state: A unit in this state can never move onto the map. An Off-Map artillery unit can receive an order from an on-map unit to bombard. Other than that such a unit cannot be fired at, moved, or otherwise give or receive orders.

How state is exited: A unit can never leave this state.

Abandoned:

How state is entered: A vehicle or a non-mortar gun unit is forced to enter this state if it must Retreat or Rout and it has a max speed of 0.

Effects of state: The unit is out of play. If the unit was an HQ unit, all surviving members of its formation become computer controlled.

How state is exited: A unit can never leave this state.

Destroyed:

How state is entered: A unit is forced to enter this state if it destroyed in combat.

Effects of state: The unit is out of play. If the unit was an HQ unit, all surviving members of its formation become computer controlled.

How state is exited: A unit can never leave this state.

Exited:

How state is entered: A unit is forced to enter this state if it is on the map edge behind the enemy side. (Be careful: this could happen during play when not desired.)

Effects of state: The unit is out of play. If the unit was an HQ unit, all surviving members of its formation become computer controlled. You may gain victory points for the Exited unit, depending on your mission.

How state is exited: A unit can never leave this state.

For one of your units in a state which does not preclude it getting orders, you

can change the state of the unit during the Orders Phase. This is done by pressing the S key, and then choosing the desired state from the submenu which appears. Thus if a unit is in a Full Advance state, hitting S and then C will slow it to Cautious Advance, while hitting S and then P will cause it to halt by putting it into a Positioned state.

Making a voluntary change of state does not expend any orders, but the formation headquarters must have at least one order left or the change cannot be made. Note that if you choose to retreat your unit, its suppression level will automatically rise to just above twice its morale.

Command Control:

If a unit is out of command control (OCC) it may not receive an order. Command control for all units is judged after the Combat Phase but before the Orders Phase begins. Whether a unit is in command control depends on whether it has a radio (see the unit's Weapons page). If it does not, the unit must be within 5 squares of its immediate superior headquarters to be in command control. If it does have a radio, look at the command rating of the superior headquarters. The higher that number is, the more likely the subordinate unit will be in command control.

If a non-HQ unit is out of command control, it cannot receive an order during the Orders Phase. If a subordinate headquarters is OCC, it cannot spot for indirect fire for non-formation units and it will not receive any additional orders to spend from its superior headquarters. Command control for units reporting to an OCC subordinate HQ is judged normally, so a unit may be in command control while its HQ is not. An HQ that is OCC may still issue orders. Headquarters A0 is always in command control.

Please see the Briefing Manual for the percentage chance that a unit will have a radio.

B. ORDERS:

1. In General:

Receiving Orders:

After the last pulse of the Combat phase but before beginning the Orders Phase, the computer performs two tasks. It first checks all units to see which are in command control and which are not. It then looks at all headquarters units in command control. Each such HQ receives more orders which it can spend during the Orders Phase to give orders to its subordinate units. Note that a headquarters unit will never receive more orders if the number of orders it currently has is equal to the number listed for its command rating. Once the number of orders it has is less than its command rating, it is once more eligible to receive more.

Headquarters receive orders in two ways. For every 10 points of its command rating, the HQ receives one order. If its command rating is not evenly divisible by 10, there is a chance it will receive an additional order in a turn. For instance, an HQ with a command rating of 35 would have a 50% chance of getting 3 orders and a 50% chance of getting 4 orders in a turn. An HQ with a command rating of 8 would have an 80% chance of getting 1 order and a 20% chance of getting no additional orders.

A headquarters unit in command control can also receive orders from superior HQs. A subordinate HQ will receive one order per turn per superior HQ if the subordinate HQ has less than 1/10th the number of orders that the superior HQ has. Thus if A0 has 32 orders, and B0 3 or less orders, B0 will receive one order from A0.

Giving Orders:

Orders are given during the Orders Phase by headquarters units to themselves or to units in their formation. To enter the Orders Phase from the Combat Phase, press the **O** key. To give an order to a unit, access the unit you wish to order and press the key which corresponds to the order you wish to give. For

some orders, you will need to access the HQ unit and press a key. Generally, a headquarters unit can only give orders to a unit in its own formation, with two exceptions: bombardment fire can be called in by the firing unit or by any HQ, and when an HQ orders a rally, any subordinate unit within the rally radius of that HQ can benefit from the rally. (See the rules below for bombardment fire and rally.)

Normally, a headquarters expends 1 order when a unit in its formation is ordered to do something. There are some exceptions to this. One is for a rally order: it costs 1 order for a headquarters to press the key to rally, plus an additional order for every unit that actually does rally. Thus if no units were to rally, an HQ would spend 1 order; if 2 were to rally it would spend 3 orders.

Another exception is for All-Units Mode. This is a special mode which is entered by pressing the **A** key. If the current unit is not the formation HQ, the formation HQ will be accessed. The headquarters' state will temporarily change to read **ALL** until an order key is pressed. When in All-Units Mode, certain orders can be given to all units in command control in the whole formation at the cost of 1 order. The following orders can be made in All-Units Mode: cancel orders, change facing, move, and set firing range. You must also place a formation in All-Units mode before turning it over to computer control.

Finally, more than 1 order may be spent in the case of indirect bombardment fire. When such fire is ordered, the HQ of the unit making the indirect bombardment fire will expend an order 50% of the time. Ordering such fire will always cost the HQ of the spotting unit 1 order unless that HQ is the HQ of the firing unit; in that case the 50% rule applies.

The state of both the headquarters unit and the subordinate unit is important in determining whether a unit can give or receive an order. Refer to the Unit States subsection above for this information.

Limited Versus Unlimited Command Rules:

Normally, once a headquarters unit is out of orders, it can no longer give any orders until it receives more. This is not true, however, if you choose to play with the Unlimited Command Rules. At the very beginning of the game you will be asked to choose whether to use the Limited Command Rules. If you say **Yes**, orders will be given and received as discussed in this section. If you say **No**, a headquarters unit will be able to give all orders EXCEPT A RALLY ORDER even though it has no orders left.

Computer Control:

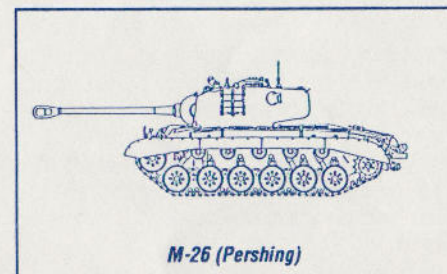
At the beginning of the game you can choose which side(s) will be controlled by the computer. Even if you choose to play a side yourself, any or all of your units may also be controlled by the computer. Once under computer control you no longer direct the actions of those units; the computer does.

Your units may come under computer control either voluntarily or involuntarily. Units in a formation are automatically and involuntarily placed under computer control when the headquarters unit for that formation is no longer in play. Only those units in the headquarters' immediate formation become computer controlled; any subordinate units are not. Once such a formation becomes computer controlled it remains so until the end of the scenario. As an example, suppose C formation and unit B1 reported to B0. If B0 were to be eliminated, B1 would become computer controlled; formation C would not.

You may also voluntarily place any formation under computer control during the orders phase. This is done in one of two ways. One way is to press the **A** key to go into all-units mode, and then press the **J** key. All units in the formation will then have a **C** in front of their state; this is an indication that the units are under computer control. You can also press the ***** key from the map menu. This places all of your forces under computer control,

and is handy to use when you wish to quickly finish a scenario that is nearly over.

Formations voluntarily placed under computer control will remain that way until the **J** key is pressed for each formation. This is true even if you used the ***** key to place your troops under computer control. Of course, should the formation's HQ be eliminated in the interim, the units will always be under computer control.



2. Movement Orders:

To have a unit move across the map, you need to first access the unit. Then move the cursor across the map to the square that you want the unit to move to. Hit the **M** key and choose the state that you wish the unit to be in during its move, either Cautious Advance or Full Advance. The square chosen will become the unit's movement objective and the unit will attempt to move there using the speed appropriate to its state.

The cursor will not return to the unit, though its Unit Menu will reappear. If you wish for the cursor to go back to the unit after giving it a movement order, press the **L** key from the Unit Menu.

You can give a unit up to two movement objectives using this method. You can see what the movement objectives are by pressing the **O** key from the Unit menu.

A unit in a Full Advance state moves at its full movement speed, which is listed on its Weapons page. A vehicle unit in a Cautious Advance state moves at 6 MPH; an infantry or mobile gun at 3 MPH. See

Unit States above for more information. The speed of a unit is in effect a movement allowance, from which the cost of terrain moved through is subtracted. The Terrain Effects Chart (TEC) lists movement costs for each type of terrain in miles per hour per pulse. Left-over points are retained. As an example, each clear terrain square costs 5 MPH to move through in clear weather. A vehicle in a Cautious Advance state would move through 1 such square every pulse but the fifth, when it would move through 2 squares.

Movement allowances may also be accumulated over several turns. As an example, it costs trucks 60 movement points to enter a forest. If a truck unit with a maximum speed of 12 were placed in a Full Advance state and ordered to enter a forest square, it would take it 5 pulses to do so.

There is always a delay of 1 pulse before a unit begins to move. This delay may be increased if the unit is ordered to perform certain actions. For instance, a unit which debarks in an Orders Phase has a delay of 2; if it is also ordered to move in that same Orders Phase its delay will increase to 3. Thus the unit will not move at all during the turn.

Some changes of state change a unit's movement objective, and some do not. A unit forced to enter a Retreat or Rout state will have a new movement objective automatically assigned to it, and this objective will be towards the map edge of that side. On the other hand, a unit that must temporarily halt an advance by entering a Positioned state will not lose its movement objective. (If you wish to delete the objective, see the cancel command, below). This is useful if the unit must hold up for other friendly units to catch up to it.

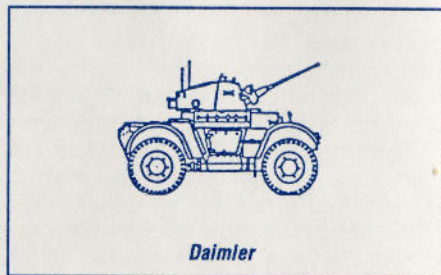
Movement in All-Units Mode:

Normally, a headquarters unit will expend 1 order for each unit in its formation that is ordered to move. Using All-Units Mode the headquarters

expends only 1 command for the whole formation to move. To make such a move, access the formation HQ. Hit the A key to go into All-Units Mode, and make a move as you normally would. You will be asked whether to make a formation move or not. If you say no, all units in the formation will be assigned to move to the cursor location. If you say yes, the movement objectives of units making the formation move will be in the same position to each other as the units were at the start of the formation move. Thus if one unit were due north (direction 1) from another unit at the start, the first unit's objective would be due north of the second unit's.

Stacking:

Only a certain number of units move into a square during any one pulse. During the first pulse of a turn, a unit cannot enter a square if there is already one or more friendly units in the square. During pulses 2 and 3, a unit cannot move into a square if there is already 3 or more units in the square. Units already in a square do not have to leave, but no new units can enter over these limits.



Stacking also has an effect on unit access. When the cursor is over a square containing a unit that you wish to access, use the Y key until you see the desired unit's type on the bottom line of the Map Menu. You may then use the U key to access the unit.

Embarking and Debarking of Passengers:

Vehicle units may carry passengers around the map with them as they move. Loading a unit onto a vehicle is called embarking a

passenger onto a carrier; Unloading is called debarking from a carrier.

