

User's Manual

Hong Kong Mahjong Pro™

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HONG KONG MAHJONG PRO™

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GETTING STARTED

Note: You must have a hard drive and a Microsoft®-compatible mouse to play Hong Kong Mahjong Pro!

Experienced computer users: To install the game to your hard drive, simply run the Install program in the Mahjong directory of the CD-ROM. Follow the screen prompts, and then skip down to the Main Menu section on page 4.

Less experienced users: Read the instructions in the next three sections for a step-by-step guide through the installation process.

Installing Hong Kong Mahjong Pro

1. Boot your computer with MS-DOS (Version 3.0 or higher).
2. Place the CD with Hong Kong Mahjong Pro in your CD-ROM drive.
3. At the DOS prompt, type the drive letter (example: d:) and press ENTER.
4. Type cd\mahjong and press ENTER.
5. Type install, followed by the drive letter of your CD-ROM drive, then the drive letter of the hard drive you wish to install the game to.

EXAMPLE: If you're CD-ROM is drive D:, and you wish to install the game to drive C:, type **install d: c:** and press ENTER.
Be sure to include the spaces!

The game is installed into a subdirectory called *HKMJ*.

6. You are shown the selections you just made. If they are correct, press any key to continue. If you want to make changes before you begin the install process, press Ctrl-C to terminate, confirm your choice by pressing Y, and then go back to Step 4.
7. After installation, select Run HKCONFIG.

Configuring Hong Kong Mahjong Pro

After you install *Hong Kong Mahjong Pro*, you are automatically taken to the Configuration program. To configure your game to your system, follow these instructions:

Graphics

Note: If, after following the instructions below, your sound card or graphics mode don't function properly, see Problems with the Game, page 32.

A message appears telling you the graphics mode *Hong Kong Mahjong Pro* will display. If your computer does not have what is required to run in SVGA modes, what you need is printed in red. Press any key to go to the sound and music configuration screen.

Sound and Music Cards

1. To hear digitized voices, you need to have one of the sound cards listed on the left side of the screen. Press the letter of the sound card you want to use for voices.
2. To hear music, you need to have one of the sound cards listed on the right side of the screen. Press the number of the sound card want to use for music.
3. If you want to save your changes, press X. If you want to quit without making any changes, press Q.
You can later return to this configuration program to change your selections. First type cd\hkmj and press ENTER, and then type hkconfig and press ENTER. Then begin again above at Step 1.

Note: In addition to sounds from your sound card, some sound effects may be emitted from your PC speaker.

Starting Hong Kong Mahjong Pro

Note: You must have your mouse driver installed to play Hong Kong Mahjong Pro!

To start playing *Hong Kong Mahjong Pro*, follow these instructions:

1. At the DOS prompt, type the name of the hard drive you installed the game onto (example: c:), and press ENTER.
2. Type **cd\hkmj** and press ENTER.
3. Type **hkmj** and press ENTER.
4. Two rows of tiles appear. Read the message to see which page of this user's guide to turn to, and look at the tile by the page number. Click the left mouse button on that tile on the screen.
5. The title screen appears and the credits begin. Click the left mouse button to see the Main Menu and begin to play.

Note: To run the tutorial instead, type **hkmjtutr** and press ENTER. For a description of using the Tutorial, see Using the Tutorial, page 18.

MAIN MENU



Using the mouse, click the LEFT button to select one of the following options:

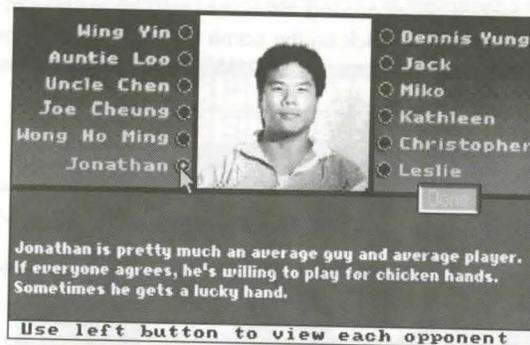
- a. **Choose Opponents:** View and select your opponents. If you don't choose opponents before playing, they'll be chosen for you (see *Choosing Your Opponents*, page 5).
- b. **Scoring History:** View the current winnings and losses for all players and opponents (keeps a running total for all the opponents you've played against).
- c. **Play Mahjong:** Begin the game.
- d. **Exit to DOS:** Quit the game.

CHOOSING YOUR OPPONENTS

Hong Kong Mahjong Pro allows you to choose from twelve opponents whose skill levels range from below average to expert. Before you begin a game, you can view each of the twelve and find out about their skill levels and playing styles, then choose the three you'd like to play with. Inexperienced players should choose Christopher, Wing Yin, and Miko; these opponents make the best combination for beginners.

View Your Opponents

Here you can learn about each of your opponents:



Click on opponents' names to see them, and learn about their backgrounds, skill levels, and a little about their playing styles. When you are ready to choose your three opponents, click on DONE.

Choose Three Opponents

Select three opponents by clicking on their names.

Note: Three opponents are already selected by the program; click on the highlighted names to de-select them before choosing new opponents!



A highlighted box appears around the names you have chosen. If you change your mind, simply click on the name again to remove the highlight, and choose another opponent. When you have chosen three opponents, click on EXIT.

BEGINNING TO PLAY

Note: Before playing, we recommend that you view the tutorial program. For instructions, see Using the Tutorial, page 18.

The Object of the Game

The game of Mahjong has many subtle complexities, but on the surface it's really no more complicated than the popular card game, Gin Rummy. Four players sit at a table and stack the 144 tiles into a square Wall. 13 tiles are dealt to each player, then they take turns picking up a tile from the wall and throwing one into the middle of the table.

Occasionally one player will take the opportunity to *claim* another's discard. After a few minutes, one of the players will be the first to have assembled a hand of tiles that is defined as "complete" (containing four Sets, and one pair). This person wins, and the other players must pay him. The tiles are shuffled, the Wall is rebuilt, and another hand begins.

A game consists of four Rounds, which correspond to the Winds: East, South, West, and North. Within a Round, the Seat rotates from player to player, also according to the Winds: East, South, West and North.

Note: The order of the Winds is East, South, West, and North.

The player in the East seat rolls the dice at the beginning of each hand to determine which section of the Wall tiles will be dealt from. He retains his seat through winning hands and Dead Hands (see *Dead Hands*, page 14). When someone else wins, the Seats rotate counter-clockwise (i.e. player who was East becomes North, etc.). A complete game lasts a minimum of sixteen hands, and often many more.

Name Please...

When you select PLAY MAHJONG from the Main Menu, the Name screen appears. Click the LEFT mouse button on the appropriate letters to spell your name.



Click on these buttons to adjust the chip value (value of the coins you play for) between ten cents, one dollar, and ten dollars.

Choose Your Wind

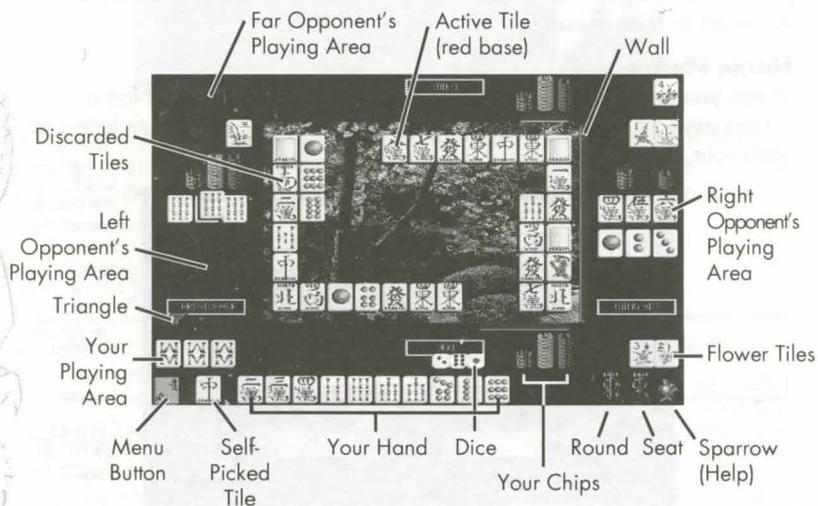
After you've entered your name, a screen appears asking you to choose your Wind from four face-down tiles. Click on one of the tiles; the game tells you which Wind you've selected.

Next, the Options Menu appears, allowing you to make adjustments to the game (see *The Options Menu*, page 15). Click on CONTINUE to play.

THE GAME SCREEN

Now the game screen appears and tiles are dealt, then play is paused for a moment while you and your opponents review your hands. Click either mouse button to begin the game.

This is the Mahjong table.



Your Hand:

Thirteen tiles are dealt and sorted automatically into groups of *Characters*, *Sticks*, *Balls*, *Winds* and *Dragons*. Your opponents cannot see your hand.

Self-Picked Tile:

The tile which the computer draws for you from the Wall at the beginning of your turn.

Your Playing Area:

This is where the computer places Sets you play from discarded or self-picked tiles (see *Sets*, page 25).

