SPORTSware's
WARGAME DESIGNER II
FOR THE TANDY COLOR COMPUTER 3 128 K DISK SYSTEM

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BY

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WARGAME DESIGNER II, Version 2.20 Program Manual
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WARGAME DESIGNER II

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Congratulations! You have just purchased the finest military, science fiction and fantasy simulator available for the TANDY Color Computer 3.

**With WARGAME DESIGNER II (WGDI) YOU CAN:**
- Design your own graphic unit and terrain icons.
- Create battlefields using icons you create, or the ones provided on disk.
- Give each unit its own unique set of attributes.
- Enjoy endless hours of fun playing games YOU designed.

**WARGAME DESIGNER II** requires no programming knowledge. Designing games is easy. All design modules are selected from the Main Menu. Then, each module has all of its functions shown in its own menus. Just click on the function you want! To be sure you can start enjoying WGDI right away, 4 ready to play games are provided along with four complete sets of graphic icons.

**System requirements**

- TANDY Color Computer 3 with at least 128K memory
- 1 or more disk drives
- RGB or composite monitor or TV
  (For the fastest operation, 512K with a Ramdisk is recommended)

**Before you begin**

Before you begin using WGDI please make a backup copy. WGDI is not copy protected. Use your copy to play or create scenarios. Keep your original in a safe place and only use it for making copies for your personal use. You will need a copy for each scenario you create or modify. Do not use the original disk. All changes you make to a scenario will replace the information already on the disk.

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The WGDII system consists of 4 separate modules, ICON DESIGN, MAP DESIGN, UNIT ATTRIBUTES and GAME PLAY.

**ICON DESIGN**

The ICON DESIGN module is your graphics editor. Here is where you can do things like, modify the existing icons for the units and terrain features, change the colors used in all of the modules, create new icons and change the effects terrain features have on the units. Here's your chance to exercise your artistic talent.

**MAP DESIGN**

In this module you can modify the gameboard, or create a new one. All of the terrain icons are displayed at the bottom of the screen. You just pick them up and put them where you want them. Creating new maps is easy. Try duplicating a map from one of your favorite boardgames if you have one.

**UNIT ATTRIBUTES**

This module makes it easy to change all of the attributes of each unit. Here you can change the unit's name, icon, strength, movement rate, firing range, turn of entry into the game and aggression factor of the computer's forces.

**GAME PLAY**

This is what the whole system is about. We suggest that before you try to create a scenario of your own you play the one provided on the disk. Creating a well balanced game is not easy. You may discover that you've made a game that is too easy or one that is impossible to win. However, editing a finished game is simple using the modules above and that's part of the fun.

**WHAT KIND OF GAMES CAN I MAKE?**

With WGDII you can make conflict simulations. It is ideal for war games, science fiction settings and fantasy combat. Units can represent individual characters or entire armies. WGDII will help you create one player simulations that are easy to play using the keyboard or a joystick plugged into the right joystick port. You concentrate on the strategy. The computer will take care of all that paperwork that makes boardgames such a chore.

The computer controlled forces can be timid or suicidal in their strategy. You decide which by assigning each computer controlled unit an aggression factor. Each module is explained in detail in the following pages.
Your graphics editor. From the main menu, highlight the words (ICON DESIGN) and press the joystick button. The screen will go blank until the module is loaded. A new menu will be displayed to the left of center on the screen. In about the center of the screen is a small box. This is the actual size the icons in the game appear. To the right of this box is a box 5 times actual size. This is the editing box. At the bottom of the screen are all 66 icons used in the game. You can pick them up and place them in the edit box, change them and put them back. All features of the editor are explained below.

All functions are selected by highlighting them and pressing the joystick button.

**DRAW**

After selecting draw from the menu a cursor will appear in the edit box. When you move the cursor (with the joystick or keyboard) each space it enters will be colored with the currently selected color. To choose a different function, press the button (or the ENTER key if you are using the keyboard). See Appendix A for keyboard controls. Pressing the button will leave the cursor in its current location and highlight the first menu item.

**PEN UP**

The pen always starts in the PEN UP position in the center of the edit box. You may move to any spot in the box without changing the icon with the PEN UP.