Each Passenger unit costs a certain number of transport points (TPs), and each vehicle unit can carry only a certain number of TPs. Prime mover units and heavy trucks and heavy halftracks can carry 15 TPs. All other vehicles can carry 10. Only prime movers, trucks (light, medium, and heavy) and halftracks (light, medium and heavy) can carry artillery passengers. The number of points each transportation unit costs is listed below (all are per unit except for infantry):

Infantry	1 per man
Medium MG	2
Heavy MG	4
Light Mortar	3
Heavy Mortar	5
AT Gun	10
Light AA (50mm and less)	10
Heavy AA (51mm and more)	15
Light How (95mm and less)	10
Heavy How (96mm and more)	15
Light IG (95mm and less)	10
Heavy IG (96mm and more)	15

To embark a unit, the unit to be loaded must be in or adjacent to the carrier's square. You then access the carrier unit and press the E key followed by the passenger's formation letter and ID number. The passenger unit will then move on-board the carrier.

While a unit is a passenger, its state will read <LOADED>. A loaded HQ can issue orders. A unit that is loaded can receive orders from its HQ, but it cannot execute any combat or movement orders. (Other orders, such as changing its fire range, can be done.) You can check which units are embarked on a carrier by accessing that carrier and pressing the P key.

You can debark a unit either by accessing the passenger or by accessing the carrier and pressing the D key. This only makes a difference if there is more than one passenger on the vehicle. If done using the passenger's Unit Menu, only that passenger is debarked. If done using the carrier's Unit Menu, all of that carri-

er's passengers are debarked. An unloaded unit will become Positioned and will have its delay increased by 2. The carrier's delay will be increased by 1. (In essence, these units require that many pulses to get reorganized and cannot do anything during that period.) When embarking, the HQ of the vehicle must expend an order; when debarking, the HQ of the unit ordered to debark expends the order. Units can be debarked in all-units mode.

If a carrier unit receives suppression points greater than or equal to its morale, it will automatically debark all passengers. The passengers will gain a number of suppression points equal to that of the carrier.

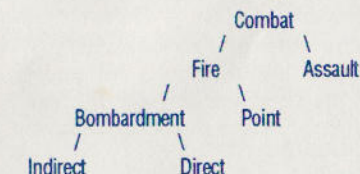
Weather Effects on Movement:

During snow and rain add 2.5 to the movement cost of each square, except for swamps in snow, where the cost is reduced to half of normal. These effects are noted on the Terrain Effects Chart.

3. Combat and Combat Orders

Introduction to Combat:

An enemy unit is destroyed or damaged by ordering a friendly unit to have combat against it. Combat orders are given during the Orders Phase, and resolved during the Combat Phase. There are two types of combat: fire and assault. There are two types of fire combat: bombardment and point. There are two types of bombardment fire: direct and indirect. (All terms and conditions discussed in this introduction are explained below.)



Besides the normal preconditions for giving and receiving orders, there are some preconditions for combat. Assaults are only possible against units in the same square as or adjacent to the assaulting unit. For fire combat, the firing unit

must have ammo and the target must be within range of the firing unit. In addition, for point fire and direct bombardment fire the firing unit must be able to see the target unit or square. Indirect bombardment fire is more accurate if the firing unit or a friendly HQ can see the target square.

If these preconditions are met a unit can be ordered to have combat against a target. If a unit is ordered to have fire combat, several steps are undertaken to determine whether the target is hit, and if so what damage is inflicted.

Units can also fire smoke instead of projectiles. Visibility is blocked through a square containing smoke.

Combat Terms:

The following terms are used in discussing combat:

Combat: a general term, designating both fire and assault.

Assault: combat performed by an infantry-type unit against an enemy unit in or adjacent to its square.

Fire: combat performed at a range by firing weapons. This term includes both bombardment and point fire.

Point fire: fire combat performed against an individual enemy unit in a square. Certain types of point fire may affect other units in the square besides the target unit.

Bombardment fire: fire combat performed against all units in a designated square. This term encompasses direct bombardment fire and indirect bombardment fire.

Direct bombardment fire: bombardment fire combat performed against a square at which the firing unit itself chose to fire.

Indirect bombardment fire: bombardment fire combat performed against a square not chosen by the firing unit, but

by another unit. (Note that while mortar units and Off-Map artillery units can plot their fire in a manner similar to a direct fire bombardment, their fire is always considered indirect.)

Firing unit: the unit actually performing the fire order.

Spotting unit: in indirect bombardment fire, the unit choosing the square to be fired at.

Target: for bombardment fire, the square being fired at. For point fire, the unit being fired at.

Hard target: a vehicle unit with front armor.

Soft target: a vehicle unit with no front armor (trucks and prime movers) and non-vehicular units.

Open-topped target: a hard target with no top armor (halftracks and some self-propelled guns).

AP shell: armor piercing shell, fired by point fire units at hard targets.

HE shell: high explosive shell, fired by point fire units at soft targets and by all units firing bombardment fire.

Primary target: a soft target that is the target of point fire.

Certain other terms are values found on a unit's Weapons Page. A sample Weapons Page is set out above, under Unit Characteristics.

Preconditions for Fire Combat

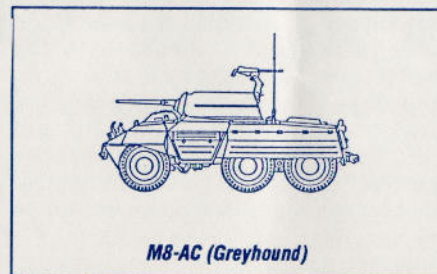
Ammunition:

A weapon must have ammo in order to fire. The amount of ammo a weapon currently has is listed on the Weapons Page for the unit. A weapon starts with between 50% and 100% of the maximum amount listed for that weapon on the Weapons Chart, and one round is used each time the weapon fires. If a weapon fires twice in a pulse, it will use 2 rounds

of ammo. A unit can never get more ammo during a scenario, but is restocked at the beginning of each scenario during the campaign game.

Sighting Enemy Units:

Except for indirect bombardment fire, a firing unit must be able to see its target. In addition, indirect bombardment fire is more accurate if either or both the spotting unit and the firing unit can see the target. Sighting is done during the Combat Phase by friendly units searching the map. A friendly unit can see an enemy unit if there is a clear, unobstructed line between the two units. This line is called the Line of Sight (LOS) and is dependent upon the facing of the sighting unit, the visibility level, and the terrain between the two units.



Searching for enemy units is done during all 3 pulses of the Combat Phase. During pulses 1 and 2, only non-moving, non-firing units may search. They only see in a 90 degree arc in the direction they are facing. During pulse 3, all units may search in a 360 degree circle except for Buttoned vehicles, units in a Full Advance state, or self-propelled guns with no turrets. These units search as in pulses 1 and 2.

Visibility:

For the historical scenarios, the visibility level is set. (This can be modified when you design your own battles. See Building a Scenario.) If a unit has a clear Line of Sight and is facing in the right direction, the visibility level multiplied by 10 is the maximum number of squares a unit can see. A unit cannot see past this range, and so generally cannot fire past

it. The exception to this is that a unit can conduct indirect bombardment fire if it has a weapon whose range is greater than the visibility level as long as some other unit spots for it.

There are some modifiers to the visibility range, and these are listed on the Visibility Range Modifiers Table. In brief, the range is less if the spotter is buttoned, if it fails its skill check, if it is pulse 1 or 2, if the target is stationary, or if the target is hull-down, dug-in, or in cover. The range is greater if the spotter is at a higher level than the target. Skill checks and being hull-down or in cover are explained below.

In addition, the range may be longer or shorter depending on the silhouette size of the target. The silhouette size of a unit is found on the unit's Weapons Page to the right of "Size". The size modifier is such that the visibility range is less for units of size 3 or less, and greater for units of size 5 or more. This modifier is such that it is of less effect when the target is within 5 squares of the firing unit. See the Formulas section for how the calculation is actually made.

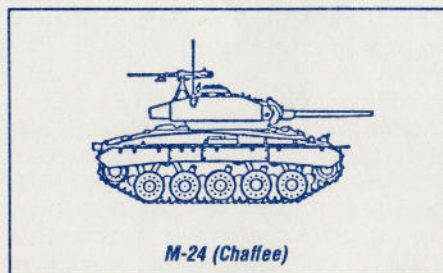
When you plot a unit to fire, it will become visible. It thus may be hit before it actually fires if the other side goes first in a pulse.

Line of Sight:

The line between a sighting unit and a target is known as the Line of Sight (LOS). In order for the sighting unit to see the target, this line must be clear. It is not clear when terrain obstructs the line. Whether the LOS is blocked depends on the height of the sighting unit, the height of its target, and the terrain in between them.

The levels of all terrain features appear on the Terrain Effects Chart (TEC) which shows that there are 5 levels (0 through 4). A unit is considered to be at the level of the terrain that it is sitting on. The terrain underlying all units can be viewed from either the Map Menu or the Unit Menu by pressing the 0 (Zero) key.

To determine whether a Line of Sight exists between one square and another, move the cursor to the square you wish to sight from and press the **V** key from the Map Menu. All squares visible will be inversed. Likewise, to see what squares are in the LOS of any given unit, access the unit and press the **V** key. All squares that the unit can see will be inversed. You will notice that while a LOS cannot be traced through some squares (such as a smoke square), it can be traced through one or more squares of other terrain types.



M-24 (Chaffee)

Facing:

Except for indirect bombardment fire, a unit can only be ordered during the Orders Phase to fire at a target it can see in that phase. Generally, a unit can see units in its LOS in a 360 degree circle. A unit in a Full Advance state, a Buttoned unit, or a self-propelled gun with no turret, however, can only see in a 90 degree arc in the direction that it faces. An anti-tank gun can see in a 360 degree circle but must face the direction that it wishes to fire.

Facing is determined by the same compass directions that determine cursor movement. That is, a unit can face one of the following 8 ways:

8	1	2
7		3
6	5	4

You can order a unit's facing to be changed by accessing the unit and pressing the **F** key. You will then be prompted to enter the new direction to be faced. Orders can be conserved by having an entire formation change facing together.

To do this, access the formation headquarters, press the **A** key to go into All-Units mode, and then press the **F** key.

When ordered to move, a unit will automatically change its facing to point in its direction of travel. There is no cost (besides the cost for the movement order) for the facing change.

Range:

Even if a unit has a valid LOS and is facing the target, the target must still be within range of the firing unit's weapon for the target to be fired at. Both the maximum range of the weapon and the current assigned fire range of the unit appear on the unit's Weapons Page. (See Unit Characteristics, above.)

At the beginning of a scenario, the current fire range is set to the maximum range of the unit's weapon with the longest range. You can change this range at the cost of one order by accessing the unit and pressing the **R** key. You will then be asked to enter a number between 0 and 9 to set a percentage distance for the range. You can press the **M** key from this submenu to return the fire range to the maximum. You can also conserve orders by accessing the formation HQ, pressing **A** to enter All-Units mode, and then changing the fire range for the whole formation.

Decreasing a unit's fire range is useful in conserving ammo or in laying an ambush. During the Combat Phase, a unit may pick its own target. Whether it does so is dependent on the proximity of the target, its value in victory points, and its appropriateness as a target for the type of weapon the unit has. Thus a tank will usually fire at another tank unless there is an infantry unit close enough to pose a danger. There is no cost in orders when a unit picks its own target. You can prevent a unit from selecting a target at an extreme range by decreasing the unit's fire range.

Skill and First Shot Rolls:

Each unit has on its Weapons Page two ratings which are used in various combat

and other calculations. These ratings are its skill rating, which is a measurement of the unit's experience and proficiency, and its 1st shot rating, which is a measure of how good it is in firing rapidly.