Menu Button:

Appears only during your turn, allowing you to quit, Kong a tile, or Win the hand (see *When it's Your Turn*, page 12).

Discarded Tiles:

May be claimed while they are active.

Wall:

At the beginning of each game, all the tiles are stacked around the Game Board, creating a green *Wall* of tiles. Each player's hand is dealt from the Wall, and tiles are picked from the Wall throughout the game.

Dice:

As each hand begins, the dice are rolled to decide which section of the Wall tiles will be dealt from. This practice was developed to avoid the possibility of players cheating by "planting rice" or stacking the tiles in such a way as to deal themselves a better hand.

Active Tile:

A tile just discarded has a red base for a short time (determined by the Playing Speed option on the Options Menu), after which it is out of play for the rest of the hand. Click the LEFT mouse button to claim an active tile, then select an option from the Claim Menu.

Note: You may not claim a tile which you have discarded.

Flower Tiles:

When dealt or self-picked, these tiles are set aside and replaced in your hand by additional tiles from the wall. If you win the hand, they may be worth extra points (see *Scoring*); this will be indicated by a highlight.

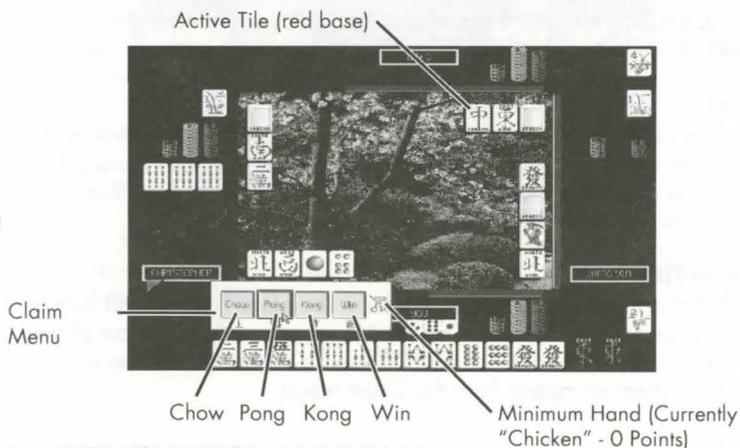
Triangle:

The triangle indicates where each new Round begins by pointing to the East player. It stays with the opening player as a reminder of where the round began.

CLAIMING (PLAYING) TILES

At any time during the hand, as other players discard tiles, you may claim them as Chow, Pong, Kong, or to Win — but only while the tile is active. A discarded tile is active while its base is red, and it remains active for only a short time. When a tile becomes inactive, its base turns green.

Note: To bypass the active interval for discarded tiles you are not claiming, click the RIGHT mouse button.



To play an active tile:

1. Click the LEFT mouse button while the tile is active (red). The Claim Menu appears.
2. Click the LEFT mouse button to highlight one of the following options:

❖ **Chow:** Three tiles in numerical order (123, 234, etc.). You may only Chow from the discard of the player on your left.

Note: Chow is a low-priority claim; another player needing the same tile for a Pong, Kong, or Win can take a tile you are attempting to Chow.

❖ **Pong:** Three identical tiles (111, •••, etc.). You may Pong from any player's discarded tile.

Note: Pong takes priority over Chow; a player attempting to Chow a tile must surrender it to a player wishing to Pong it.

❖ **Kong:** Four identical tiles. Kong is worth no more points than Pong; it simply allows you to remove the fourth tile in a set from play. An additional tile is dealt from the wall to maintain a 13 tile hand.

Note: Like Pong, Kong takes priority over Chow (see above).

❖ **Win:** The object of the game is to create four sets and one pair, for a total of fourteen tiles. Choose WIN when the active discarded tile will make your hand complete.

Note: Win takes priority over all other claims; players wishing to Pong, Kong, or Chow a tile must surrender it to a player who needs it to Win. If more than one player claims the tile to win, the player nearest the thrower (counter-clockwise) wins the tile, and the hand.

3. Click the LEFT button again to select the option. To CANCEL the choice, click the RIGHT mouse button, then use the LEFT button to select a new option, or click RIGHT again to remove the Claim Menu and continue the hand.

WHEN IT'S YOUR TURN...

Play goes counter-clockwise around the table unless someone claims a tile as a Pong or Kong, in which case the turn jumps to their position. When it's your turn, a tile is drawn from the Wall, and you must choose a tile to discard.

To discard:

1. Click the LEFT mouse button on the tile you want to throw; the tile is placed on the game board and the hand proceeds.

Note: Chows, Pongs, and Kongs are laid out for all players to see, but tiles picked up during your regular turn are kept hidden.

Playing a Self-Picked Tile:

A self-picked tile is one that the computer draws from the Wall at the beginning of your turn. It appears just to the left of your hand and may either be played or discarded as you choose.

To play a self-picked tile, click on the Menu button in the lower left corner of your screen (appears only during your turn).

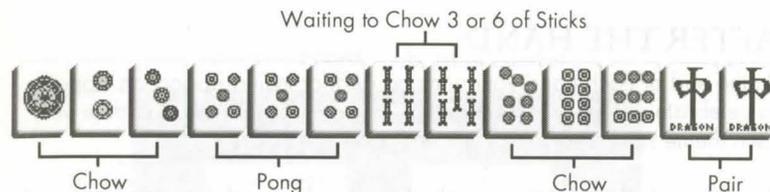


1. Click the LEFT mouse button to highlight one of the following options:
 - ❖ **Quit:** Stop playing and return to the Main Menu.
 - ❖ **Kong:** Play a self-picked tile or a tile you are holding with three identical tiles in your hand for a set of four identical tiles (5555, ●●●●, etc.).
 - ❖ **Win:** If the tile you've picked makes your hand complete, and your hand contains the minimum number of points allowed, click here to win the hand.

2. Click the LEFT button again to select the option. To CANCEL the choice, click the RIGHT mouse button, then use the LEFT button to select a new option, or click RIGHT again to remove the menu.

WINNING

You're almost ready to win when you have a *waiting* hand — this means your hand is complete except for one tile. The hand below is a *waiting* hand because it requires only the 3 or 6 of Sticks to make it complete.



If your winning tile is thrown:

1. Click the LEFT mouse button while the tile is active (red base). The Claim Menu appears.
2. Click the LEFT mouse button to highlight WIN.
3. Click the LEFT button again to select WIN. A message appears, telling you how many points your hand is worth and asking if you'd like to "Declare now?".
4. Click the LEFT mouse button for YES, or the RIGHT one for NO.

Note: If more than one player claims the tile to win, the player nearest the thrower (counter-clockwise) wins the tile, and the hand.

If you pick your winning tile at the beginning of your turn, (OR if you claim a discarded tile for a Pong, Kong, or Chow, then realize your hand is complete:)

1. Click the LEFT mouse button on the MENU button in the lower left corner of your screen.

- Click the LEFT mouse button to highlight WIN. A message appears, telling you how many points your hand is worth, and asking if you'd like to "Declare now?".
- Click the LEFT mouse button for YES, or the RIGHT one for NO.

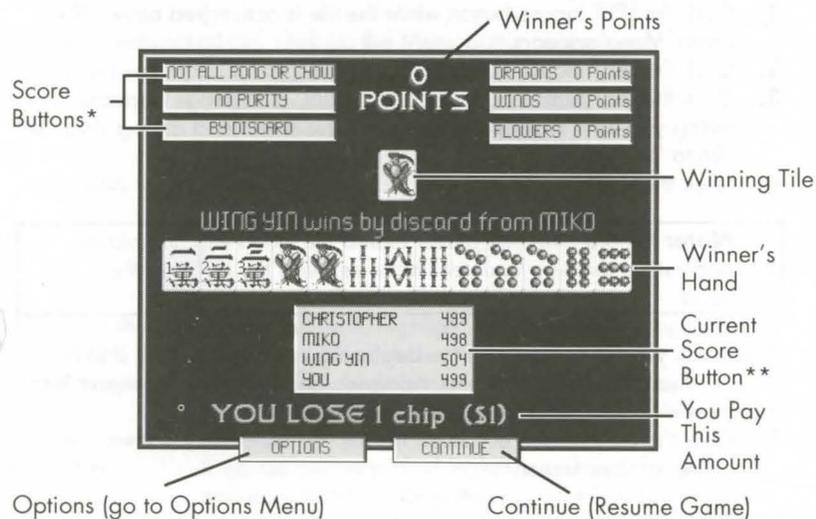
DEAD HANDS

A Dead Hand occurs when all the tiles have been dealt, but no player is able to win. In the case of a Dead Hand, the round and seat do not advance, and no chips are paid.

AFTER THE HAND

At the end of each hand your winning and/or losing opponents appear to celebrate victory or lament defeat, to the accompaniment of their very own theme song. Now the Winner's Screen appears.