**PEN DOWN**

To put the PEN DOWN just press the SPACE BAR or BUTTON 2 on your joystick (if you have a 2 button joystick). Any spot you enter will change to the currently selected color. To raise the pen again just press the BAR or BUTTON 2 again. To return to the menu, press ENTER or BUTTON 1.

**CHANGE COLOR**

To change the current draw color, select this option from the menu. A small line cursor appears under the first of 16 color boxes in the center of the screen. Move the cursor under the color you want and press the button.

**ERASE**

Selecting ERASE from the menu will cause the edit box to be filled with the color in use. Any artwork in the box will be erased. This is a fast way to do the background color for icons instead of using DRAW to fill the box.

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EDIT ICON

Choose this function to pick up an icon from the bottom of the screen and place it in the edit box. A small line cursor appears under the first icon in the top row. Move the cursor up, down, left or right until it is under the icon you wish to edit. Then press the button. The icon will be duplicated in the design box and the small box to its left. The original icon is still in the box you got it from. Do not hesitate to edit the one in the edit box. This does not affect the one at the bottom of the screen. If you make a mistake, you can ERASE it and start over.

SAVE ICON

Choose this function to place an icon you have drawn or edited in one of the rows at the screen bottom.

SAVE SET

Select SAVE SET to save the entire icon set to disk. Saving the set will replace the set already on the disk with the set on the screen. When you selected ICON DESIGN from the main menu, the icon set on the disk was loaded will the module.

PALETTE

With this function, you can choose to use any of the 64 colors available to the COCO 3. Place the cursor under the color box you wish to change. Press the button. Then use the stick to cycle through the 64 colors until you find the one you want. Press the button again and that color will replace the one in the box that you chose. You will then be asked if you want to SAVE the new color set to disk. RESTORE the original color set or just CONTINUE editing. You must respond by pressing the desired letter on the keyboard.

FLIP

Selecting FLIP from the menu will cause the icon in the edit box to be flipped from left to right. To easily create two opposing forces, just design the icons for the first army facing either left or right. Then put the icons in the design box one at a time and flip them. Then save the flipped version in the appropriate box for the other army.

MODIFIERS

After you finish the artwork on your icon set you need to determine how each terrain feature you created affects combat and movement of the units.

Select MODIFIERS on the menu. The terrain modifiers menu which looks like this;

MOVEMENT COST
COMBAT MODIFIERS
EXIT

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MOVEMENT COST

Each unit has a movement factor which helps determine how far it can move each game turn. Each terrain feature has a cost to a unit to pass through it. This cost is deducted from the units movement factor as the unit enters the terrain. When a unit has spent all of its factors, it can move no further that turn. Movement costs then should be assigned based on how difficult it is for a unit to move through that type of terrain. We suggest that you scroll through the icons provided with the system and see how the costs have been assigned in the game on the disk. Notice that roads cost only 1 factor (easy terrain) while mountains cost 3 (difficult terrain).

Select MOVEMENT COST. Each terrain icon will appear in the small box next to the edit box so you know which icon you are working on. Also, its present cost is displayed. You may then press the button if that cost is OK or move the stick to highlight CHANGE. To change the cost, press the button while CHANGE is highlighted. You may then scroll through the allowable costs. Highlight the one you want and press the button. This process continues until all of the terrain features have been displayed. At that point you are returned to the modifiers menu.

ALLOWABLE MOVEMENT COSTS

The costs assignable range from 0 to 9. 0 through 7, if chosen, is the number of factors subtracted from a unit if it enters that terrain. 8 and 9 have special meaning.

MOVEMENT COST 8: This assignment does NOT deduct 8 from a unit's factor. Use 8 to designate terrain NO UNIT can enter. Aircraft can pass through because they are flying, not on the ground. No ground units can enter though. A possible use for this designation is to assign an 8 to walls if you are making a scenario that calls for an interior setting. This way, no unit, or person, can walk through walls.

MOVEMENT COST 9: This cost is used to keep ground units out of the water. Only units designated as BOATS can occupy a terrain feature with a cost of 9. The exception again is aircraft. They are in the air and may pass over any water area. (If you have difficulty with this concept, examine the icons in the game.)

COMBAT MODIFIERS

The mechanics of assigning combat modifiers is exactly like assigning movement costs except this time, ask yourself “What effect does this terrain have on the unit’s ability to fight?” Obviously a unit in a fort will gain strength from its position. A unit in the open on a bridge is in a very dangerous position. Units in wooded areas have cover.