At various points in the game checks are made against these numbers to see if certain actions can be performed. A skill check is successful if the skill rating of the unit is greater than or equal to a randomly generated number between 1 and 10. Thus a unit with a skill rating of 4 will have a 40% chance of making its skill check, with a unit above that rating having a better chance and a unit below it having a worse chance.

The first shot check is successful if the first shot rating is greater than or equal to 50 divided by a random number between 1 and 10. Thus a unit with a first shot rating of 10 will have a 50% chance of making its check. Again, higher ratings are better and lower ones worse. Note that for each crewmember lost in a vehicle unit, that unit's first shot rating is halved.

Skill checks are used for searching for enemy units, determining a unit's rate of fire, spotting for indirect bombardment fire, and determining a unit's fire accuracy. First shot checks are used in determining a unit's rate of fire.

Some infantry anti-tank weapons (AT rifles, panzerschrecks, etc.) must be adjacent to the target unit in order to fire if the unit has less than 3 rounds of ammo left.

Rate of Fire:

A unit's rate of fire is the number of times it can fire in a combat pulse. The rate of fire for a unit depends on its shell size, how many pulses have passed since being ordered to fire, its skill and first shot ratings, and the type of fire it is conducting. Normally a unit will fire once in a pulse.

If a unit is conducting point fire, during the first pulse after being ordered to fire it will fire once if it successfully passes

both its skill and first shot checks. If it fails either check, it will not fire at all that pulse. If it is the second or later pulse after being ordered to fire, it will fire at twice the normal rate if both checks are successful and it is not moving; otherwise, just once. An exception to this is that a unit equipped with small-arms (that is, its shell size equals 1) can never fire more than once in a pulse.

If a unit is firing bombardment fire, the pulse fired and the shell size do not make any difference. Such a unit will fire at twice the normal rate if its first shot rating (not a check) is greater than or equal to 10. If not, it will only fire at the normal rate.

If a unit loses a crewmember, its rate of fire may still be increased but the execution time for that fire may be double. For example, a self-propelled gun with a first shot rating of 10 and a starting crew of 4 will fire for 10 pulses if it has lost 1, 2, or 3 crewmembers.

Note that a tank machine gun firing at an enemy unit that is not in the tank's square or adjacent to it must always pass a skill check in order to fire at all.

A machine gun that is moving (Cautious or Full Advance) will not fire. Tank machine guns that are moving will not fire at a range greater than 2.

How Combat is Executed

The mechanics of combat execution are the most complex part of TYPHOON OF STEEL. For this reason, the detailed step-by-step procedures that the computer goes through are set forth in the Formulas section which follows. A general knowledge of how the mechanics work is sufficient for play; if you would like more precision, please refer to the formulas.

The main difference between bombardment fire and point fire is in determining whether and when an individual enemy unit has been hit. Once a unit has been hit, the procedure for determining the damage inflicted is about the same for both types of fire. An assault is

independent of fire, but does use some of the same procedures.

Bombardment fire lasts 5 pulses against a square. When you look at a unit's target you will be shown either the delay left until fire commences or the number of times already fired. You can cancel bombardment fire before it has hit or before the end of 5 pulses.

Indirect Bombardment Fire:

The distinctive features of indirect bombardment fire are how accurate the fire is in hitting its target square, and how long the delay is from when the fire is ordered.

Indirect bombardment fire may be subject to two delays: an administrative delay and, for off-map artillery only, a spotting delay. The administrative delay is dependent on how the fire is called into the target square. Indirect fire must be plotted by a friendly headquarters in command control. (The fire is plotted by moving the cursor to the target square and pressing the **B** key. See below.) An HQ unit that plots the fire is known as the spotting unit. Fire can be called in on squares which no friendly unit can see.

The administrative delay, that is the number of pulses before the fire begins, depends on the plotting unit:

Unit Plotting	Delay in Pulses
Firing unit	1
Firing unit's formation HQ	3
Battalion HQ (AO)	6
Other HQ	9

Note that these delays will be shown on the screen when you choose which unit to assign to the bombardment after pressing **B**.

There are some exceptions to the delays listed above, and in these cases the administrative delay is only 1. When the firing unit is firing again at a target it just finished firing at, the delay is 1. Both sides in a assault scenario can also plot indirect fire in the first Orders Phase with only a delay of 1. Direct fire

bombardments only have a delay of 1 (see below).

Besides an administrative delay, there is also a spotting delay when the fire will be done by off-map artillery units. Add the spotter's skill rating to the firing unit's skill rating. The result is the percent chance that the unit will begin its fire on any given pulse. This spotting delay does not apply if the unit is firing smoke, if it is firing at an unspotted square, if it is firing at a target it just finished firing at, or on the first turn of an assault scenario.

Once a unit begins its fire, it will fire based on its rate of fire discussed above.

Accuracy, the probability that the assigned target square is actually hit, is also important for indirect fire. Such fire may scatter a certain number of squares. When this happens, the computer goes to the assigned target square. It then determines the maximum distance the fire might scatter. For each square of scatter, the computer randomly determines one of the 8 directions and moves one square in that direction. Whichever square the computer ends up at becomes the actual target square.

The maximum scattering distance depends on whether the firing unit is on-map or off-map and how the target is spotted. If no unit can see the target square (that is, the fire is being blindly plotted), the maximum scatter is 9 squares. If it's the first pulse that the firing unit has fired at the target, the max scatter is 9 squares. If it is not blind fire and the firing unit fails to pass an accuracy check the scatter is 4; if it passes such a check the scatter is 2. The scatter of rocket unit fire is always 9.

This accuracy check which is made is similar to a regular skill check, but you add the firing unit's skill rating and the spotter's skill rating and compare the result to a number between 1 and 20. Thus if the combined skill is 10, the units will have a 50% chance of passing this check.

There are some modifiers which will reduce the amount of scatter. If any of the following conditions are met, the scatter is halved: if the firing unit has a Line of Sight to the original target square; if the range to the target is less than 30 squares; or if the firing unit is Off-Map firing HE fire and the target square can be seen by the spotting unit. All modifiers are cumulative.

Even if the scatter is less than 1 square, the best accuracy possible is for the fire to hit the assigned target 25% of the time, with it scattering 1 square the other 75% of the time. The fire is considered to hit the assigned target as long as the final square that the fire ends up in is the same as the square assigned. It does not matter how many squares the computer may have looked at to get there.



Once a target square is determined, whatever units are in the square (friendly or enemy) are subject to damage. See the damage procedures set forth below. Bombardment fire always uses HE shells and there is never a primary target.

Direct Bombardment Fire:

A unit, such as a tank unit, which normally conducts point fire can also conduct direct bombardment fire. The unit itself calls in the fire and so must have a LOS to the target square. There is no spotting unit. Other than that, the fire is conducted as indirect bombardment fire with the exception that the maximum delay is 1, and there is no first round accuracy penalty. Its rate of fire is computed as discussed above.

Point Fire:

Whether a target unit is hit by point fire

depends on the accuracy and max range of the firing weapon, the range to the target, and the type of target being shot at. The accuracy of a weapon is listed on the owning unit's Weapons Page. The computer uses this figure, the weapons max range and the range to the target to determine an accuracy figure. This figure will range between 98% if the target is in the same square as the firing unit; to the accuracy listed on the Weapons Page at half the weapon's max range; to 2% at the max range. (The actual formulas used are set forth in the Formulas section.)

If the target unit is a hard target, the resulting accuracy figure is modified by the hard target modifiers (see the Accuracy Modifications Table). Generally, the accuracy will be better if the firing unit fired the last pulse at the same target. The accuracy will be worse if the firing unit fails a skill check, or is Pinned, Buttoned, or has any suppression points. It is also worse if the target is not adjacent and Retreating, or in cover. The accuracy is worse if either the target or the firing unit is moving, with Full Advance being worse than Cautious Advance. The silhouette size of the target is also a factor; it is figured the same as it was for visibility, above.

If the target unit is a soft target, the accuracy is modified by the soft target modifiers for the firing unit only. That is, if the firing unit fails a skill check, or if it is moving, Buttoned, or Pinned, the accuracy will be worse.

No matter what the target, the modified accuracy can never be more than 99. The lowest the accuracy can be against soft targets is 12, and against other targets is 0. The modified accuracy is the percentage chance that the target is hit. If it is hit, it is then subject to damage. Point fire uses AP shells against hard targets and HE shells against soft targets.

Damage Calculations:

The damage done against a unit depends on whether it is a hard target or a soft target, and the type of shell being used. If an AP shell was fired, only the target unit

is hit. If an HE shell was fired, each unit in the target square may be hit.

When the target is hard, the computer first checks to see if the shell penetrates. If so, it will cause damage. The chance of penetrating is greater the greater the shell size of the weapon and the greater the penetration value listed on the Weapons Page. AP shells penetrate better than HE shells, and the closer the target the more likely the penetration.

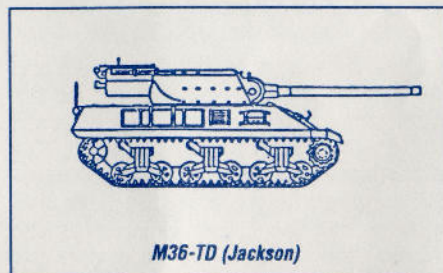
The likelihood of penetration is also less the thicker the target's armor is in the location hit. When the target is hit, the computer determines the location of the hit. Most likely the lower hull or turret/upper hull will be hit. If the firing unit is at a higher elevation than the target, there is a chance of hitting the top, but a reduced chance of hitting the tracks. To be able to hit the top, the firing unit must be two or more levels higher than the target unit.

When the target is hull-down, the chance of hitting it at all is reduced. A unit is hull-down if it is positioned in cover, if it is at a higher elevation than the firing unit, or if it is Dug-in. The armor that a unit has in the various locations is listed on the unit's Weapons Page. A unit cannot be hull-down to indirect fire. A unit on a slope square is hull-down only to adjacent units on level 3 squares; this is the only way a unit on a slope can be hull-down.

If AP shells fail to penetrate, they bounce; there is a chance that HE shells that do not penetrate the target unit attack other units in the target square or in an adjacent square. If an HE shell does fail to penetrate, it will never have a primary target. Track hits always penetrate if the shell size of the firing unit is greater than 1.

When a shell penetrates a hard target, one of several things might happen: the target may be automatically destroyed; it may lose a track; it may lose its engine; or the crew compartment may be penetrated. If a track or the engine is lost, the

unit can no longer move and will be abandoned if forced to retreat or rout. If the crew compartment is penetrated, two things may happen: one or all of the crew may be killed, and the weapons in the area penetrated may be knocked out. Thus, if the turret/upper hull were penetrated, the top two weapons listed for a unit may be knocked out.



All fire against soft targets is HE fire. Such fire may hit more than just the primary target in a square. (This is not the case if the primary target is a hard target and it is hit.) The chance of an HE shell hitting a specific unit is greatest if the unit is the primary soft target, less if it is another soft target, and less still if it is an open-topped hard target. The chance is the least if it is a regular hard target. (If a hard target is hit, the procedure explained above is used and not the following.)

Generally, the higher the weapon's infantry attack value the more likely it is to hit the target. Non-adjacent fire has a reduced chance, and the soft target modifiers may reduce the chance further (see the Formulas section). The chance is increased if the target is advancing or is an artillery unit, and decreased if it is Positioned in some kind of cover, Retreating, Routed, Pinned, or Dug-in. Small arms fire against a unit that is Dug-in or in hard cover is additionally decreased.