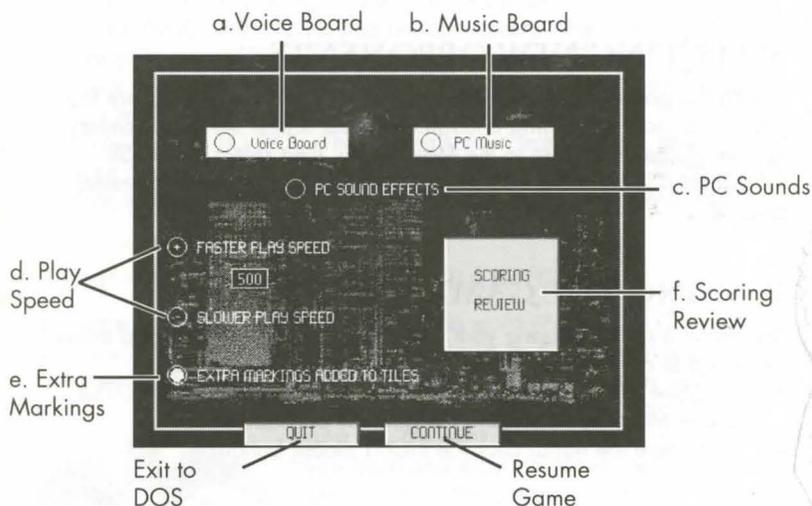
The Winner's Screen tells you who has won the hand, how it was scored, and informs you of each player's winnings and losses.



When you have finished viewing this screen, click on OPTIONS to see the Options Menu, or on CONTINUE to play the next hand.

- * Click on these buttons to learn more about the winner's score. Click again to remove information windows.
- ** The current holdings (chips) of all players. Click on this button to learn the number of chips each player paid or won at the end of the round. Click again to remove the information window.

THE OPTIONS MENU



This is the Options Menu. Click the LEFT mouse button to select and adjust the following options:

- Select to turn on/off voices if you have properly configured Sound Blaster, Sound Blaster Pro, ThunderBoard or Pro AudioSpectrum boards.

- b. Select to turn on/off music if you have properly configured ThunderBoard, Pro AudioSpectrum, Sound Blaster, Sound Blaster Pro, AdLIB, Roland MT-32, LAPC-1 boards, or PC speaker music.
- c. Select to turn on/off PC speaker sound effects.
- d. Click on FASTER or SLOWER to adjust playing speed (determines the interval during which discarded tiles remain *active*). The current playing speed is displayed in the center.
- e. Include Arabic numerals and English markings on tiles (example: 1,2,3,4, East, North, West, South).
- f. Information on how hands are scored, and on Special Hands.

SELECTING NEW OPPONENTS

During the game you may decide that your current opponents are too difficult, or not challenging enough. To select a new set of opponents, quit the game and return to the Main Menu, then select CHOOSE OPPONENTS. For more information, see *Choosing Your Opponents*, page 5.

PAUSING THE GAME

The game is paused during your turn until you discard a tile and allow the round to continue. To pause the game during the hand:

1. Click the LEFT mouse button while a discarded tile is *active*. The Claim Menu appears, and the game is paused.
2. To resume the hand, click the RIGHT mouse button.

QUITTING THE GAME

Note: When you quit Hong Kong Mahjong Pro, your winnings and losses are saved, but restarting a game always starts a completely new game.

To quit playing and return immediately to DOS, press [Alt-X] during your turn. Otherwise:

During the Hand

1. Wait for your turn, and click on the MENU button in the lower left corner of your screen.
2. Click the LEFT mouse button to highlight QUIT. Click again to select. The Main Menu appears.
3. Click on EXIT TO DOS. The ending screen appears; the sparrow and your opponents bid you good-bye. Click on EXIT TO DOS again to quit, or click on GO BACK TO MENU to return to the Main Menu.

After the Hand

1. Wait for the hand to end, and click on the OPTIONS button (next to CONTINUE, in the lower half of your screen). The Options Menu appears.
2. Click the LEFT mouse button to highlight QUIT. Click again to select. The Main Menu appears.
3. Click on EXIT TO DOS. The ending screen appears; the sparrow and your opponents bid you good-bye. Click on EXIT TO DOS again to quit, or click on GO BACK TO MENU to return to the Main Menu.

HELP - THE MAHJONG SPARROW

This is the Mahjong Sparrow. Because the word Mahjong is Chinese for "sparrow", the sparrow is traditionally known as the Spirit of Mahjong. The Mahjong Sparrow appears at the beginning of your turn; in Novice mode (see *Using the Tutorial*, page 18), he'll give you frequent hints and messages to help you learn and play the game. During normal play, click on the Sparrow for advice on which tiles to throw away; he'll fly to the tile he wants you to discard and hover there for a moment, then return to his perch.



Note: There are many different ways to complete your hand. The Sparrow's advice is designed to help complete your hand as quickly as possible; he won't necessarily help you to create a high-paying hand.

USING THE TUTORIAL

In order to help you learn to play *Hong Kong Mahjong Pro*, we have included a tutorial program on your game disk. This tutorial includes a quick lesson on the rules and scoring, a demonstration of the game, and the option of playing the game in Novice Mode with lots of help from the Mahjong Sparrow.

To use the tutorial:

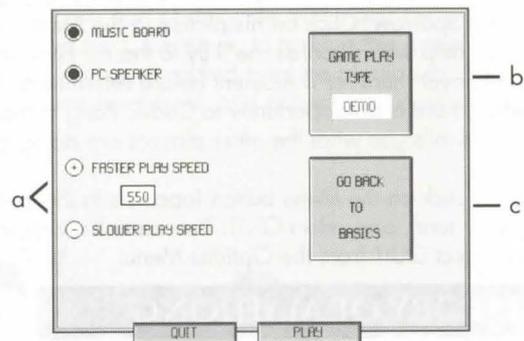
1. From the HKMJ directory, type hkmjtutr and press ENTER.
2. A menu appears. Click on TUTORIAL.
3. The Name screen appears. Click the LEFT mouse button on the appropriate letters to spell your name. Click on OKAY to continue.
4. View each page, then click on one of the buttons at the bottom of the screen:

Go To Demo - Exit the Basics and play a Demo or Novice game
Previous - Go back to the previous page
Next Page - Continue with the tutorial

POP QUIZZES

Now and then the Sparrow gives you a pop quiz to help you learn the game. When a pop quiz occurs, read the question and click on the appropriate answer.

MENU OPTIONS



- a. Faster/Slower Playing Speed:**
We've set it low to make the game easy to follow. Adjust it to your preference.
- b. Gameplay Button:**
Currently set to DEMO; if you want to watch a demo of the game, click on PLAY. To play in Novice Mode, click the Gameplay button to make it read NOVICE, then click on PLAY.
- c. Go Back to Basics:**
Run through the lesson again.

DEMO GAME

In Demo Mode the Mahjong Sparrow plays a game while you watch. As he plays, he displays messages to tell you what he and the other players are doing; to remove messages, click either mouse button.

To quit the demo, click the RIGHT mouse button after any player discards. A message appears asking if you want to "Quit Demo?". Click LEFT to confirm, or RIGHT to cancel.

NOVICE GAME

In Novice Mode you play a real game with lots of extra help and hints from the Mahjong Sparrow. Click on his picture in the lower right corner of your screen for help with discards; he'll fly to the tile he wants you to throw away and hover there for a moment before returning to his perch. He tells you when there is an opportunity to Chow, Pong or Kong a discarded tile, and tells you what the other players are doing as well.

To quit the game, click on the Menu button (appears in the lower left corner during your turn), and select QUIT. You can also wait until the hand ends and select QUIT from the Options Menu.

THE HISTORY OF MAHJONG

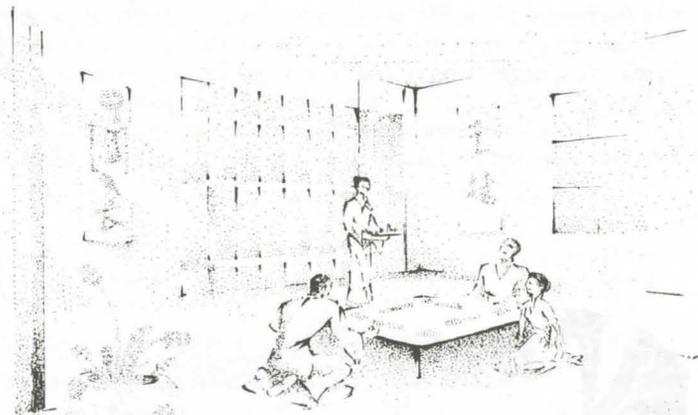


Mahjong is played around the world with variations in play and scoring which may differ from house to house. Though the precise history of the game is incomplete, it is clear that the game originated in China.

Since the People's Republic of China frowns on all forms of gambling, the most common version today is surely that which is played in Hong Kong, where it is as large a part of daily life as the Star Ferry and won ton noodles. We have tried, therefore, to fashion this game in the Hong Kong tradition, using tile images copied from the plastic sets one would find in the typical Kowloon household, and adhering to locally accepted rules.