ALLOWABLE COMBAT MODIFIERS

The range allowed is again 0-9 with the number being ADDED to the unit’s strength factor. Again modifiers 9 and 9 have special meaning.
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COMBAT MODIFIERS 8: Any terrain assigned a modifier of 8 actually will DEDUCT 1 from the unit's strength NOT add 8 to it. COMBAT MODIFIER 9: A unit engaged in combat in terrain that has a 9 modifier will have 2 deducted from it's strength factor.

ICON RESTRICTIONS

UNIT ICONS: The top row of icons are the UNIT ICONS. These are the ones the other modules use for units. You can give them any appearance you like, but these 22 icons are the units. Icons 1-10 are one army and icons 13-22 are the other. Icons 11 and 12 are extra. You may use these two spaces to shuffle icons around on the screen. In the game, you always control the forces made up of icons 1-10. The computer controls those made up of icons 13-22.

TERRAIN ICONS: The bottom two rows of icons are the TERRAIN ICONS. When you design a map or play the game, the computer uses these 44 icons for the map. Several of them have special uses. The 2 BRIDGE icons in row 2 are always used by the game program as barrier crossings, i.e. bridges, doors, gates. In row 3 you will see 2 BLOWN BRIDGES. These 2 icon locations are used by the computer for that purpose. If those 2 icons looked like trees, when you blew up a bridge in the game, you would see trees instead of a blown bridge.

OBJECTIVE ICONS: In the center of row 3 you will see 4 icons that look like overhead views of cities and forts. The 2 on the left (with the RED squares in the center) designate ownership by the computer controlled forces. The 2 on the right (with GREEN squares) are used to indicate that you control those objectives. Again, you can change the appearance of these icons to anything you choose, just remember, they are the terrain features you will want to capture from the enemy in the game.

SPECIAL USE ICONS: The last 2 icons in row 3 have special uses. If a plane, gunboat, or artillery unit shells a clear terrain space or road, that icon is replaced on the map with icon 66 (the last icon in row 3). Icon 66 is used to show damage from heavy shells and bombs. Icon 65 (second from the right in the bottom row, the one that says HELP) is used in the game module to animate explosions. You should edit this icon to look an explosion. It says help right now so you can find it easily in the MAP DESIGN module, where it has a special use.

EXIT

When you are done assigning movement and/or combat modifiers, you return to the main modifier menu. Select EXIT to return to the main ICON DESIGN menu. After you select EXIT, you are given a chance to save the modifiers to disk or just return to the main menu. If you made changes to the modifiers and are satisfied with them, then choose YES. The new modifiers will replace the old ones on the disk. Otherwise, choose NO and the modifiers on the disk will be unchanged.

MAIN MENU

Selecting MAIN MENU will return you to the WGDII main menu. No changes will be saved! If you changed the icons or modifiers and want the changes saved to disk, be sure to do so BEFORE you select MAIN MENU. Don’t be afraid to experiment. You are using a backup copy. You can’t hurt anything.
Selecting MAP DESIGN will load the map design module and the current map on graphic on the disk. From here you can modify the existing map or create a new one. There is a help screen in this module that you can access by putting the cursor under the icon that says HELP and pressing the button.

You can easily modify the map by putting the cursor under the icon you want & pressing the button. A square cursor will appear on the map. Move it to the spot where you want the new icon and press the button again. To use the same icon again, just press the button one more time and move to the next spot you want it.

**THE Z KEY**

Even if you are using the joystick, the Z key on the keyboard is active. This key is used to switch between using the keyboard and the joystick. It is active at all times in all of the modules. (If you have trouble drawing with the joystick in the ICON DESIGN module, press Z and use the keyboard). It is especially important in the MAP DESIGN module because you cannot exit this module unless you are using the keyboard.

**FILL**

To use the FILL function, you must be in keyboard mode (see THE Z KEY on the previous page). Press F on the keyboard. Select the icon you wish to fill the map with. Press ENTER. The map will then be filled with the chosen icon. This is a quick way to start a new map design.

**SAVE**

To use the SAVE function you must be in keyboard mode. Press S on the keyboard and the map you see on the screen will be saved to the disk. This replaces the existing map data and graphics files.