If, given the modified chance, a soft target is hit, it will lose a number of men based on that chance and on the firing unit's infantry attack value. Soft vehicles (trucks, etc.) and artillery units may also be destroyed outright.

Special Weapons:

Note that no defensive benefits apply to units attacked by flamethrowers or demo charges. Only two checks are made when such a weapon attacks: one check to see if the weapon is on target, and another to determine damage.

Infantry Assaults:

Infantry can also be ordered to assault an enemy unit in its square or adjacent to it. (Move the cursor to the square to be assaulted and hit the U key.) The infantry unit will conduct the assault against all enemy units in the assigned square in the first pulse of the next Combat Phase. The infantry unit will not actually move; it will assume a Cautious Advance state. After the assault, it will revert to being Positioned (even if it were Dug-in before).

An infantry unit may also carry special assault weapons (flamethrowers, demo charges, etc.) which it can use in an assault. If such a weapon has a range of 1 it can be used against a hard target in an infantry assault. Such an attack is in addition to the normal attack by the infantry unit.

If the target of an infantry assault is soft, use the HE procedure given above to determine the damage inflicted. The infantry unit's infantry assault value is 4 times what it normally would be.

When the assault target is hard, the infantry unit must first pass a morale check. It passes this check if its morale times a random number is greater than or equal to the number of suppression points the unit currently has. Thus, a unit with a morale of 4 and 1 suppression point will pass the check 75% of the time. If the unit fails the check, it routs.

If the unit passes the check, it may assault. The unit's kill rating is determined; this is either the number of men in the unit or the accuracy of its special assault weapon if it has one. This number is increased if the target is a soft or open-topped vehicle, or if the target is

stationary. It is reduced if the target is moving in a Full Advance state or if the assaulting unit fails a skill roll.

The resulting kill rating is multiplied by a random number. If the end result is more than 6, the target is destroyed. If it is more than 3 but not more than 6, the target loses a track and so cannot move. Thus if a unit's kill rating were 10, it would have a 40% chance of destroying the unit and an additional 30% chance of knocking off a track.

Smoke:

In place of projectiles, units can also fire smoke. Smoke in a square blocks the Line of Sight through the square (see Line of Sight above for how this works). Smoke is ordered in just like bombardment fire with several exceptions.

An infantry unit can place smoke only in or adjacent to its square. The smoke appears immediately in the Orders Phase. It costs an order to lay smoke.

For other units, only headquarters units can call in smoke; a unit capable of firing smoke cannot decide on its own to do so. (Except a tank HQ with a shell size of 2 or more which can plot its own smoke.) No skill check is made and the delays are slightly different. If neither the firing unit nor the spotter can see the target, it is treated like unspotted fire. If it is spotted, it is treated like on-map fire whether the firing unit is off-map or not. The scatter is the same as for on-map fire. The chance that a mortar shell will actually place smoke in a square is the shell size divided by 8.

At the start of each pulse, there is a small chance that smoke in a square will be removed.

If a vehicle is destroyed and is burning, there is a 50% chance each turn that the square the vehicle is in will have smoke added to it. There is a 5% chance each turn that the fire will go out. Buildings and vegetation on fire burn for the whole scenario and block LOS just like smoke.

Ordering Units to Fire

Viewing and Firing at Enemy Units:

Taking into account facing, visibility, and LOS, the sum total of the area that a unit can see is called its field of vision. The field of vision for a unit on the map can be seen by accessing the unit and pressing the **V** key. All squares the unit can see given its current facing will be inversed. The range shown is based on the visibility range and does not take into account the fact that a shorter fire range may have been assigned to the unit.

You can also move the cursor around the map in the Map Menu and hit the **V** key from any square on the map. All squares in a 360 degree circle from the square will be inversed. Doing this over an enemy unit lets you know which of your units that unit can see and which of your units can see it.

You may check the current target for a unit by accessing the unit and pressing the **T** key. If the unit has an enemy unit as a target, the cursor will go to the target. If the target is a bombardment square, you will see a message telling you of this fact. It will also tell you either the delay left until fire commences or the number of rounds already fired. If the target is a point fire target, you will see the type and state of the target unit below the screen as well as the range and the number of times fired. (If you wish for the cursor to return to the sighting unit, hit the **L** key.)

To fire at a unit using point fire, access the unit you wish to fire. Press the **I** key to inspect all enemy units that it can see. The cursor will go to the first enemy unit in range. Below the screen you will see the type and state of the unit and the distance to it. You can also choose one of three keys. Hitting **Q** returns you to the Unit Menu. Hitting **N** moves the cursor to the next enemy unit in range. Hitting **T** orders the friendly unit to fire at the unit under the cursor. Hitting **T** costs one order.

To fire at a unit using direct bombardment fire, access the unit you wish to

fire. Move the cursor to any square within the unit's field of vision and press the **B** key. The weapon type and the delay will be listed below the map. Press **Q** to return to the unit without assigning a target; press the **A** key to assign that square as a target for that unit. Doing so costs one order. If it is a headquarters unit capable of laying smoke, you can also choose to do that by hitting the **S** key. This also costs one order.

To fire at a unit using indirect bombardment fire, access the unit that will act as a spotter. Move the cursor to any location on the map and press the **B** key. Those units available to bombard and the administrative delay will be listed below the map. A unit is available if it is not currently assigned a bombardment target and is in command control. Press **A** to assign the square to the unit shown; press **N** to move on to the next available indirect fire unit. Press **Q** if you wish to quit or **S** if you want the unit to lay smoke in the square. It costs the spotting HQ unit one order to plot fire or smoke; 50% of the time it also costs the HQ of the firing unit one order.

Non-infantry units fire smoke as listed above. An infantry unit can be ordered at the cost of one order to lay smoke in an adjacent square. To do so, access the unit that will lay the smoke. Move the cursor to any adjacent square or leave it in the unit's square. Press the **K** key and the smoke will immediately appear on the map.

To plot an infantry unit to assault, access the unit that will make the assault. Move the cursor to any adjacent square that contains an enemy unit, or leave it in the infantry unit's square if it is to be assaulted. Press the **U** key and the assault will be ordered. This costs one order.

4. Organizational Orders:

There are two orders which will affect the state of a friendly unit. The first of these is the voluntary change of state order (key **S**) discussed above under unit states. The second is the rally order. This

order lowers the number of suppression points that a unit has.

Suppression Points:

All units start a scenario with 0 suppression points. A unit will gain or lose suppression points for a variety of reasons. See the Suppression Points Table (SPT) for a list of the conditions and the number of points gained or lost for each. Note that the number of suppression points a unit has is adjusted several times in a turn. The SPT lists when a condition is important for gaining or losing suppression points. Every unit automatically has 1 subtracted each turn from the number of suppression points it has.

The number of suppression points a unit has is listed after the **S**: on the unit menu. A unit's morale level is listed on the unit's Weapons Page. Note that a truck unit is considered to have a 2 morale regardless of what is shown on its Weapons Page. A unit's morale may be lowered by the elimination of its formation headquarters. (If this happens, the unit will also automatically become computer controlled.)

During each combat pulse, the number of suppression points a unit has at that time is checked. Based on this number and on the unit's morale, the state of the unit may be changed. These effects are:

When the number of points becomes greater than or equal to 2, the unit may only assume a Cautious Advance state when ordered to move. This does not apply if no enemy unit can see the unit whose state is being checked.

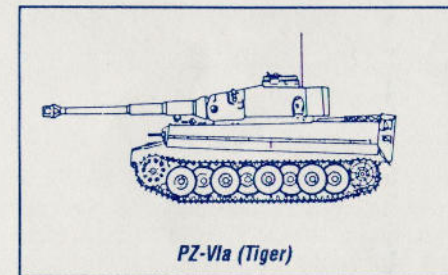
When the number of points becomes greater than or equal to the unit's morale, if the unit is a non-vehicle unit its state becomes Pinned; if it is a vehicle unit its state becomes Buttoned. This does not apply if the unit is Dug-in.

When the number of points becomes greater than or equal to twice the unit's morale, *and the unit is not Japanese*, the unit's state becomes Retreating. *If the unit is Japanese, its state becomes Heavy Suppression.*

When the number of points becomes greater than or equal to three times the

unit's morale, *and the unit is not Japanese*, the unit's state becomes Routing. *If the unit is Japanese, its state becomes Heavy Suppression.*

If the state of a vehicle is forced to become Retreating or Routing and the unit cannot move, it will be abandoned. This in effect destroys the unit.



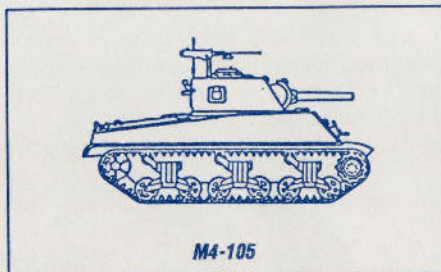
Note that a unit's state in a Combat Phase is determined during each friendly pulse. If, however, the enemy goes last during pulse 3 and causes the number of suppression points a friendly unit has to increase, that unit's state (as listed on the Unit menu during the Orders Phase) and the number of suppression points it has may not correspond as they should.

Rally:

The quickest way to decrease the number of suppression points a unit has is to rally it. To rally a unit, the unit to be rallied must be in command control and must be within the rally radius of a headquarters unit in its chain of command. The number of suppression points the unit has must be at least equal to its morale. Access the HQ unit which will make the attempt and press the **G** key. The HQ unit will expend one order to make the rally attempt and for each unit it succeeds in rallying, it will expend another order. If the HQ unit succeeds in rallying a unit, the number of suppression points the unit has will be halved.

The rally radius of a headquarters unit is based on its command rating. That rating divided by 5 plus 1 is the number of squares within which a unit must be to be rallied. If the command radius is not evenly divisible by 5, there is a chance

the radius may be greater at times. Thus an HQ with a command rating of 8 will have a rally radius of 2 for 40% of the time, and a radius of 3 for the other 60%.



A unit can be the subject of as many rally attempts as its superior HQs within range have orders. Thus if C1 reported to C0 who had 2 orders, and then to B0 with 4, and then to A0 with 10, and C0 were within the radius of all of them it could be the subject of up to 13 attempts. (Each HQ would be able to attempt one less rally than the number of orders it had, since the last order would have to be left to expend for the rally itself if it succeeded.) You will notice that unlike other commands, headquarters units can affect subordinates of subordinates. It is not only the unit's formation HQ which can make the attempt.

The higher a unit's morale, the more likely its chance of rallying. The chance of a unit rallying is its morale divided by 10. Thus a unit with a morale of 4 will rally 40% of the time.

As discussed under suppression, the state of a unit is not actually changed until a combat pulse. Thus if a unit is successfully rallied during the Orders Phase, the number of suppression points it has will be halved (fractions rounded down). However, its state will not change. Thus, as an example, the number of suppression points a unit has may be less than its morale, but its state may still read Pinned.

A headquarters unit can make a rally attempt if its state is Dug-in, Positioned, Cautious Advance, Full Advance, Pinned, Buttoned or Loaded. It may not make the attempt if its state is Retreating, Routed,

Abandoned, Destroyed, Off-Map, or Exited.

Even when playing with the unlimited command rules it will cost an order to attempt a rally and an order for every unit successfully rallied. If an HQ does not have enough orders to expend for the successful rally of all units in its radius, it will rally the closest units first.

5. Cancelling an Order:

The final category of commands is the cancel command. Access the unit whose orders you wish cancelled and press the C key. This does not cost an order. All of the unit's existing fire and movement orders will be eliminated. The state of the unit will be set to Positioned unless the unit was Dug-in, in which case it will stay Dug-in. Cancellation can be done for all the units in a formation by entering All-Units Mode and then cancelling.