According to some experts, Mahjong was introduced in both the United States and Japan in the 1920s. The game was very popular in America until sometime in the 1930s. Unfortunately, the "Americanized" Mahjong bore little resemblance to its Chinese predecessor; many of the original features of the game had been eliminated, and dozens of new rules and variations had been established, causing much confusion among authorities as to just what the "official" rules were. Eventually everyone agreed on a standard set of Mahjong rules and terms, but the confusion had already become too much for many players, and the game's popularity suffered a tremendous decline.



Today Mahjong is played very seriously in Japan. There the rules briefly experienced controversy similar to that of American Mahjong, before being rescued by a group of experts calling themselves the Japan Mahjong Association. The JMA is dedicated to the preservation of this form of Mahjong; the standard rules and variations in Japan are set by them.

THE MAHJONG TILES

The following section describes the tiles used to play Mahjong. Be sure to read the sections titled *Sets* (page 25) and *Scoring* (page 26) for more information.

THE CHARACTERS



In English, this suit is referred to as the *Characters*. The symbol in red signifies ten thousand, implying prosperity. The symbols in blue are the numbers one through nine. There are four of each. Using the Extra Markings option on the Options Menu, the Character tiles can be marked with Arabic numbers so you don't have to recognize the Chinese characters.

THE STICKS



The second numerical suit is the bamboo *Sticks*. There are four of each, numbering one through nine (the sparrow is on the number one Stick). Determine their values by counting the twigs on each tile.

THE BALLS



The third and last numerical suit is the *Balls*, which can also be called *Circles* or *Dots*. There are four of each, numbering one through nine. Determine their values by counting the spots on each tile.

THE WINDS



These are the four *Winds*: East, South, West, and North. There are four of each, and a Pong or Kong of a Wind is worth extra points IF it corresponds to the current Round or your current Seat. The characters for the Round and Seat are displayed in the lower right corner of your screen.

Example: If the Round is North and your seat is West, a Pong or Kong of North or West is worth 1 point (indicated by a highlight).

When the Round and Seat are the same (this happens four times within each game), a Pong or Kong of the correct Wind is worth 2 points.

Note: The order of the Winds is: East, South, West, North.

THE DRAGONS



These are the *Dragons*: White, Green, and Red. There are four of each, and a Pong or Kong of a Dragon is worth 1 point.

THE FLOWERS



These are the Red and Blue numbered *Flowers*. There is one of each, numbering one through four. When you pick one up, it is automatically set aside and replaced by a regular tile. When the hand is complete, the winner gets one point for NO flowers, or one point for any flower whose value matches his seat (for example, the South player hopes to get the #2 flowers). All four flowers of a color is worth an additional point.

SETS

The object of the game is to collect *sets* of tiles. Each player starts off with thirteen tiles. The first player to collect four sets of three tiles and a single pair of tiles wins the hand.

CHOW



One type of set you can put together is called a *Chow*. This means a group of tiles in numerical order like the 3-4-5 of Sticks or 6-7-8 of Balls. Shown here is a Chow of the 1-2-3 of Balls. You can make a Chow from the fresh tiles you'll be picking up with each turn or from a tile discarded by the player on your **left** IF you are already holding two of the three tiles you need.

Example: If you are holding a 7 of Balls and an 8 of Balls, you may Chow the 6 or 9 of Balls ONLY if discarded by the player on your left.

PONG



A second type of set is called a *Pong*. This means a group of three identical tiles of any suit. Shown here is a Pong made up of the 2 of Sticks. You can make a Pong from the fresh tiles you pick up, or from a tile discarded by ANY other player IF you are already holding two of the three needed tiles.

Example: If you are holding two of the 9 of Characters, you may Pong a 9 of Characters thrown by any other player.

KONG



The last type of set is called a *Kong*. This means a group of all four identical tiles of any suit. Shown here is a Kong made up of the 5 of Characters. You may Kong a discarded or self-picked tile when you have three identical tiles

in your hand. You may also Kong a self-picked tile if you have Ponged the other three tiles.

Example: You are holding in your hand, or have played a Pong of Green Dragons. When your turn begins, you pick a Green Dragon from the Wall; click on the Menu button and select KONG to add the fourth tile to the set.

Whenever you Kong a tile (discarded or self-picked), an extra tile is dealt to even out your hand. If this tile causes you to win, your hand is worth 2 extra points.

If you are holding four identical tiles in your hand, you may either Kong, or use them as two pairs for a high paying hand (see *Special Hands*, page 28).

Note: Kong still counts as three tiles (like Pong); its purpose is to make use of a fourth matching tile rather than discarding it and making it available to the other players. An additional tile will be dealt from the Wall to maintain a 13 tile hand.

SCORING

The following section describes how hands are scored. After each hand you can get a quick review by selecting SCORING REVIEW from the Options Menu. You can also find out how the winning hand scored by clicking on the Score Buttons (see *After the Hand*, page 14).

A complete hand with no "extras" is scored at 0 extra points. Extras are listed below:

- ❖ Pure* = 6 points
- ❖ Semi-Pure* = 3 points
- ❖ All Chow = 1 point
- ❖ All Pong/Kong = 3 points
- ❖ Winning tile "Self-Picked" (not a discard) = 1 point
- ❖ 1 or 2 Dragon Pongs/Kongs = 1 point each
- ❖ 2 Dragon Pongs/Kongs and a Pair of the third Dragons = 4 points
- ❖ 3 Dragon Pongs = 6 points
- ❖ Pongs/Kongs of Winds matching the Round or Seat = 1 point (indicated by a highlight).
- ❖ No Flowers = 1 point
- ❖ Flowers matching Seat value = 1 point each
- ❖ All four Red Flowers or Blue Flowers = 1 point
- ❖ Kong + Self-Pick** = 2 points
- ❖ Winds & Dragons (only) = 7 points

Note: 4, 5, or 6 points is called a FULL HOUSE. 7, 8, or 9 points is called DOUBLE FULL HOUSE. 10 points or more is called TRIPLE FULL HOUSE. For more information, see *Payoffs*, page 29.

- * A hand which has sets from only one of the regular suits (Characters, Sticks, or Balls) and sets of Winds and/or Dragons is *Semi-Pure*, and is worth 3 extra points. A hand which only has sets from one suit is *Pure*, and is worth 6 extra points.
- ** Whenever you make a Kong, you always pick up a fresh tile to maintain a 13 tile hand. If that tile causes you to win, you will get 1 point for Self-Pick plus a 1 point bonus.

SPECIAL HANDS

The following winning hands are very difficult to achieve, but are worth extra points to the lucky player who does:

SEVEN PAIRS



Seven Pairs of any tile - 4 points.

ONES AND NINES (Thirteen Unique Wonders)



Ones and nines of each suit plus each Wind and Dragon, for a total of thirteen tiles; pair any tile for a complete, winning hand. This is a **MAXIMUM HAND**, worth at least 10 points.

GATES OF HEAVEN



This exact hand in any suit (tiles must all be *loose* in your hand, not played in Sets). Nine possible combinations. This is a **MAXIMUM HAND**, worth at least 10 points.

JADE DRAGON



Pongs of any **STICKS** and Pong of **GREEN DRAGON**. This is a **MAXIMUM HAND**, worth at least 10 points.

PAYOFFS

Chips are paid according to the following table:

Points	by Discard	by Self-Pick
0	4	6
1	8	12
2	16	24
3	32	48
4,5,6*	64	96
7,8,9*	128	192
10+*	256	384

* **Note:** 4, 5, or 6 points is called a **FULL HOUSE**. 7, 8, or 9 points is called **DOUBLE FULL HOUSE**. 10 points or more is called **TRIPLE FULL HOUSE**.

SCORING EXAMPLES



Not all Pong; not all Chow; no Purity — if by discard and no paying Flowers: 0 POINTS.



Not all Pong; not all Chow; Semi-Pure; Dragon Pong — if by discard and no paying Flowers: 4 POINTS.

NINE PIECES PENALTY

If any of the other players has three sets of one suit showing, a warning will appear to remind you of the following rules:

- ❖ If you throw a tile of the same suit, and it causes them to win, and their hand is Pure, you must pay for everyone. This will amount to 64, 128 or 256 chips!
- ❖ If you discard a tile that causes a player to have twelve pieces of the same suit revealed, and that player then picks up the winning tile, and their hand is Pure, you must pay for everyone. This will amount to 192 or 384 chips!

MINIMUM HAND

There are certain rules that you and your opponents decide on at the beginning of each session. Minimum Hand is one of these. A Mahjong hand can be complete but not worth any extra points (0 points). This is known as a "chicken hand". During the game, click the left mouse button as if to claim a tile; the minimum hand is displayed on the right side of the Claim Menu; if chicken hands are allowed, the chicken appears above an "OK". Otherwise, the chicken is crossed out, and the minimum number of points allowed appears in a box.

When you choose your opponents, the minimum number of points they'll play for is displayed on-screen; you must play for the highest (0, 1 or 2) number of points they request. If they want a minimum 1 or 2 point game, you'll need 1 or more Flower points, Dragon Pongs or Kongs, or something else of value to win (see *Scoring*, page 26).



REMEMBER: When playing with Uncle Chen, if you declare in error you'll pay the ultimate penalty (128 chips to each) — be sure to count your points before you declare!