**RETURN TO THE MAIN MENU**

In keyboard mode, press R to return to the WGDII main menu. Returning to the main menu does NOT save any changes you may have made to the map. You need to use the SAVE option before you press R if you want changes saved.

**OBJECTIVES**

The object of most games you design will be to capture certain terrain from the computer controlled forces. You can have up to 10 objectives in a scenario. You MUST have at least 1 and it must be occupied by a computer controlled unit at the start of the game. The reason for this is, after each turn, the computer checks to see if it holds any objectives. If it does (and it still has some units left) the game continues. If no objectives are held by the computer, the game ends with a victory for the player. An objective is held by the army whose forces last occupied it.
UNIT ATTRIBUTES

In this module you can modify the attributes that make each unit unique. After you select UNIT ATTRIBUTES from the main menu, the files containing the data, the icons, and the map are all loaded from the disk. You can then view the map, change the attributes, save the new data or return to the main menu. Each of these functions are explained below.

The main UNIT ATTRIBUTE MENU looks like this:

**VIEW MAP**
**SAVE ORDER OF BATTLE**
**EDIT XXX FORCES, STRENGTH=000**
**EDIT YYY FORCES, STRENGTH=000**
**MAIN MENU**

**VIEW MAP**
Select VIEW MAP from the main menu to see the map and all of the units placed in their starting positions (the spot on the map where they enter the game). Press the button to return to the main menu.

**SAVE ORDER OF BATTLE**
After you’ve edited the units, you will want to save the new data to disk to be used by the game program. Just highlight this option and press the button.

**EDIT XXX FORCES, STRENGTH=000**
Highlight this option to edit the forces you control in the game. The total strength of the group is shown to the right. You will first be given a chance to change the name of the forces. If you do, just highlight the word YES and type in the new name and press ENTER. The screen will change to a display like this:

**EDIT U.S. FORCES**
**SELECT OPTION:**
**UNIT NUMBER 1**

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>GI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Name</td>
<td>Infantry</td>
</tr>
<tr>
<td>Icon Number</td>
<td>1</td>
</tr>
<tr>
<td>Attack Strength</td>
<td>5</td>
</tr>
<tr>
<td>Moves per Turn</td>
<td>4</td>
</tr>
<tr>
<td>Turn of Entry</td>
<td>1</td>
</tr>
<tr>
<td>Range of Fire</td>
<td>1</td>
</tr>
<tr>
<td>Location row/col</td>
<td>10, 16</td>
</tr>
<tr>
<td>Aggression Factor</td>
<td>N/A</td>
</tr>
</tbody>
</table>

See Map
Next Unit
Previous Unit
Lift All Units
Replace All Units
End Edits

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The display now shows all of the information stored about the first unit of the U.S. Forces. You can easily change any of these variables by highlighting the one you want to change and pressing the button. The cursor will jump to the right and display the lowest possible value allowed. Use the stick to cycle through to the highest, stop on the one you want and press the button to install the new value. Each of these attributes is explained in the following pages.

**UNIT TYPE**

Each unit can be 1 of 7 types which tells the computer what that unit is and what it can do. The allowable types are:

- **GI** These units are typical foot soldiers restricted to land movement.
- **EN** Engineer type units are like GI but have the ability to repair bridges.
- **AI** Airmobile infantry fight like infantry but are transported by air. Areas like all water spaces can be passed over. GI units would be unable to cross.
- **AR** Armored units designate tanks and similar heavy guns with long range fire.
- **GN** These GUN units represent artillery forces. They can fire each game turn even if they are not in contact with the enemy. They can attack both enemy units and terrain features such as bridges and roads.
- **AC** Aircraft units represent fighter and bomber planes. These units can be moved from their base to a target area, attack, and then the computer returns them to the base at the end of each game turn. Your base is at the center bottom of the map. The computer’s base is at the top.
- **BT** Boat units can travel only in ALL WATER spaces. (In the ICON DESIGN module, the icon to the right of the bridge is reserved for this purpose. Use that icon ONLY to represent ALL WATER areas for boats. Placing a unit designated as a boat on any other icon will leave it unable to move.)

**UNIT NAME**

When you click on this option, you can give the unit its own unique name. Just type in the name and press ENTER.