C. THE COMBAT PHASE:

Units attempt to carry out the combat and movement orders they have been given during the Combat Phase. The Combat Phase consists of 3 pulses. Which side goes first in a given pulse is randomly determined. In each pulse, fire and assault orders are carried out before movement orders. The Combat Phases will continue one after the other unless you press the O key during a Combat Phase. If you do so, an Orders Phase will occur after pulse 3 of the current Combat Phase.

Normally below the map you will see which pulse it is and the number of turns remaining in the game. This number includes the current turn. (You will also see some random numbers; this merely indicates that the computer is working and has not frozen.) When a fire or assault order occurs, the message display will change to give an indication of what is happening on the screen. You will see the type of weapon that is firing, the accuracy of the fire, and the range. If a non-vehicle is hit, the number of men killed will be listed; if a vehicle is hit, the damage to the vehicle will be listed.

During the Combat Phase, the following keys are active and if pressed will perform the following functions:

- O Interrupts with an Orders Phase after pulse 3.
- P Pauses execution until this key is pressed again.
- S Toggles the sound on and off.
- T Toggles between seeing the unit symbols and removing them to make the underlying terrain visible.
- Z Toggles between the tac map and the strat map.
- 1 Decreases the delay by 1 increment.
- 9 Increases the delay by 1 increment.

D. MISCELLANEOUS COMMANDS AND FUNCTIONS:

There are a few key commands from both the Map Menu and the Unit Menu which are not related to the giving of orders, but to movement between menus and to ease of play. In both menus, pressing the 0 (Zero) key removes the unit symbols from the map and reveals the terrain on the map. It does not remove smoke. Pressing this key is useful when determining sighting or when checking the kind of cover a unit is in.

As mentioned in the introduction, you can view the map from two different levels. These levels affect how much of the map appears on the screen at once. When playing with the tactical, or tac, map, the map will be 20 squares left to right and 10 squares top to bottom. When playing with the strategic, or strat map, the map will be 40 squares left to right and 20 squares top to bottom. There is no change to the map except for how much is displayed, and the fact that some unit symbols may look slightly different. You can play using either map.

To toggle back and forth between the different maps, press the Z key. This key can be pressed from either the Map Menu or the Unit Menu. This key is also active during the Combat Phase.

When you press the X key you will exit from the menu you are currently viewing. If you are in the Unit Menu, after press-

ing this key the Map Menu will appear. If you are in the Map Menu, after pressing this key you will exit your Orders Phase and either go to your opponent's Orders Phase or begin the Combat Phase.

If you are in the Unit Menu and wish to center the map on the cursor location, press the Y key. This key performs a different function from the Map Menu. To see how to get a unit in a stack, see the stacking rules, above.

Finally, if you are in the Map Menu you can press the / key. The score and the losses for both sides will be displayed and the scenario will end. This is a way to end a game where one side has been eliminated or has exited and there is still time left for the battle.

Banzai charges:

The units belonging to the Japanese player may enter banzai mode if Japanese losses are high. For each Japanese unit destroyed, 0 to 3 banzai points are accumulated. At the beginning of each turn, if the number of banzai points accumulated times a random number is greater than the number of surviving Japanese units, then all remaining Japanese units will enter banzai mode. Once a unit has entered this mode, it will only leave it by being destroyed. A non-artillery, non-transport unit in banzai mode will assume a Full Advance state and move towards its current target. If it does not have a current target, it will select the enemy unit with the lowest alphanumeric designation (i.e., most likely A0). It will remain in a Full Advance state no matter what its suppression level may be. At the beginning of each combat pulse, all suppression points on units in banzai mode are reduced to 0. Orders are accumulated normally.

It does not matter whether a Japanese unit is computer or human controlled; it will still enter banzai mode. If the unit is under human control, however, the Japanese player will be able to choose a new target for it during the Orders Phase.

Weather:

Each front has weather specific to itself. You can choose the weather for a non-campaign scenario. The weather for a campaign scenario is generated by the computer.

The rules assume clear weather; if the weather is other than clear it is considered bad and some aspect of the game may be different. The effects of the various bad weather conditions are set forth below. Note that the visibility effects apply only to the campaign game; bad weather does not decrease visibility in a non-campaign scenario. Thus if you choose a visibility of 9 and Dust, the visibility will remain at 9.

Rain: Visibility reduced to 40% of normal. Add 2.5 to the cost of entering all terrain features.

Snow: Visibility reduced to 60% of normal. Add 2.5 to the cost of entering terrain features except swamps. The movement cost for swamps becomes half of normal.

Dust: Visibility reduced to 50% of normal. Visibility may vary if a dust storm is in progress.

III. BUILDING A SCENARIO

Introduction:

You can also use TYPHOON OF STEEL as a construction set for building your own battles. These scenarios can be quickly generated for fun, or precisely detailed for accuracy. If you just wish to play a scenario other than the ones included, with only about a dozen keystrokes you can have the computer generate the map and the forces and within a few minutes you will be starting a new battle. On the other extreme, you can select the terrain for all 3600 squares of the map, choose the forces for both sides, custom tailor each unit, and place the units on the map where you wish. Anything in between is possible as well.

Building your own scenario is mostly a sequential process, consisting of building

the map, selecting the units, and deploying the units on the map. You will also be setting several variables along the way. Many of these variables determine the number of points your side gets. You then use these points to buy your units. Units are purchased by formation.

The build process begins on the Opening Menu. You must choose New Game, and whatever delay length you prefer. Of course, you must also choose to build a scenario.

Which side you choose the computer to play is important, for you can only choose the units for a non-computer player. (You can edit the computer's forces, however). You can, however, choose two-player, build the scenario, save it, and then recall it as a saved game. In this way you can have the computer play either side while you still have control over the choice of units.

You must also choose a handicap level on the Opening Menu. As mentioned in Getting Started, the level chosen may reduce the number of points a side receives. These reductions are:

Level 1: Axis reduced by 40%

Level 2: Axis reduced by 20%

Level 3: No effect

Level 4: Allied reduced by 20%

Level 5: Allied reduced by 40%

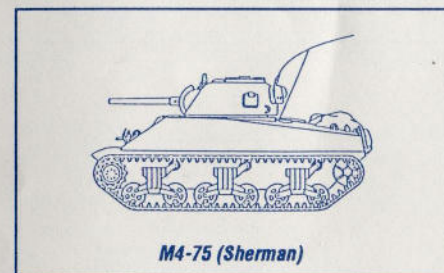
Once past the Opening Menu, you must decide whether to use the Limited Command Rules and whether to play a campaign game. See the main rules and the campaign rules respectively for the effects of answering these questions. (The campaign game question will only appear if the computer is playing at least 1, but not both, sides.)

Building a Map:

You will next enter the map build routines. You will first be given a chance to have the computer build a map (press **A**), to recall a previously saved map (press **R**), or to custom build a map yourself (press **B**).

If you choose to have the computer build you a map, you will be asked several questions to determine the approximate amount of various types of terrain on the map. You will be asked for density amounts for woods, swamp (sand in Africa), town, and rough. You can press any number key from 0 to 9 in response to these questions. Choosing 0 means you do not wish any of that type of terrain on the map; a 9 means you want a lot.

There are two things to note about the density questions. One is that the town density also determines the road density, and rough determines rough and depression squares. Secondly, choosing all 0 is not the same as having a blank map; the computer places hills on the map independent of the density questions. If you do not want these hills, you will have to build your own map or delete the hills in the next step.



Once you have answered the density question, the computer will build the map. You will then be placed into the Map Edit Menu, and can see and change the generated map. If you decided above to build your own map, you will be placed into the Map Edit Menu with a blank map showing.

The following keys are used on the Map Edit Menu:

1 to 8: Moves the cursor around the map.

C: Generates a series of building squares near the cursor position.

F: Generates a series of field squares near the cursor position. This is not an option in Africa.

H: Generates a hill near the cursor position. Note that the hill will not be built if other terrain blocks it. The shapes of the hills vary; keep pressing the key if

you don't want to remove other terrain.

Q: Quits the Map Edit Menu and moves on to unit selection.

R: Generates one or more roads from the cursor position to another road or the edge of the map.

S: Africa: generates a series of sand squares near the cursor position.

Non-Africa: Generates a series of swamp squares near the cursor position. NOTE: this option does not appear on the menu but it is available. Changes the terrain in the square the cursor is on. See the next paragraph for how this works.

U: Adds rough squares to the entire map.

V: Takes you to the Save Game Menu so that you can save the blank map. From the Save Game Menu, make sure to choose "Map Save". Important: do this last since you will be placed into the force selection routines when you return from the Save Game Menu.

W: Generates a series of woods squares around the cursor position.

Z: Toggles to the other map. When you first enter the Map Edit Menu you will see the strategic map.

To change a specific square to a specific type of terrain, hit the **T** key and then enter the number of the desired terrain. This number can be found on the Terrain Effects Chart. Note that the computer will never generate some of the terrain types, and that some types are unique to a specific front. Most of the types which the computer will not generate on its own (rivers, cliffs, escarpments, etc.) are not handled well by a computer player during play, and so are recommended for two-player use only.

Terrain types that have various directions (roads, rivers, etc.) have more than one symbol for the type. In each type, the ordering of symbols is as follows:

1st: Left to Right **4th:** Bottom to Right

2nd: Top to Bottom **5th:** Left to Top

3rd: Left to Bottom **6th:** Top to Right

Thus, since rivers start at position 42, that position is a left-right river and 43 is a top-bottom river.

Note also that for the Europe symbols, all coast type terrain is designed to go on

the left side of the screen, while for North Africa, *the Pacific, and Asia* the coasts are designed for the top of the screen.

Selecting Variables:

Pressing **9** quits the Map Edit Menu. Once you do so, you will be asked to set several variables. You must first choose a number between 1 and 9 for the visibility. The number you choose times 10 will be the maximum sighting range in squares for the scenario you build. You will also be asked for the weather condition; choosing a poor weather condition does not affect visibility when you build your own scenario, but it does affect movement (see the weather rules). Thus Dust has no real effect in a non-campaign scenario.

Next, you must choose a type of battle. The type of battle you select affects the following (see the Type Of Battle Chart for a summary):

- the length of the game;
- the base number of points used in choosing your forces;
- which missions are available to each side;
- the starting deployment line; and
- whether units can start the scenario Dug-in.

Once you have chosen the type of battle, you must choose the mission each side must achieve. The mission chosen determines the victory conditions for the scenario. See the Mission Chart for details.

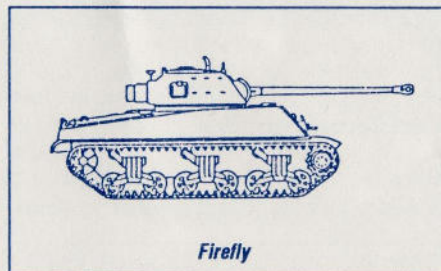
You will then make two more choices: the size of battle and the time period. The size of battle choice is a direct multiplier of the force size generated by the type of battle. For example, if you had selected a meeting engagement and a battle size of 2, you would have 60 times 2 or 120 points available.