FIFTH TILE PENALTY

This penalty occurs when there are fewer than five tiles left in the wall, and any player throws a tile not yet seen, which another player claims to win. In this instance, the offending player pays for everyone at the table. This rule is decided at the beginning of a game; some opponents, such as Uncle Chen, insist on it.

Beginners concentrate on making a complete hand so that they can win something. EXPERTS KNOW THAT IT'S IMPORTANT TO PREVENT OTHERS FROM WINNING. This often requires destroying your hand by throwing the least risky tile, especially late in the hand. When there are only a few tiles in the wall, avoid throwing tiles that are the same suit as an opponent's revealed tiles, and tiles which have not previously been thrown.

STRATEGY TIPS

In General

- ❖ Though the element of luck is great, the long-term winnings go to the player who pays attention and makes good, intelligent decisions. Try to balance your desire to build a high-paying hand with the need to "go out" (win) before the other players.
- ❖ There are only four of each tile. Be sure you aren't waiting to win your hand on a "dead" tile.
- ❖ "Gut cards" are the middle cards that your opponent may use to Chow (2,3,4,5,6,7 and 8 of any suit). If you are going for a big hand, throw the gut cards early, before your opponent has time to collect more cards to Chow them. If you are going for a Chicken Hand, keep these cards, because the chances that you will get another consecutive numbered card is high. Throw an "end card" instead (a 1 or 9). Generally, throwing an end card is always safer than throwing a gut card.
- ❖ Avoid going for an all Pong hand unless you have at least three pairs in your hand to start with.

Chicken Hands (0 points)

- ❖ Think carefully about going for Pure, Semi-pure, or Special hands when playing chicken hands (0 points); your opponents are likely to try to win quickly with combinations of Chows and Pongs. Your best odds are to go for the simplest hand.
- ❖ Always check the Round and Seat Winds, and play your Winds carefully; Winds that are not worth any points to you, ARE worth at least a point to one of your opponents. Throw these Winds out early, before your opponents have time to pair up their paying Winds. Pongs of winds that do not match the round or your seat are of no extra value in a simple hand, but you should keep non-paying Winds if you are going for a Pure or Semi-pure hand. And certainly keep winds that are worth a point to you!



1 Point (or Better) Hands

- ❖ Pay attention to the Flower Tiles; if you have no flowers, you have one point, and a combination of Chows and Pongs will allow you to win. However, if you pick up a flower that does not match your Seat, you lose the Flower bonus, and if you have already Ponged and Chowded sets of tiles, you may find that you cannot reach the minimum hand. The safest thing to do is go for all Chow, or wait until you have at least one of your own flowers before Ponging.

PROBLEMS WITH THE GAME?

If you are having a problem installing or playing the game, we want to help. First, please make sure you have read the *Installing Hong Kong Mahjong Pro* section of this user's guide thoroughly, and make sure you have at least 4.8 Meg free on your hard drive. If you have followed the directions in the documentation, and are still having trouble installing or operating the software, here are some hints that might help solve the problem. Before attempting any of the following suggestions, please make sure you are familiar with the MS-DOS commands being used, or consult your MS-DOS manual for more information.

Minimum system requirements:

- IBM® or 100% compatible 286, 386SX, 386 or 486 PC system
- 640K RAM
- MS-DOS 3.0 or higher
- Hard drive with at least 4.8MB free space
- VGA graphics card and VGA color monitor
- Microsoft-compatible mouse

Optimal system (in addition to minimum requirements):

- 25MHz or faster 80386 100% compatible system
- Roland MT-32 or LAPC-1, Thunderboard or Pro AudioSpectrum, Sound Blaster or Sound Blaster Pro or AdLib® sound card
- Super-VGA graphics adapter with Tseng Labs, ATI Technologies Inc., Paradise™ or Video Seven chipsets.
- 2MB RAM with at least 160K configured as EMS.
- Expanded memory (EMS) manager such as EMM386, QEMM or 386MAX. This will allow Super-VGA users 640 x 480 lines of resolution and 256 colors.
- Disk caching software such as PC-Kwik or Smartdrive.

Notes on Graphics cards

Once *Hong Kong Mahjong Pro* has finished installing, the configuration program (HKCONFIG.EXE) is loaded, and begins examining your system. The configuration program checks for 160,000 bytes (160K) of expanded memory (EMS) and for a Super-VGA graphic adapter with chipsets manufactured by Tseng Labs, ATI Technologies Inc., Paradise™, or Video Seven. If both EMS and a compatible Super-VGA graphics adapter are found, a confirmation screen appears.

If both conditions are not met, the configuration program reports what it has found. If it detects EMS only, a green text message reports the amount found. If no EMS is found, a red text message appears. To find out more about EMS see the *Conventional, Extended and Expanded Memory* section below.

If none of the Super-VGA chipsets are found, a text message appears. If you have a graphics adapter with the correct chipset, the configuration program should detect it. If the program is unable to identify your card, and you are positive that your card contains one of these chipsets (either through physical inspection or through the documentation), you can attempt to force the game to recognize your card using a command line option.

To use a command line option, type one of the following options after the program name when loading the game:

TS	=	Tseng Labs
ATI	=	ATI Technologies Inc.
PAR	=	Paradise™
V7	=	Video Seven

*Example: to force the Tseng Labs video mode, type **hkmj ts** and press ENTER.*

If the monitor fails to display the program correctly, then your adapter does not follow the standard setup by the respective chipset manufacturers.

Notes on Sound Cards

In the configuration program, if you select SoundBlaster, Thunderboard, or compatibles for your Voice Board, but find that the game doesn't use your card, you might have different addressing. You must specify the correct IRQ and I/O address for the card. The defaults are IRQ 7, and I/O address 220h, which are the standard defaults for most voice boards. If you have different settings on your board, change it in the configuration program. To do so, press S, type the correct values for your card, and then press X to save the change. You can also press Q to quit without changing.

In the configuration program, if you select Roland for your Music Board, but find that the game doesn't use your card, you might have different addressing. You must specify the correct address for the card. The default is 330h, which is the primary default address for Roland. If you have

different settings on your board, change it in the configuration program. To do so, press R, type the correct values for your card, and then press X to save the change. You can also press Q to quit without changing.

Consult your sound card manual for more information.

Memory requirements

Due to the high resolution graphics of *Hong Kong Mahjong Pro*, we require 640K RAM minimum installed on your computer. You also need to have at least 562K free RAM (571,000 bytes) to run *Hong Kong Mahjong Pro*.

Color Display Mode	Free Memory Required
256 color with EMS	571,000 bytes free
16 color with EMS	557,000 bytes free
16 color without EMS	567,000 bytes free

*Example: If you have enough EMS available, and you type **chkdsk** then press ENTER, and a message states: "568,000 bytes free", you will only be able to run the program in 16 color mode. To get 256 colors, you would need to free up an additional 3000 bytes of memory. To find out more about freeing memory, see Finding Free Memory, page 36.*

How to find it:

- If you have MS-DOS 5.0: type mem /c and press ENTER. Look for the line, "Largest executable program size".
- If you don't have MS-DOS 5.0, type chkdsk then press ENTER. Look for the line, "bytes free". This number must be equal or greater than the amounts shown below to run in that many colors.

To find out more about EMS see the *Conventional, Extended and Expanded Memory* section below.

Conventional, Extended and Expanded Memory

Most IBM and 100% compatible computers come with at least 640K RAM. This first 640K RAM area is referred to as Conventional Memory. RAM memory starting at 1MB is known as Extended memory. For example, if you have a system with 2MB RAM, you have 640K of Conventional memory, and 1MB of Extended memory available to your applications. *Hong Kong Mahjong Pro* utilizes Expanded Memory (EMS) in order to provide you with 256 colors with your Super-VGA card.

Note: The area of memory between 640 and 1024 is referred to as Upper Memory Block or UMB. If you are using MS-DOS 5.0 or a memory manager such as QEMM or 386MAX, it will take advantage of this area of memory. For more information, consult the manual of your memory manager.

Extended memory can be converted to Expanded memory by using an expanded memory manager (software) that complies with the LIM 4.0 standard. EMM386.EXE from MS-DOS 5.0, QEMM.SYS from Quarterdeck, and 386MAX from Qualitas are some examples of expanded memory manager (EMM) software. In order to take advantage of your memory manager, you need to install it in your system by adding a line to your CONFIG.SYS file. For example, if you are using MS-DOS 5.0 or Windows, you should include the following lines to your CONFIG.SYS in this order:

```
DEVICE=<PATH>\HIMEM.SYS  
DEVICE=<PATH>\EMM386.EXE
```

An example of <PATH> might be C:\DOS

Most memory managers have a routine that helps you through the installation. Consult the manual that came with your EMM software for more information.

Finding Free Memory

If you are running out of memory, the following suggestions may help you increase your memory enough to allow you to run *Hong Kong Mahjong Pro*. You should try these techniques only if you feel comfortable editing your CONFIG.SYS and AUTOEXEC.BAT files.