**ICON NUMBER**

Use this function to tell the computer which icon to use to represent this unit. If you are working on your forces, icons 1-10 are usable. Icons 13-22 can be assigned to the computer’s forces. The icons are displayed at the bottom of the map screen in numerical order. Use the SEE MAP feature to determine the correct number to enter.

**ATTACK STRENGTH**

The range of strength you can assign to each unit varies from 1-15. It is important to balance this factor. Infantry should not be more powerful than tanks. The range allowed give you a lot of room to vary the different unit types. No unit can lose more than 5 strength points in any one attack in the game. So, if you want units that can be eliminated by one attack, make them a 5 or less.
MOVES PER TURN

Units can be given from 0 to 10 movement points per turn. If all of the terrain icons had a movement cost of 1 factor and a unit has 6 moves per turn, then it could move 6 spaces per turn. Also keep in mind that motorized vehicles move farther than men on foot in the same time span. Assign accordingly.

TURN OF ENTRY

Each unit can enter the game on any turn from turn 1 to turn 8. Use this feature to have reserves enter the battlefield at different times.

RANGE OF FIRE

Artillery can fire at much greater range than a rifleman. So can tanks, but not as far as artillery. This feature allows you to set the scale of the conflict. If units represent company size then the range should vary per unit type. If units represent entire armies then perhaps they should all have a range of 1, which means a unit can only attack an enemy unit right next to it. The allowed range varies from 1 space to 6 spaces.

LOCATION

Clicking on LOCATION will switch you to the map screen. The unit selected will flash several times so you can see its present location. It is then removed from the map and a square cursor appears in the center of the map. Move the cursor to the location you wish the unit to appear in when it enters the game. Press the button to place the unit. Don’t forget. At least 1 computer controlled unit must occupy an objective at the start of the game.

AGGRESSION FACTOR

Aggression factors (AF) only apply to units controlled by the computer. This is how you tell each of these units to act. Here are the 8 factors:

0. A unit assigned an AF of 0 will never move. Use this AF for units that will occupy an objective and defend it to the death.

1. These units will move randomly to the East and West only. This is good for units you want to stay in the same general area they start in. It is also (like 0) a defensive AF.

2. Units will move in an Easterly direction. A good Assault AF. These units move across the map attacking your units as they encounter them.

3. The opposite of AF2. These units move from right to left on the screen.

4. These units have two missions. They will seek enemy units to attack within five spaces in all directions. If no enemy is found they seek objectives. These make excellent reserve units to enter the game at later stages as they could retake objectives you captured earlier.

5. Units assigned AF5 will move steadily Northward. Again, good for a steady advance or withdrawal in that direction.

6. Just like AF5 except to the South.

7. This is the most aggressive AF. These units have only one mission. Find your units and fight to the death. They search a 5 space area around themselves. If no enemy unit is present, they move randomly until one is found.
SEE MAP
Click on this option to see the map screen. It is most useful to determine the icon you wish to use for a unit and study the overall balance of the scenario.

NEXT UNIT
Click on NEXT UNIT to see and/or edit the attributes of the next unit in the army you are currently working on. The MAXIMUM number of units is 20.

PREVIOUS UNIT
Use this option to scroll back to the previous unit. Changing from one unit to another does not alter any of the data. Selecting this option while on unit 1 will display unit 20.

END EDITS
Click on END EDITS when you are finished editing. You will return to the main UNIT ATTRIBUTES menu. If you made changes to the forces, don't forget to save them by clicking on SAVE ORDER OF BATTLE.

MAIN MENU
Highlight and click on MAIN MENU to return to the WGDII main menu.

PLAY GAME
Click on PLAY GAME on the WGDII main menu to play the scenario on the disk currently in the drive. The screen will clear and all of the game data files, game program and graphics will be loaded and prepared for play. This takes a little while.

After all the preparations are done, the game screen appears and you are asked if you want to play a NEW game. Press the button to load the new game data. If you want to continue a saved game, move the joystick until SAVED GAME? appears, then press the button. In either case, the units will be loaded from disk and displayed. It is your turn first.

PHASE 1, MOVEMENT
Before you, you see the map and your units who have entered the game on turn 1. At the bottom of the screen is the dialog box. This is where you get information about your units and the status of the game. The first line tells you that you are in the movement phase. The last line describes the unit currently highlighted on the screen (the one with a square around it).