The time period chosen for the battle affects the weapons available and the morale of the units. The earliest and latest periods of availability for units is listed in the Battle Manual. The time period

may also have an effect on the campaign game; see those rules. *While there are 10 numbered time periods in the game, the first 3 periods are not used:*

- | | |
|----------------|----------------|
| 1 - 1939 | 6 - early 1943 |
| 2 - 1940 | 7 - late 1943 |
| 3 - 1941 | 8 - early 1944 |
| 4 - early 1942 | 9 - late 1944 |
| 5 - late 1942 | 0 - 1945 |

You must next choose the size of the map you wish to play on. The map drawn in the map edit routines is 60 squares in width both horizontally (left to right) and vertically (top to bottom). The number you choose for map size is multiplied times 10. This number becomes the new vertical width of the map. Thus, should you choose a 4, the map will be 60 squares horizontally by 40 squares vertically. The lower 20 squares would not be used.



Choosing Your Forces:

You will next enter the force selection routines. (Note that if the Axis side is computer controlled, you will first see the message "Edit Forces Y/N". If you say yes you can edit the computer's forces. See below for how to edit.)

You will first be given a chance to have the computer choose your forces for you. If you say yes to autoselect, the computer will select a force appropriate to the type of mission chosen. You will be able to edit the force selected by the computer.

If you choose not to have your forces autoselected, you will need to choose the nationality for the side.

The nationalities available are:

Front	Time Period	Allies	Axis
Pacific	1942-1945	United States	Japan
Asia	1942-1945	British Commonwealth	Japan
Europe	1943-1945	United States	Germany

The European front includes both North Africa and Europe. The Americans are in North Africa until late 1943.

Once you have determined a nationality, you will be asked to choose the force quality. The quality chosen affects the number of purchase points available as follows:

Green:	Multiply Points by 1.2
Average & Random:	Multiply Points by 1.0
Veteran:	Multiply Points by 0.8
Elite:	Multiply Points by 0.6

Thus there are three modifiers to the base number of points determined by the type of battle: the handicap level, the size of the battle, and the force quality. Thus in a meeting engagement (60 points) of size 5, with a handicap of level 2 and veteran German troops, the German player would get 192 points. If the opposing force were a green American force, the American player would have 360 points.

Once the force quality is chosen, the type of force must be selected. The types of forces available varies by nationality, but the effect is to preclude you from choosing certain types of units. You will only be able to choose formations appropriate to the type of force selected. See the Briefing Manual for how the formations are organized. Certain nationalities do not have different force types.

You will then see the Formation Selection Menu. From this menu, you will be able to choose from large, small, or support formations. Defenders in an assault battle can also choose fortification units.

When you press a number key of 1 through 4, you will see a submenu listing the formations available. (To get back to the Formation Selection Menu without

making a choice, hit the **Return** key.) Each submenu lists the remaining points you have to spend, the number of units chosen so far, and the number of HQ's chosen so far. (Since each formation has its own HQ, this is also the number of formations in play.) You can spend no more than the number of points you have, and can have no more than 19 formations and 100 units. You will see that you have two units when you enter the first submenu; this is your battalion headquarters and its transportation unit. Note that besides the battalion HQ, transportation units must be purchased as a "pool" and parcelled out amongst your units as needed.

Each submenu will also show a series of lines, with each line listing a number, a formation type, a cost for the formation, and the number of units it contains. To choose a formation, just enter the number next to the formation and press **Return**. When you do so, the points remaining go down, and the formations and units go up.

NOTE: The current points left do not usually go down by the cost listed on the page. The costs listed there are for the most expensive formation of that type. There is a good chance in choosing many types that the most expensive formation will not be selected. (It may not even be available for that year.) Thus the number of points subtracted from the points remaining will likely be less than the point values shown next to a particular formation.

You should also be aware that if your points left are insufficient to purchase the whole formation, you will receive as much of the formation as you can afford.

When you wish to go to another submenu, press the **Return** key to get back to the Formation Selection Menu. When you use up all your points you will automatically leave the Formation Selection Menu; if you are finished but still have points left, hit the **5** key to exit.

A note on fortification units:

Fortification units do not appear in forces generated by the computer, and so appear only when purchased by defenders in an assault scenario. There are three types of fortifications: dragon's teeth, pillboxes, and minefields. Dragon's teeth are a terrain feature and function as a movement obstacle; see the Terrain Effects Chart for movement cost through them.

A pillbox functions as an immobile, well-armored unit. Its facing must be set during deployment and is only 90 degrees. It comes with its own crew and weapons; if you wish to change the weapons in it you must edit the pillbox. *There are two kinds of pillboxes available to the Japanese. A regular Japanese pillbox is the same as that which can be purchased by all nationalities as a fortification unit in an assault battle. The Japanese player can also purchase a light pillbox this way, or can buy a section of them as a small formation. The light pillbox has lighter weaponry than a regular pillbox; see the Briefing Manual for details.*

If a unit (friendly or enemy) moves over a mine square, that square may attack the unit. If it is a soft target, it is treated like HE fire. If it is a hard target, the attack may kill the tank, cause a track hit, or have no effect. If it has no effect, there is a chance that the unit has discovered a path through the minefield. In this case, the minefield will have no further effect in the game; otherwise the minefield will continue to attack. A unit is less likely to be hit and more likely to remove a mine if it is in a Cautious Advance state.

Editing:

You will now be able to edit your units. When you enter the edit routines, you can go through and view your units. Enter a formation number to see the units in each formation (To exit a screen press the **X** key.) To change some value of a unit, select the individual unit by using the unit's ID number. You will then be able to make changes to the unit.

The following can be changed:

- The type of unit. A truck can be changed to a tank or a rifle squad;
- The weapon in each of the unit's 4 weapon positions and the amount of ammo for each;
- The unit's skill level;
- Morale of an HQ unit; and
- The command rating for a head quarters unit.

The old values are listed at the top of the screen or to the left of the question. The weapon and unit types are listed in the Briefing Manual.

Hitting the **Return** key allows you to move on without making a change. The numbers to be entered for the unit types and weapon types are found on the Weapons Chart. The maximum skill that can be entered is 10; the maximum command rating is 40; the maximum morale is 9.

When you are done editing a particular formation, press the **X** key. When you are done with all editing, press the **X** to move on to deployment.

Deploying Your Units:

Both sides will have a chance to deploy their troops, the Axis first followed by the Allies. When you first begin a new deployment, your units will be on the upper rows on your side of the map. If there are a lot of units, they may be deployed in more than one column.

You will not be able to deploy any units on the very east or west edges of the map. Doing so would cause them to exit in the first pulse and so is prohibited. In addition, check the Type of Battle Chart for suggested start lines by mission. (These lines are mandatory in the campaign game.)

You will also be able to redeploy units after recalling a saved game, even if that game was saved in the middle of a battle. Such a modification follows the normal deployment routines listed here.

There are two main menus in deployment, and they are very similar to the Map Menu and Unit Menu of the Orders Phase. In fact, all the keys function the same except for the following:

Map Menu:

- 9:** Shows the mission of the force.
- Ø:** Tells the computer to deploy your troops for you. If you choose to autodeploy, you can still change the location of your units.
- ***: In assault battles, places all units on your side into a Dug-in state.
- A to S:** Does not automatically move the cursor to the unit chosen. Press the **L** key to move the cursor over the unit.
- W:** Besides showing you the objective, allows you to change it. You may do so by moving the cursor to the desired location and pressing the **O** key.
- /:** If you have mines or dragon's teeth, you can deploy them by pressing the **/** followed by one other key:
 - A:** Add minefield to square.
 - S:** Subtract minefield.
 - P:** Place dragon's teeth in square.
 - R:** Remove dragon's teeth (you must also specify the type of terrain to be put in its place.)
 - X:** Exits the subroutine. Mine icons will disappear.

Unit Menu:

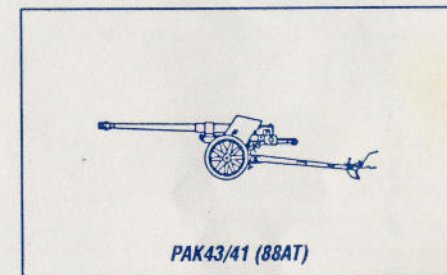
- M:** Moves unit to cursor position. This is how you self-deploy your units. Remember that the type of battle places restrictions on where you can deploy your troops. See the column called Start Line on the Type of Battle Chart. Note that for non-Campaign scenarios the lines given are suggestions only, and that you can deploy your units anywhere on the map. This gives you flexibility in designing your own scenarios.
- S:** Only putting units in (and out if need be) of the Dug-in state is allowed. Remember that only units in an assault battle can be Dug-in.

When both sides have finished deploying, you will be able to save the deployed scenario. Upon exiting the Save Game Menu you will be placed into the first Orders Phase of a new game.

IV. PLAYING A CAMPAIGN GAME

Introduction:

Besides playing individual scenarios of PANZER STRIKE!, you can also play a campaign game. In a campaign game, you will initially purchase a force. You will then use this force to fight a series of battles throughout the war. Between each battle you will have the opportunity to replace units lost in combat or to upgrade your equipment as better weapons become available. The battles you will fight will be generated by the computer, and you will have an overall score for the campaign as well as for each battle.

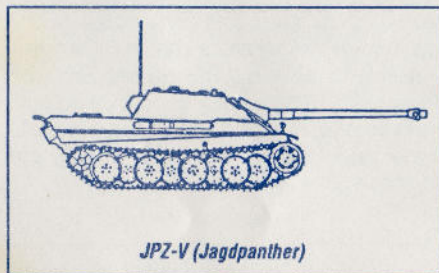


Starting a campaign game:

On the opening menu, choose to Build a Scenario and choose either Axis Computer (if you wish to play the Allies) or Allied Computer (if you wish to play the Axis). There is no campaign game option for either two human or two computer players or for the historical scenarios. *In addition, only certain fronts are available for each nationality, as follows: Germany (Europe) and Japan (Asia and Pacific) for the Axis and the the United States (Europe and Pacific) or British Commonwealth (Asia) for the Allies.*

Once past the opening menu, decide whether to use the limited command rules. The next question will allow you to start a campaign game. Choose a name for your force and the year you wish to start with. The year chosen determines the nationality of your opponent and the type of equipment you get at the beginning of the game.

You will then choose your force. This process is very similar to choosing your force for a scenario, but you do not choose a nationality nor can you choose support troops or fortifications. You begin a campaign game by choosing a core force which costs no more than **250 points in Europe or 80 points in Asia and the Pacific**. The organizational structure of this core force will remain with your troops for the duration of the campaign game; the weapons themselves can be changed between battles (see below). Thus if you choose a company which consists of 3 platoons at the beginning of the campaign, you will be able to upgrade all of the units to different types but you will always have a force consisting of 3 platoons.



JPZ-V (Jagdpanther)

The size of the force you will encounter is relative to your strength. Thus you should start an early war campaign game with a force worth between 75 and 125 points. **(Of course, in the Pacific and Asia you will only have 80 points to use in any case.)** Do not overbuild. Not only does this allow you to ease into the campaign game, but it allows you to have room for your force to grow as better weapons become available. (You can also give yourself room to grow by not replacing all units in a force when they are destroyed, although the computer will replace some of them.)

Playing a Campaign Scenario:

The campaign game consists of several scenarios generated by the computer. At the beginning of each you will see a page listing the type of battle, your mission, the date, the weather, the visibility, and location. The location is for historical interest and affects the terrain on the

map. The other items have the same effects as discussed in the Playing a Game section. Note that in a meeting engagement there is a chance that your force may encounter a force twice its size. The mission for each scenario is assigned randomly, but if you won the last decisively the chances are greater that you will be the attacker.