TSRs, Device Drivers, and DOS shells

TSR stands for Terminate Stay Resident. A TSR is a program (such as SideKick®) that automatically executes itself when you start up your computer from a hard drive. TSRs are generally installed in your AUTOEXEC.BAT file. Device Drivers and DOS shells are also loaded automatically, and are usually installed in your CONFIG.SYS file.

These TSRs or Device Drivers sometimes interfere with games, or take up valuable memory the game may need, and it is generally recommended that you not run any such programs, Device Drivers, or shells when attempting to install or play a game.

DOS boot disk

If you are having trouble installing, experiencing unusual lockups, or other problems, we suggest you try starting up your system with a DOS Boot disk. Below are the steps for creating a DOS boot disk. Please have a blank disk of the appropriate size for your A: drive, and follow these steps exactly.

1. Type c: and press ENTER.
2. Type format a:/s and press ENTER.
3. When the computer prompts you, insert a blank disk into drive A, then press ENTER.
4. Once the disk is finished formatting you will be asked whether you wish to format another. Answer N and press ENTER.

You now have a DOS boot disk. You can start your computer from this disk by inserting it into the A: drive and restarting your machine. Your computer will boot up to the A: prompt. This boot disk bypasses the AUTOEXEC.BAT and CONFIG.SYS on your hard drive and starts up your computer in as clean a DOS environment as possible. Try re-installing the software if you were having trouble doing so, or try starting the software from the drive and directory you installed to. If the software you are trying to run requires a sound driver or mouse driver, don't forget to load those before starting your game.

Disk caching and software

Hong Kong Mahjong Pro is compatible with disk caching, such as SMARTDRV.SYS or PCKWIK.SYS. The game will automatically take advantage of it, providing you with faster smoother play.

Note: For general information on optimizing your system, consult your MS-DOS manual. **IMPORTANT:** Be sure to create backups of your CONFIG.SYS and AUTOEXEC.BAT files before you start editing them. Some editors automatically do this for you; check the manual of your editor for more information.

TECHNICAL SUPPORT

If you have questions about the program, our Technical Support Department can help. If your question isn't urgent, please write to us at: Electronic Arts Technical Support
P.O. Box 7578
San Mateo, CA 94403-7578

Please be sure to include the following information in your letter:

- Product name
- Type of computer you own
- Any additional system information (like type and make of monitor, video card, printer, modem etc.)
- Type of operating system or MS-DOS version number
- Description of the problem you're having

If you need to talk to someone immediately, call us at (415) 572-ARTS Monday through Friday between 8:30 am and 4:30 pm, Pacific Time. Please have the above information ready when you call. This will help us answer your question in the shortest possible time.

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MANUAL BY MARTI McKENNA

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NINE DRAGONS SOFTWARE

Nine Dragons Software is Julian Robert Fitch, and has been alive approximately 2 years. Julian himself has been alive approximately 43 years, during which time his accomplishments have included attending (and dropping out of) the College of William and Mary in Williamsburg, VA., and holding various occupations including that of goldsmith, tour guide, truck driver, telephone lineman, technician, and teacher. Mr. Fitch declined comment on his apparent preference for activities beginning with the letter "T", and points out that his hobbies (mahjong, billiards, photography, and computer graphics) do not support such a theory. Fitch was later heard to remark that *travel* (in Asia) was also among his favorite activities ... you be the judge.

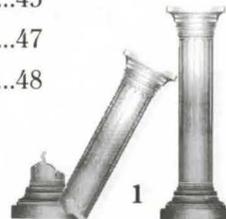
Acknowledgments

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POPULOUS® II

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GETTING STARTED

SYSTEM REQUIREMENTS

To play *Populous II*, you need an IBM PC or compatible computer with a hard drive and a mouse. You must have a minimum 11 MB of free space on your hard disk, and your system must be running MSDOS 3.3 or greater. Expanded Memory (EMS) is required. The minimum amount of base memory and EMS you need depends on the kind of display you select and the sound source you have.:

Lo-Res 320x200 256 colors with:	Base	EMS
No Sound	485,376 bytes	272K
Internal Speaker	539,649 bytes	272K
Sound Blaster	543,744 bytes	272K
Hi-Res 640x480 16 colors with:	Base	EMS
No Sound	558,480 bytes	1040K
Internal Speaker	613,600 bytes	1040K
Sound Blaster	617,760 bytes	1040K

Populous II requires Expanded Memory. If you do not have memory manager software on your system you will not be able to use EMS. In high resolution mode you need 1040K of EMS and in low resolution mode you need 272K of EMS. consult your memory manager documentation if you are not sure how much EMS you have available.

INSTALLING POPULOUS II ON YOUR HARD DRIVE

The install program included on your game CD-ROM does three things:

- Creates a directory on your hard disk for the game.
- Copies the necessary game files into the directory.
- Creates a batch file containing the graphic and sound configuration for your computer.

To install Populous II:

1. Insert CD-ROM into the appropriate CD-ROM drive.
 2. Switch to the drive you inserted the disk in. For example, if you inserted the disk in drive D, type **D:** and press **Enter**.
- Note:** You *must* switch to the CD-ROM drive before you execute the **INSTALL** command — you *can't* simply type **D: INSTALL**.
3. Type **CD\POP2** and press **Enter**.
 4. Type **INSTALL D: C:** (substitute the correct drive letters for your CD-ROM and hard drives) and press **Enter**. Populous II is installed to the POP2 subdirectory of your hard drive.

LOADING POPULOUS II

To load Populous II:

1. Boot your computer as you normally would.
2. Make sure that your mouse driver is loaded.
3. Switch to the drive you installed the game on. For example, if you installed the game on the C drive, type **C:** and press **Enter**.
4. Type **CD\POP2**. Press **Enter**.
5. Type **GO** and press **Enter**. An animated intro plays. Watch the intro, or press any key to go to the Game Menu.

Note: You must use the **GO.BAT** command to start Populous II. If you type **POP2** to start the game you will not hear any sounds.



SPECIAL PARAMETERS

When you start *Populous II*, the program automatically uses the configuration you specified when you *installed* the game. However, you can start the game in high resolution graphics or with a different sound mode by adding a few extra characters (called *arguments*) to the **GO** start command.

Example: Let's say you wanted to start the game in high resolution graphics mode. You'd type **GO /H** as your start command.

The order of the extra arguments doesn't matter as long as there's a space between each argument. Here are the arguments you can use:

- /H** High resolution graphics mode. You must have a VGA graphics card to run the game in high resolution graphics mode.
- /SI** Internal speaker sound effects.
- /SS** Sound Blaster sound effects. You must have a Sound Blaster sound card.
- /SN** No sound effects.
- /L** MCGA graphics mode.



NOT ENOUGH DISK SPACE?

After you've installed the game, you may find that you need space on your hard drive for other things. You can free up the animated intro to the game — this has no effect on gameplay, though you'll no longer be able to watch the animated intro.

Assuming for a moment that the game is located on the C drive, the two files you must delete are:

C:\POP2\INTRO.EXE

C:\POP2\DATA\INTRO.DAT

Once you've deleted the files, you can start the game as usual with the **GO** start command. You'll notice a "Bad Command" error message when you enter the command — pay no attention to it, the game will load and the Game Menu will appear shortly.



WELCOME TO POPULOUS II

OVERVIEW

As one of the many sons of Zeus the All-Father, you demand your rightful place among the gods on Mount Olympus. But Zeus isn't about to give you your inheritance just for the asking. You must prove your worthiness by defeating the 32 divine opponents who rule the 1000 worlds of Populous II.

CREATE YOUR DEITY

Your first task is to create the kind of deity that you want to be. You choose the eyes, mouth and headpiece that indicate whether you're benevolent and wise, fierce and war-like, brutish and cruel, or some bizarre combination of these characteristics.

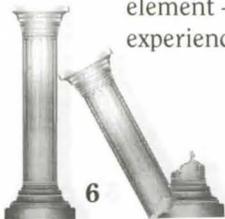
Your god's personality affects how opponents react to you. For example, if your deity looks aggressive, your opponent wages war harder. If your deity looks like a scholar, the combat is more subtle and clever.

CONQUEST GAMES ARE PART OF A SERIES

There are two ways to play Populous II: Conquest Games and Custom Games. In Conquest mode, you must conquer a series of worlds. Each world gets progressively harder as you face tougher terrains, stronger gods, and more potent divine powers (known as Divine Intervention Effects).

EACH CONQUEST EARNS YOU EXPERIENCE

If you played a Conquest Game well, you're awarded experience. After each conquest, you can exchange your experience for greater power in the six forces of nature. You can decide to concentrate on a particular element — becoming, say, a fire god — or you can spread your experience over all the forces.



THE ULTIMATE GOAL — DEFEAT ZEUS

The final battle in the Conquest series is against your father and supreme master, Zeus. Defeat Zeus and you can take your seat among the gods.

CUSTOM GAMES LET YOU CALL THE SHOTS

In Custom mode, play a random land with all the effects you have earned in your Conquest games. For example, if you have played three Conquest games and seen a variety of different effects, in Custom mode you'll be able to play a game with all those effects combined.