The second line displays your options. Use the stick to display each of them.
MOVE UNIT
Click on this option to move the unit. The number of movement factors the unit has will be displayed. As you move the unit with the stick, the number of factors will decrease according to the terrain cost assigned to each terrain type. When the unit has used all of its movement factors, the next unit will be highlighted. If you want to stop moving before that time, press the button.

NEXT UNIT
Click on NEXT UNIT to highlight the unit able to move on this game turn. Selecting this option does not prevent you from returning to the previous unit and moving it later.

END PHASE
The movement phase will end when you have moved all of your units. If you wish to end it before that time, just click on END PHASE and the COMBAT PHASE will begin.

GAME STATS
Click on game stats to see the current score, game turn and total strength of all of your forces. The score is determined in this manner. Each objective held is worth 10 points and each strength factor your enemy loses adds 1 point to your score.

SAVE GAME
Select SAVE GAME to save the current game in progress to disk to play later. Choosing this option saves the data and you can continue to play.

END GAME
Clicking on END GAME will return you to the WGDII main menu. The game in progress is NOT saved by this function.

PHASE 2, COMBAT
In the COMBAT PHASE you can conduct your attacks against the enemy. WGDII allows multiple unit attacks against a single target. As in real war, the more force you bring to bare on an enemy unit, the better. As units controlled by the computer weaken, their behavior changes. Units programed to attack may start to withdraw.

All combat is resolved based on a combat results table. The strength of the attackers is added up and then adjusted for terrain effects. Then the defender's strength is adjusted similarly. A die is rolled and the table consulted. Attacker and defender strength is adjusted accordingly. You will find the results realistic.
COMBAT
Each unit able to attack the enemy or AC, GN, BT and AR units will be highlighted in turn. If you wish to attack an enemy unit or a terrain feature, click on this option. The words SELECT TARGET will appear. Use the cursor to highlight the target and press enter. If the target is not allowed, you will hear a beep and be returned to the COMBAT option. Some units, such as AR types, are highlighted even when no enemy seems to be in range. The purpose of this is to allow you to attempt to find the enemy by fire. If no target is found, just press the button to go to the next unit.

NEXT UNIT
Click on NEXT UNIT to highlight the next unit able to attack on this game turn. You can return to this unit later if you desire.

END PHASE
After all units you wish to attack with have been assigned targets, click on END PHASE. All attacks will be resolved on screen and the results of each shown in the dialog box. When all combat is resolved, the computer will conduct its movement and combat phases just as you did. After that, the next game turn will begin.

GAME STATS
The game stats are available during the combat phase also.

SHOW ENEMY FORCES
Normally the enemy forces not in contact with your units are hidden from view. This simulates reality as you do not know where they are until you find them or they find you. If you would like to play the game and see where they are at all times, watch them move and see their strength and movement factors, click on this option. At the beginning of the next turn, they will all be visible. This option is very useful when play testing a new scenario to see if they enemy units are acting as you planned.

HIDE ENEMY UNITS
This option sends the enemy units back into hiding on the next turn. Use it after you have used the previous option.

INVASION NORTH
The object of INVASION NORTH is to take your forces, located at the bottom of the screen, and capture the 9 enemy held objectives across the river. You have several types of units available to help you, Infantry, Armor, Artillery, Anti-tank units, Engineers, Airmobile and Fighter-Bombers. The enemy, controlled by the computer, has a similar force to defend with.
RESERVES
You, and the enemy, will receive additional units as the game progresses. (You decide when units enter the game when you design a scenario yourself).

REPLACEMENTS
Also, beginning with turn 5, replacement troops are available to units who are NOT engaged in combat. On each odd numbered turn, beginning with turn 5, during the Combat Phase, any unit not assigned an enemy target will receive 1 Strength Point which represents additional troops assigned to the unit. This function is handled by the computer. As a strategic consideration, it is wise to move units who have suffered heavy casualties away from the enemy. Do not attack with them. This way they will be eligible to receive replacements and rebuild their strength up to, but not exceeding their original strength.