Before starting a battle, you will be able to choose support units appropriate to the type of battle being fought. You will get a certain percentage of your force size to spend for these support troops. The number of points you get for this purpose **in Europe** is 1/6 of your force size (1/3 if an assault battle) plus 10 points. **Double these values before adding the 10 points for the Pacific and Asia.** These forces are used only for one battle, and then disappear; they are, in effect, rented for the battle. The type of units available will vary by the type of battle.

Play of a campaign scenario is the same as with any other scenario with very few exceptions. You cannot change the objective area. If you wish to end a scenario before the standard time period is up, hit the / key. This will give you your score and then end the scenario. Remember also that if you wish to finish a scenario quickly you can use the * key from the map menu to put all your troops under computer control.

Victory:

Victory in the scenarios is calculated normally. There are also campaign points, which are the scenario points plus a number of points for the size of your victory. You will get 500 points if you earned a decisive victory, and 100 points for a marginal victory. These points are added to the points earned in the scenario itself. (Remember that whoever holds the field recovers half of its Abandoned units.) Only your points are accumulated.

Refitting Your Units:

At the end of each battle, you will see a list of units lost by category for that battle. You will be given a chance to replace and

upgrade your forces at that time by saying yes to the question which asks if you wish to view your force or change equipment. **You will be able to upgrade/replace your units to a value of 300 in Europe and 100 in the Pacific and Asia.**

The screen will look very much like the edit units screen from the scenarios, but the number of men, the skill rating, and the morale of the units are listed instead. The force value is listed at the top of the screen as well as the current month and delay. In addition, the only value that you can change is the type of the unit. See the Briefing Manual for the unit numbers.

The computer will automatically replace destroyed units up to 10% of the force value, and will automatically replace all HQ units even above the 10%. (This is done in alphanumeric order.) Any remaining points may be spent for upgrades. The computer will also double the number of men in all infantry units with less than 5 men left, but the skill rating of the unit will be reduced by 1. This is done at no cost.

The number of months that will elapse before the next battle will occur is equal to the ten times the cost of replacing or upgrading your units divided by the force value. (This includes the amounts that the computer used to replace units.) Drop any resulting fractions. The months of delay are also listed at the top of the screen. Whenever a unit changes its type or replaces its equipment it will lose skill.

The morale of your units will also change depending on the size of your last victory or loss. If you won a decisive victory, each of your units will have a 50% chance of gaining 1 morale point and a 50% chance of gaining 2 points. The same chances apply if your opponent won a decisive, but your units will lose 1 or 2 points. If you won a marginal victory, all of your units will gain 1 morale point; if your opponent won a marginal victory, all of your units will lose 1 point. Morale points do not change if the battle was a draw.

Changing Theatre Disks:

After seeing the score for a scenario, you will be given the option to switch your force to another theatre. To switch, put in a different theatre disk at the prompt. **Because the size of your force in Europe can be much greater than that allowed for the Pacific, you will get an error message should you attempt to transfer an American force from Europe to the Pacific if the value of that force is more than 100.** If you go to another theatre before it is active, you will not fight a battle until the first month that it is active.

V. FORMULAS

INTRODUCTION:

As mentioned in the Introduction to the rules, this section sets forth some of the mathematical formulas that the computer uses in playing the game. See the main text of the rules for a more thorough explanation of how each formula works and for restrictions which may not be shown in this section.

NOTATION USED:

Whenever the notation Rnd(x) is given, it means that a random number between 0 and x should be used. Multiplication is denoted by an asterisk (*), and division by a slash (/). The abbreviation CR stands for the command rating of a headquarters unit.

COMMAND CONTROL RADIUS:

If unit does not have a radio: Unit must be within 5 squares of HQ to be in command control.

If unit does have a radio: Unit is in command control if $Rnd(1) * \text{the CR of the HQ} \geq 2$. Thus if a unit's HQ has a command rating of 10, there will be a 20% chance that the unit will be out of command control. If the CR were 8, the chance would be 25%.

RALLY RADIUS AND RALLY CHECK:

A unit will be eligible to rally if it is within the following number of squares of the superior HQ attempting the rally:

$$\text{Radius} = (\text{CR}/5) + 1 + \text{Rnd}(1)$$

A unit will rally if within rally radius, if its suppression points >= its morale and if its morale >= Rnd(10).

SILHOUETTE MODIFIERS:

If the range to the target unit is >= 6 squares,

Modifier = size of target / 4.

If the range to the target unit is < 6 squares,

Modifier = (size of target + 6 - range) / (4 + 6 - range).

SKILL CHECK:

Check successful if skill rating >= Rnd(10).

FIRST SHOT CHECK:

Check successful if first shot rating >= 50 / Rnd(10).

SUMMARY OF INDIRECT BOMBARDMENT FIRE ACCURACY AND DELAYS:

Type of fire	Max scatter
First round, no spotter, or rocket:	9
Spotted but spotter fails accuracy check:	4
Spotted and spotter makes accuracy check:	2

There is no first round accuracy penalty for self spotters or for direct fire bombardment.

Modifiers:

Firing unit has LOS to target:	scatter * 0.5
Range from firing unit to target < 30:	scatter * 0.5
Unit firing HE from off-map:	scatter * 0.5

Administrative Delays:

Self spotter:	1 pulse delay
Spotter is firing unit's formation HQ:	3 pulse delay
Spotter is battalion HQ:	6 pulse delay
Spotter is another HQ:	9 pulse delay

POINT FIRE ACCURACY AND MODIFIERS:

Abbreviations used:

A = Accuracy rating of gun as given on Weapons Page.

MR = Maximum range of gun as given on Weapons Page.

R = Range to target.

RA = Ranged accuracy of gun.

If $R \leq A$, then $RA = 50 + 48 * (A - R) / A$.

If $R > A$, then $RA = 50 - 48 * (R - A) / (MR - A)$.

The following modifiers are given in terms of positive and negative shifts unless otherwise noted. When modifying the ranged accuracy of a gun, each positive shift = $RA * 1.42$, and each negative shift = $RA * 0.71$. Thus two negative shifts = $RA * 0.71 * 0.71$, which about halves RA.

Modifiers for hard targets:

Firing unit fired last pulse at same target:	+1
Firing unit in Cautious Advance state:	-3
Firing unit in Full Advance state:	-5
Firing unit fails a skill check:	-2
Firing unit Pinned or Butted:	-2
Firing unit has at least one suppression point:	-2
Target unit moving in any state:	-1
Target unit in cover terrain:	-1
Target unit non-adjacent and Retreating:	-6
Target unit silhouette size:	RA * silhouette modifier

Modifiers for soft targets:

Firing unit moving in any state:	-2
Firing unit Pinned or Butted:	-2
Firing unit fails a skill check:	-2
Target unit advancing:	+2
Target unit is artillery:	+2
Target unit is Positioned in soft cover:	-2
Target unit is Positioned in hard cover:	-4
Target unit is Dug-in:	-2
Target unit is Dug-in in hard cover:	-3
Target fired on by small arms and is in hard cover/Dug-in:	-1
Target unit Retreating and not in firer's square:	-4
Target unit Routing and not in firer's square:	-6
Target unit is Pinned:	-2

If $RA > 99$ then $RA = 99$.

(Note that the modifiers for soft targets are applied differently than those for hard targets. Please see below or the main rules for details. *In addition, no defensive benefits apply to units attacked by flamethrowers or demo charges.*)

ARMOR PENETRATION:

P = Penetration rating of gun.

R = Range to target.

MR = Maximum range of weapon.

SS = Size of shell fired.

PD = Penetration depth.

If HE shell was fired,

$PD = 2 * SS * Rnd(1)$.

If AP shell was fired,

$PD = SS + Rnd(1) * (P/2 + (P/2) * (MR - R) / MR)$

Vehicle Hit Locations:

Point Fire: To determine the location that a vehicle is hit, a random number between 1 and 100 is generated. If the firing unit is at least 2 levels higher than the target, add 10 to the number. If the target is hull down, all numbers less than 51 have no effect. The following list determines where the hit occurs:

Range of Number	Location
1 - 15	Track
16 - 70	Hull
71 - 100	Turret/Upper Hull
101 - 110	Top

Indirect Bombardment Fire: There are 6 possible hit locations: track, front hull, side hull, front turret/upper hull, side turret/upper hull, and top. Each area is as likely as the next to be hit; i.e., a random integer between 1 and 6 is generated to determine the location.

Penetration:

If the depth of penetration >= the thickness of the armor at the location hit, then the shell penetrates.

EFFECTS OF PENETRATION:

The target vehicle is automatically destroyed if the shell size of the firing weapon * Rnd(1) > target size * 2 * Rnd(1). If the unit survives this, it is determined which aspect (front hull, side hull, front turret/upper hull, side turret/upper hull, top or track) of the vehicle has been penetrated.

If it is the track that is penetrated, the unit's maximum speed goes to 0.

If it is the front hull, the hull crew compartment is hit.

If it is the side hull, there is a 50% chance that the max speed will go to 0, and a 50% chance that the hull crew compartment is hit.

If it is the front or side turret/upper hull, the turret/upper hull crew compartment is hit.

If it is the top, there is a 50% chance that the max speed will go to 0, and a 50% chance that the turret/upper hull crew compartment is hit.

When a crew compartment is hit, there is a 75% chance that each gun in that section is destroyed. There is also a 90% chance that a crewmember is killed; if that 90% is made, check for the next crewmember. Continue to do so until a crewmember is not killed, or the whole crew is killed, which destroys the vehicle.

On any penetration, a hard target is destroyed if the shell size of the firing unit * Rnd(1) > target size * 2 * Rnd(1).

DAMAGE BY HE FIRE:

Chance of hitting unit:

In determining damage by HE fire, first determine the chance that the unit or units in the square are hit. This chance depends on the type of target the unit is:

If the primary target: chance = 100%.

If a non-primary soft target: chance = 10 * IA of the gun.

If a non-primary, open topped hard target: chance = 2 * shell size.

If a non-primary, non-open topped hard target: chance = 1 * shell size.

If a hard target is hit, go through the armor penetration routines above. For a soft target, modify the chance by the soft target modifiers given above. This modified number is used below as the ranged accuracy (RA) in determining losses.

Damage to Soft Targets:

First determine the number of men killed. Use the following formula. RA stands for the modified ranged accuracy of a gun using point fire (described above) or the chance of hitting the square if not point fire. IA stands for the weapon's infantry attack value. (Note that the infantry attack value of a squad is the IA of the weapon multiplied by the

number of men in the squad.)

Percentage killed = $IA * Rnd(1) * RA / 200 + Rnd(1)$.

For each 100% killed, one man is lost. If there is a remainder, that is the chance that another man is lost. Thus if the result were 120%, one man would be killed and there would be a 20% chance of another being killed. *For weapons with a shell size greater than 1 (i.e., non-small arms), there is also a chance that an additional kill will be inflicted by fire:*

*If $RA + 100 > 200 * Rnd(1)$ then add an additional kill.*

Once the number of men killed is determined, and if the unit is a gun unit, the unit may be completely destroyed. This

occurs if the $Rnd(1) * 40 <$ the shell size of the firing unit * the number of men killed.

INFANTRY ASSAULTS AGAINST HARD TARGETS:

KR = Kill Rating.

KR is the number of men in a squad or the accuracy of a special assault weapon.

Modifiers:

Target unit is soft or open topped +2

Target is stationary +2

Target in a Full Advance state -2

Assaulting unit fails skill check -2

If $KR * Rnd(1) > 6$ then target destroyed.

If $KR * Rnd(1) > 3$ then max speed of target goes to 0.