CONQUEST PROGRESS AFFECTS CUSTOM GAMES

In a Custom Game, the Divine Intervention Effects you can do are limited by your progress in the Conquest series — you can't do effects you haven't already used in a Conquest Game. This is the only limitation to the kind of Custom Game you can make.

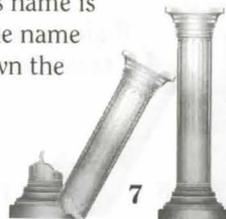
IN THE BEGINNING...

CHOOSE A CONQUEST GAME

Left-click on Conquest Game at the game menu. The Next Conquest screen appears:

The Next Conquest screen shows you which Divine Intervention Effects and special rules apply to the world you're about to conquer. In this first world you can only do five Effects: Raise And Lower Land, Place Papal Magnet, Ordain Perseus, Armageddon, and Column Of Fire. A tick (✓) indicates that a special rule applies to you in this world — for example, the tick next to "Water Is Fatal" indicates that people always drown if they fall in water.

There are 1000 worlds in the Conquest series. Each world has a number and a name. The number for the first world in the series is 0; its name is DOEGAC. Each time you conquer a world, Zeus will give you the name of the next world he wants you to do battle on. Always write down the



name of any world Zeus gives you. If you quit Populous II, you'll need this name to continue the Conquest series where you left off.

Click proceed to begin the game.

PAUSING THE GAME

Once the battle starts, you'll want to pause the game from time to time so you can follow the tutorial. To pause the game, press the F10 key. To resume the game, press F10 again.

THE BATTLE BEGINS

When the game begins, you're looking down at your worshippers.

The World Map is a view of the entire world you're currently on. Good and Bad populations inhabit the world usually on opposite sides of the map.

The Close-Up Map is a magnified view of a point on the World Map. All divine activities are carried out here.

Walkers represent a number of people wandering the land as a tribe seeking to establish well-populated settlements. Walkers need shelter against the climate and they'll settle on any piece of flat land that can support them. When they settle, they create dwellings.

Divine Intervention Effects are an arsenal of awesome powers and potent disasters. There are six categories or elements, each with five individual Effects, with the exception of Fire, which has four effects. The Effects you can do depend on the world you're fighting on.

The Mana Gauge measures your Mana. Mana is a reservoir of power you can use to do Effects. Mana comes from the pious worship of your followers — the more worshippers you have, the greater your Mana. The red line at the base of the Mana Gauge indicates your total Mana. The pointer indicates which Effects you can currently do.

Right now you only have enough Mana to raise and lower land. Occasionally you'll use up your Mana and won't be able to raise or lower

land, but don't worry. As you help your people multiply, your Mana will increase.

The Basic Commands let you influence the general behaviour of your followers, get information on populations and settlements, and bring up the Game Requester.

The Colosseum is a population indicator for both Good and Bad worshippers. As populations change, the Colosseum fills and empties to reflect the fluctuating numbers of dwellers. Good populations appear in blue — Bad populations appear in red. The Colosseum can also be used to track walkers and settlements and get information on their strength and inventions.

CHANGING YOUR VIEW

Changing your view is fundamental to playing Populous II. There are several ways to change your view. The easiest is to scroll with the **cursor keys** or the **numeric keypad**.

The World Map can also be used to change your view. The area you're currently viewing is marked with a black diamond:

Point to the World Map and click a mouse button. A right-click jumps your view to the spot you're pointing to. A left-click moves your view one increment in that direction.

You can also scroll your view by clicking on the directional arrows around the World Map. The longer you hold down the mouse button, the more the map scrolls.

FLATTEN LAND

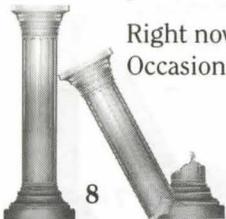
Your followers need flat lands to farm and settle on, so the first thing you should do is flatten the landscape around their settlements. The lay of the land is on a grid of squares, so you'll raise and lower land square by square. Note: on some worlds you won't be able to raise and/or lower on either your land or your enemy's land.



Divine Intervention Bar



Lower Land





Raise Land

To raise a square of land, move the diamond cursor to the centre of the square and left-click.

To lower a square of land, move the diamond cursor to the centre of the square and right-click.

CREATE LARGE SETTLEMENTS

Creating new settlements is fundamental to winning a world. Settlements grow according to the amount of farmland around them — the more farmland, the bigger the settlement.

The biggest settlements are castles. Castles increase your population the fastest, so initially they're the most valuable. Castles are also the most technologically advanced, and better weapons means your people will be more effective fighters. To create a castle, flatten the land widely around any dwelling.



Sprog Demo

SETTLEMENTS AND SPROGGING

As a settlement fills with people, its flag rises. When its flag reaches the top, the settlement is full. At this point, a walker will automatically leave and go in search of a new place to settle.

In the early parts of a battle, you don't want to wait for your settlements to fill up before releasing walkers. The more large settlements you have, the faster your population will rise. This is where the technique of sprogging comes in. Sprogging is the most important means of spreading your population. When you sprog, you're commanding a settlement to send a portion of its population out into the world in search of a new home.

To sprog a walker from a dwelling, point to the centre of a dwelling and click the right mouse button. The diamond cursor must be on the exact centre of the dwelling:



USE DIVINE INTERVENTION EFFECTS

Once you've increased your Mana, you can use some of the five Effects available on DOEGAC. To switch between People Effects and Fire Effects, click on the appropriate icon.



Divine Intervention Example

FIRE EFFECTS

The one Fire Effect available on DOEGAC is Fire Column, which starts a huge column of fire that moves across the land. To do a Fire Column, left-click on the Fire Column icon.

A small column on the pointer indicates that the column is now ready to be set down.

Move the cursor up the Close-Up Map and left-click to set the column down — it will appear in a somewhat random location. As dwellings burn, enemy worshippers perish. Any land that the column moves across will turn orange, indicating that it's scorched and ruined. The enemy will have to raise or lower the ruined land in order to make it arable farmland again.



Fire Icon

PEOPLE EFFECTS

There are four People Effects available on DOEGAC.

- *Raise and Lower Land:* You know this one already. This lets you flatten landscape into farmland by raising and lowering land.
- *Place Papal Magnet:* This lets you place your papal magnet anywhere on the Close-Up Map. Left-click on this button, and then move your cursor to the Close-Up Map and left-click again. You cannot place your papal magnet unless you have a leader.
- *Ordain Perseus:* This changes your current leader into the hero Perseus, who marches through your opponent's land and destroys any settlements or people he encounters. Simply left-click on this icon to call the hero.
- *Armageddon:* This forces Good and Bad to fight until only one population survives. Only use this Effect when your population is significantly greater than the enemy's.



PAPAL MAGNETS

The papal magnets are icons of worship for Good and Bad. You can move your magnet to Bad territory, then influence your worshippers to go to it and invade Bad settlements. The first of your walkers to encounter your magnet becomes your *leader*. Convert strong leaders into special walkers called *Heroes* with your papal magnet. You cannot place your papal magnet unless you have a leader.

USE INFLUENCE BEHAVIOUR COMMANDS TO MOVE PEOPLE

Use the Influence Behaviour Commands to influence the behaviour of your followers. The Influence Behaviour commands are available on every world and can be used without cost to Mana.



Behaviour
Commands

- *Go to Papal Magnet:* Influence your people to find their ordained leader and follow him to the Papal Magnet. You can always find the leader by right-clicking on this option. Use this option to draw your leader and worshippers together, then turn your leader into a hero. If you like.
- *Settle:* Influence your walkers to build new dwellings and your people to reproduce. To encourage faster settling, sprig worshippers from their dwellings by right-clicking on any house.
- *Fight:* Encourage your walkers to attack Bad settlements and worshippers. Fight also encourages your people to settle and produce more walkers for battle.
- *Gather Together:* Encourage your walkers to walk toward each other and combine into one stronger walker. Note that each walker represents a group of people, so when your walkers are gathering together, tribes are actually combining to make a larger troop. Use this behaviour when you want to build and strengthen walkers. This option also influences your people to settle as they come together.

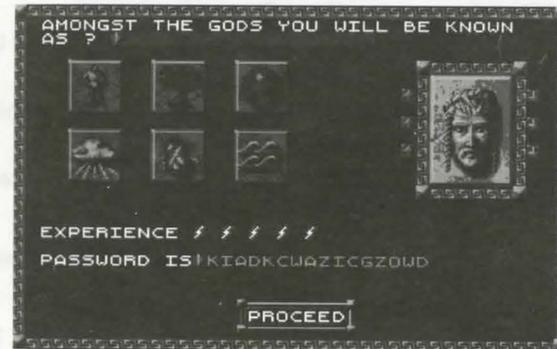
GAME MENU



Left-click an option in the Game Menu

CREATE YOUR DEITY

Lets you create and name your deity and assign any experience you've earned to one of the six elements.