ARTILLERY
A special rule applies to Artillery units. They only suffer casualties under two circumstances. 1-if they are attacked by enemy units and the Combat Results Table says they do. 2-if they are engaged in an attack in concert with other friendly units and the DRT indicates casualties for them. When attacking an enemy unit ALONE (shelling the enemy from a distance) they receive no casualties. Effective use of artillery can make a big difference.

VICTORY CONDITIONS
There is no set number of game turns in WGDII scenarios. There are 4 ways to end the game:
1. Capture all of the enemy held objectives. You win.
2. Destroy all of the enemy units. You win.
3. If all of your units are destroyed, the enemy wins.
4. You may end the game by clicking on END GAME. If the situation appears hopeless, you can just quit and play again.

The WGDII game program is based on years of study and play of both board and computer war games. The results of your strategic decisions will be realistic. Take advantage of your strengths and terrain. Victory will be yours!

ATTACK ON MOSCOW
This scenario recreates the World War II German assault on Moscow. You play the German commander. Your forces start at the West side of the map. Your objective is to capture Moscow, the only objective in the game. Moscow is located in the Northeastern corner of the map. The Russians have a primary defense line directly to your front and Moscow is heavily defended by infantry, tank and rocket units. All of your units are on the map at the beginning of the game. Replacement troops are available throughout the game beginning on turn 5.
In this scenario, you are a senior student at the National Officer Training School. Your COCO3 is now your terminal to the multi-billion dollar military simulator in Washington. This exercise is part of your final exam. Your goal is to capture the four flags held by the Red Forces. You command the Blue Forces, which start in the Southern part of the map. You will be graded on your ability to capture the four objectives in the shortest possible time with as few casualties as possible. You have Infantry, Armor, Artillery, Air Support and Airmobile Forces at your disposal. Will you graduate?

Ever play Cowboys & Indians? Here's your chance to relive those exciting days from yesteryear. You command the Indians. Your mission is to capture the fort. To do this you will need to capture the 2 supply stations near the bridges on the West side of the river. Then attack the fort itself. Once inside, capture the supplies and the flag. You will start the battle Northeast of the river. A second Indian war party will join you later Southeast of the river. Watch out for the Calvary!

See the section entitled PLAY GAME for complete playing instructions.

SCENARIO MODIFICATION

INVASION NORTH AND ATTACK ON MOSCOW both have all the modules necessary to modify an design scenarios. R.O.T.C. and FORT APACHE are provided as stand-alones. To modify them, kill ICONS/BAS, TERF/BAS and L2/BAS on the R.O.T.C. or FORT APACHE disk. Then, copy ICONS/BAS, TERF/BAS L2/BAS and ARMY/BAS from the INVASION NORTH or THE ATTACK ON MOSCOW disk to the R.O.T.C and FORT APACHE disks.
Addendum

UNIT ATTRIBUTES

Two new menu options have been added to the UNIT ATTRIBUTES module since the manual was printed. Also a change was made to the UNIT ATTACK STRENGTH option. All are discussed below.

ATTACK STRENGTH

In order to use less than 20 units in a force, assign the units you do not want to use a strength of zero (0). The map screen will appear and the unit will be removed. When using WGDII to create Science fiction or Adventure type games, it is often desirable to have less than 20 characters in one or both forces. Use this method to remove unwanted units from the game.

LIFT ALL UNITS

If you are creating a NEW scenario, you may find it easier to organize them on the map if you remove all of them first. Highlight LIFT ALL UNITS and press the button. The map screen will appear and all of the units in the force you are working on will be lifted off of the map. The computer will remember where they were though. You can use this option any time you wish.

REPLACE ALL UNITS

Use this option to put the units back on the map after you have removed them with the LIFT ALL UNITS option. All units, except those whose location has been changed since the previous command was used, will be replaced in the same place they occupied when LIFT ALL UNITS was selected.

ICON DESIGN

A change has been made to the PEN UP/PEN DOWN routine. These two items no longer appear on the menu. When you select DRAW from the menu, the PEN will be UP. Press the space bar to lower the pen. To raise the pen, press the space bar again. The words PEN UP or PEN DOWN will appear to the right of the word DRAW so you know it’s present position.

If you have a two button joystick, button 2 controls the pen up/down control. This should make editing icons much easier.

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APPENDIX A

ENTER = the fire button

Use the keys shown above to simulate the joystick and button.

The Z key is used to switch between joystick and keyboard control.