CHARTS AND TABLES

FORCE MODIFIERS

Quality Modifiers	Handicap Level Modifiers:
Green:	1.2 Level 1: Axis reduced by 40%
Average:	1.0 Level2: Axis reduced by 20%
Veteran:	0.8 Level 3: No effect
Elite:	0.6 Level 4: Allied reduced by 20%
	Level 5: Allied reduced by 40%

These numbers are used as multipliers in figuring the number of strength points available for a scenario. The Handicap Level Modifiers do not apply in a campaign scenario.

TRANSPORT COSTS TABLE

Unit	Cost
Infantry	1*
Medium MG	2
Heavy MG	4
Light Mortar	3
Heavy Mortar	5
AT Gun	10
Light AA (50mm & Less)	10
Heavy AA (51mm & More)	15
Light How (95mm & Less)	10
Heavy How (96mm & More)	15
Light IG (95mm & Less)	10
Heavy IG (96mm & More)	15

*All costs are per unit except for infantry, which is per man.

Transport Capacities:

Primemovers, Heavy Halftracks, and Heavy Trucks: 15 points.
All others: 10 points. Artillery can only be carried by Primemovers, Halftracks, and Trucks.

VICTORY LEVELS

Marginal: If one side has at least twice the number of points as the other.

Decisive: If one side has at least four times the number of points as the other.

MISSION CHART

Mission	Unit Mult.	Exit Pts.	Obj. Clear
Clear Obj.	1/1	1/1	100/0
Bypass	1/2	10/1	0/0
Engage	2/2	1/1	0/0
Delay	1/2	4/1	0/0
Hold	1/1	1/1	0/100

Unit multiple is the factor which you should multiply the unit cost by to determine the victory points awarded. Exit points are the number of points (not a multiple) awarded per unit for exiting the unit off the map.

Unit multiples are listed as the multiple for defending units killed/multiple for attacking units killed.

Exit points are listed as points for attacking units exited/points for defending units exited.

Obj. Clear is the number of points (not a multiple) that the attacking side/defending side gets for having the objective area free of enemy units (Clear Objective) or of defending units (Hold Objective).

All unit multipliers are cumulative; as an example, if the attacker has a bypass mission and the defender a delay, the attacker will get 40 points for exiting a unit.

VISIBILITY RANGE MODIFIERS

These number are the number of times that the visibility range in squares is multiplied by 0.71 (for negative shifts) or 1.42 (for positive shifts).

Spotter: **Shifts:**

Buttoned vehicle	-2
Fails skill check	-2
Higher than target	+1
Pulses 1 and 2	-2

Target:

Stationary	-2
Hull down, dug-in, or in cover	-2
Silhouette	Multiply range size / 4

COMMANDS SUMMARY

Please consult the rules if more detail is desired.

MAP MENU:

- (1-8) Move cursor.
- (9) Display current score.
- (0) View terrain only. All units are cleared from the screen so that the underlying terrain can be seen.
- (A-S) Select unit. Press the formation letter followed by the unit number. That unit will become the current unit and you will be placed in the Unit Menu.
- (U) Get unit at cursor position. The unit at the cursor location will become the current unit and you will be placed in the Unit Menu.
- (V) View. All squares that can be seen from the cursor location will be inversed.
- (W) View mission objective. All squares in the mission objective area will be inversed.
- (X) Exit Orders Phase.
- (Y) Inspect stack. The type of the next unit down in the stack will appear at the bottom of the Map Menu. It can then be accessed with the U key.
- (Z) Toggle maps. The map changes to whichever (strategic or tactical) is not in use.
- (/) The score is displayed and the game will end.
- (*) Places all units on a side under computer control. In Deployment, this key Digs-in all units.

UNIT MENU:

- (1-8) Move cursor.
- (0) View terrain only. All units are cleared from the screen so that the underlying terrain can be seen.
- (A) Go into All-Units mode. If the formation HQ is not the current unit, it will become the current unit. You will be able to issue certain orders to the whole formation.
- (B)** Bombard. The cursor location is the target square; the current unit is the spotter. Those units available to bombard and the administrative delay before firing starts will be listed.
- (C)@ Cancel orders. All movement and bombardment orders assigned to the current unit are cancelled.
- (D)*@ Debark passenger(s). If the current unit is a vehicle then it will unload all of its passengers; if the current unit is a passenger, then only it will unload.
- (E)* Embark passenger. When given to a vehicle, you will be asked for the formation and number of a unit to be loaded onto the vehicle.
- (F)*@ Change unit's facing. Use the directions of the movement compass.
- (G)** Rally. When an HQ unit is ordered to rally, it will attempt to halve the suppression value of all subordinate units within its rally radius. It costs one order to press the rally key, and one order for each unit rallied.
- (H) Find units HQ. The next superior headquarters unit becomes the current unit.
- (I)*** Inspect enemy units. All enemy units that can be seen by the current unit will be shown sequentially. The current unit can choose one of them as a target by pressing the T key when the desired enemy unit is accessed. It costs one order to designate a target.
- (J)@ Toggle computer control. Places a formation under computer control or removes it from that control if already under computer control.
- (K)* Infantry smoke. An infantry unit can be ordered to lay smoke in an adjacent square.
- (L) Locate. Moves the cursor over the current unit.
- (M)*@ Move unit. The unit will be ordered to move to the cursor location. An advance state will have to be chosen for it.
- (N) Next unit. The next unit in alphanumeric order will become the current unit.
- (O) Display units movement objective(s). Moves the cursor to the location of the movement objectives assigned to the unit. Its state will also be shown.

- (P) List units passengers. All units loaded aboard the current unit are listed.
- (R)*@ Range. The maximum firing range at which the current unit will automatically select targets can be changed.
- (S)*@ State. The state of the current unit can be changed.
- (T) Show units target.
- (U)* Infantry assault. The current infantry unit will assault the enemy at the cursor location.
- (V) View. All squares that the current unit can see will be inversed.
- (W) Weapons Page. The current units Weapons Page will be displayed.
- (X) Exit Unit Menu. Return to the Map Menu.
- (Y) Center screen on unit.
- (Z) Toggle maps. The map changes to whichever (strategic or tactical) is not in use.

Notes:

@ = Can be done in All-Units mode.

* = Costs an order.

** = May cost more than one order.

*** = Costs an order if an enemy unit is targeted during an inspection.

KEYS ACTIVE DURING COMBAT PHASE

- (1) Decrease message delay 1 increment.
- (9) Increase message delay 1 increment.
- (O) Orders. Go to an Orders Phase at the end of the current Combat Phase.
- (P) Toggle pause. When first hit, will stop the action; when hit again, will restart it.
- (S) Toggle sound. Turns sound on and off.
- (T) View terrain only. All units are cleared from the screen so that the underlying terrain can be seen.
- (Z) Toggle maps. The map changes to whichever (strategic or tactical) is not in use.

TYPE OF BATTLE CHART

Format = Axis:Allied

Type	Battle Dur.	Purchase Points	Mission Choices	Start Line	Start Dug-in
Axis Assault	60	100:40	Att:Def	14:30	Yes:Yes
Axis Pursuit	30	80:40	Att:Def	14:45	No:No
Meeting Engmt	30	60:60	Att:Att	14:45	No:No
Allied Pursuit	30	40:80	Def:Att	14:45	No:No
Allied Assault	60	40:100	Def:Att	30:45	Yes:Yes

Dur. is the duration of scenario in game turns (minutes).

Purchase Points is the base number of points available per side. To get the final number you must multiply the base number by the handicap level modifier, the size of the battle, and force quality modifier. *The number of Purchase Points listed are the amount available in Europe. Halve these numbers for the Pacific and Asia.*

Mission Choices shows which list the side can choose from for its mission. Att = Attacker; Def = Defender.

Start line is the highest (Axis) or lowest (Allied) x coordinate that a square should have for a unit to be deployed in it. For scenarios, these are only suggested numbers; you can deploy anywhere on the map. For campaign battles, however, these lines are mandatory, and you will not be able to set up past these lines. Note that for Western Europe the start lines should be read as Allied:Axis since the Axis forces come from the east.

Start dug-in indicates whether the units of that side can start the scenario in a dug-in state.

SUPPRESSION POINTS TABLE

Condition of Checking Unit	Suppression Pts. Gained or Lost per Turn
Immediately after pulse 3 of the Combat Phase:	
Unit in soft cover* and sighted by enemy	-1
Unit in soft cover* and not sighted by enemy	-3
Unit in hard cover*/Dug-in and sighted	-2
Unit in hard cover*/Dug-in and not sighted	-4
Unit out of command control	+1
Unit within 6 squares of friendly routed unit(s)**	+1 per unit
Unit within 6 of friendly aband./dest. unit(s)	+1 per unit
Unit is immobilized vehicle	+1
No friendly unit(s) within 6 squares of unit	+1
Unit is in a square that is on fire	+1
Unit has required number of suppression pts. and is within 6 of friendly unit(s) with good state***	-1 per unit
Automatic loss	-1
During fire portion of Combat Phase:	
Unit has 0 suppression and is target of fire	+1
Unit within 3 of friendly unit(s) when destroyed	+4 per unit
Unit within 6 of friendly unit(s) when destroyed	+2 per unit
Soft target unit's square hit by sighted enemy	+1 per unit
Soft target's square hit by non-sighted enemy	+3 per unit
Hard target unit hit by shell of sighted enemy	+1 per unit
Hard target hit by shell of non-sighted enemy	+3 per unit
Unit destroys enemy unit(s)	-1 per unit
A number of men in the unit are killed	+3 per man
During each pulse of the Combat Phase:	
Unit cannot see any enemy units	-1
During the Orders Phase:	
Unit successfully rallies	Halve supp. pts.

*Hard cover is stone buildings; soft cover is any other cover square. **Routed Infantry units do not have an effect on tank units. ***A unit is in a good state if the current number of its suppression points is less than its morale. For a unit to benefit from friendly units in a good state, a random number is determined (5+ 10 * Rnd (1)); if the checking unit has more than that number of suppression points, it will benefit. An infantry type unit goes through an additional step. Subtract the number of men in the unit from 14. If the unit's suppression level is greater than or equal to the result, the unit will benefit.

SUPPRESSION EFFECTS TABLE

Supp. pts.> = 2 & visible to enemy:	Unit may only move in Cautious Advance state
Supp. pts.> = morale:	Non-vehicle unit is Pinned; vehicle unit is Buttoned. Not applicable if unit is Dug-in.
Supp. pts.> = 2 times morale:	<i>Non-Japanese unit Retreats.</i> <i>Japanese unit Heavily Suppressed.</i>
Supp. pts.> = 3 times morale:	<i>Non-Japanese unit Routs.</i> <i>Japanese unit Heavily Suppressed.</i>

Note that a unit's morale may drop if its formation HQ is killed. A truck unit is considered to have a morale of two regardless of what appears on its weapons page.

CREDITS

Game Design and Programming
Gary Grigsby

Game Development
Dick Vohlers and Graeme Bayless

Rules
Dick Vohlers

Historical Research
Gunter Meyer

Playtesters
Graeme Bayless, Robert Daly, John Bruning, James Kucera, George MacDonald, Mike Musser, Bill Barr, Bill Alpert, Gunter Meyer, Rick Colby, Rick Spinelli, Steve Virostek.

Computer Graphics
Tom Wahl

Special Computer Graphics Tools
Keith Brors

Customized Disk Operating System
(Apple Version)
Roland Gustafsson

Art and Graphic Design
Louis Hsu Sackow, David Boudreau, Pete Gascoyne

Desktop Publishing
David Boudreau

Printing
A&a Printers and Lithographers