Left-click on Proceed to return to the Game Menu



NAMING YOUR DEITY

To name your deity:

1. Left-click on the name bar. A flashing dot appears.
2. Type the name of your deity and press **Return**.

SAVING YOUR DEITY'S NAME

You can save the name of your deity to your hard drive. The name can be up to 14 characters long. The file that's created under your deity's name contains your progress in the Conquest series, the password for your next world, your deity's experience, and your last game speed setting.

Only one deity can be saved at a time. If you select **Save**, then *Populous II* will write over any previously saved deity.

CREATING YOUR DEITY

Create your deity's looks carefully because they'll effect the way your opponent god battles you. Choose a scholar's hat and wise eyes for clever combat, or a warriors helmet and angry eyes for a ruthless battle experience.

To create your deity:

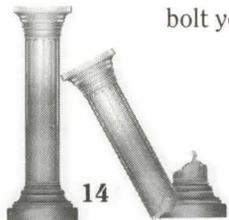
1. Left-click on a selection arrow next to the feature you want to change. Keep clicking to cycle through the various features.
2. If you need to back up, click the selection arrow opposite the one you're using.

Choose your eyes, headpiece, and face carefully — your appearance actually affects your opponent's reactions.

ASSIGNING EXPERIENCE

To assign any experience you've earned:

1. Point to one of the six elements and left-click once for each lightning bolt you want to assign.

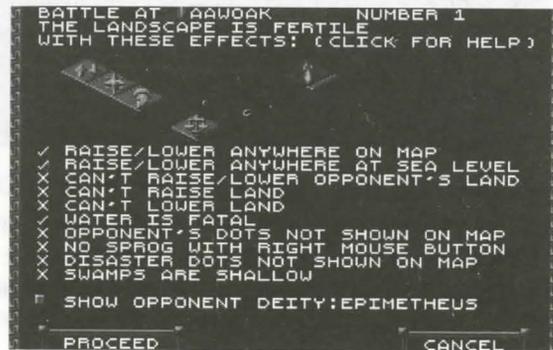


- The right half of the element icon turns gold one increment for each lightning bolt you assign. When the right half is full, the left half turns gold one increment and the right half goes dark again.
2. *Write down your password*. You can re-enter this password in the same slot next time you want to restart this game.

CONQUEST GAME

Choose **Conquest Game** to play all the worlds in progression of difficulty. As you progress and gain experience, opponents get stronger and more crafty, landscapes get more harsh, options are restricted, and available Effects change.

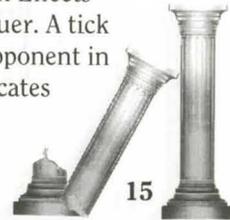
There are 1000 worlds in *Populous II*, but you don't have to complete each one in order to face Zeus in the final combat. If you demonstrate sufficient skill, you can skip worlds — for example, you could go from world 0 to world 18, and from there go to world 26, and so on.



NEXT CONQUEST SCREEN

When you choose Conquest Game, the Next Conquest screen appears:

The Next Conquest screen shows you which Divine Intervention Effects and special parameters apply to the world you're about to conquer. A tick (✓) indicates that a special rule applies to both you and your opponent in this world — for example, the tick next to "Water Is Fatal" indicates



that people will always drown if they fall in water. An X indicates that a rule does not apply.

NAMES

Each time you start a world, you receive the name of the next world you are to conquer. *Always write down this name.* If you quit Populous II, this is the only way you can resume the Conquest series where you left off.

To resume the Conquest series where you left off:

1. Select **Conquest Game** from the Game Menu. The Next Conquest game appears.
2. Click on the **Battle At** bar. A flashing dot appears.
3. Type the name of next world for you to conquer and press **Return**.

CUSTOM GAME

Through playing a few conquest games, you experience different combinations of Divine Intervention Effects and earn new ones. Choose Custom Game to play a random landscape using all the Effects you've earned so far in your Conquest games. CUSTOM GAMES WON'T ADVANCE YOU TOWARD FINAL VICTORY AGAINST ZEUS.

CONQUEST TO CUSTOM GAME KEY

Press **Alt-C** to change a Conquest game to a Custom game. Once you've changed it, you can't change it back to a Conquest game. Note that your success or failure in the Custom game has no effect on your progress in the Conquest series.

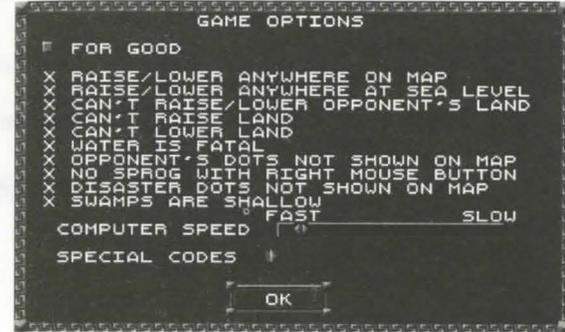
ADJUSTING GAMEPLAY

Custom Games start out very hard, so to adjust it to your level:

1. Left-click on the Game Requester icon to bring up the Game Requester.
2. Left-click on Game Options to bring up the Game Options Requester.



3. Left-click on any of the options to change any of the special parameters for Good (you).
4. Left-click on the green button next to For Good to change it to For Bad. Now left-click on any of the options to change any of the special parameters for your opponent. Initially your opponent can create and destroy land very fast, so you may want to alter Bad's abilities to raise and lower land and slow your opponent down with the COMPUTER SPEED bar.
5. Left-click on **OK** to return to the game.



LIMITING EFFECTS IN A CUSTOM GAME

In a Custom Game, you can limit which Effects you and the opposing diety are capable of for example, say you started a Custom Game and at some point you decided that the opposing diety shouldn't have Fire Burst in his arsenal of Effects. You could "turn off" the Fire Burst effect in his arsenal.

Note: You can't turn on Effects which were not available when you first started the Custom Game.



PAINT MAP MODE

The Paint Map mode lets you customise games further by letting you:

- Change maps and landscapes
- Adjust Mana levels for both sides
- Set down walkers, trees, and rocks on the map

For details on the different Paint Map options, see Game Requester under Basic Commands.

SAVING GAMES

You can save any game while it's in progress.

To save a game in progress:

1. Left-click on the Game Requester icon.
2. When the Game Requester appears, left-click on the **Save Game** button. The Save Game Requester appears.
3. Left-click on the **File** bar. Type a name for your saved world, and then press **Enter**.
4. Left-click on **Save**.

LOADING SAVED GAMES

You can load a saved game from the Game Menu or from the Game Requester.

To load a saved game:

1. If you're currently in a game, left-click on the Game Requester icon. When the Game Requester appears, left-click on the **Load Game** button.
If you're not in a game, you must find your way to the Game Menu. Once you're there, left-click on Load Game.
2. Left-click on the up-down arrows to scroll through the saved game files. When you see the name of the game you want to load, left-click to bring the name up in the file bar, and then left-click on **Load**. (Alternately, you can simply double-click on the file name to select it.)

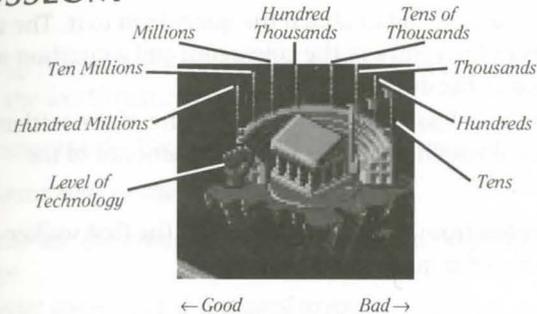


QUIT KEY

When playing a game, you can quit by pressing **Shift-Esc**, or by selecting the **Quit Map** option from the Game Requester. When the Game Menu is showing, pressing **Shift-Esc** quits the game altogether and takes you to DOS.

CONQUERING WORLDS

COLOSSEUM



The colosseum reflects population and level of technology of the world, a settlement, or a walker.

WORLD POPULATION

Use the colosseum to check up on the world's population from time to time. As the Good (blue) and Bad (red) populations grow, representatives of both sides enter the colosseum. Good worshippers dressed in blue sit on the left, Bad worshippers dressed in red sit on the right. The blue and red representatives of the general population never leave. They are always showing and always represent only the total population of the world.



SETTLEMENT POPULATION

You can check on the population of a settlement at any time. Query any settlement and you'll see the level of technology from a fist (very primitive) to a sword (very advanced), and a population count in the form of eight flags moving up and down flagpoles around the back of the colosseum. It appears in decimal order:

To check the population of a settlement:

1. Left-click on the Query icon
2. Move your cursor to a settlement on the close-up map
3. Left-click on the dwelling to attach the query icon to it. The settlement appears in the centre of the colosseum and a question mark appears on top of the dwelling.

In the middle of the colosseum, you'll see a picture of the settlement. The flags on the colosseum flagpoles reflect the amount of the population.

If you prog a walker from a queried settlement, the first walker out of the settlement takes the query mark with them.

WALKER POPULATION

Walkers represent a certain number of people in a tribe. When you query a walker, he or she appears in motion in the middle of the colosseum. Their tribe's total population is displayed on the eight flagpoles behind the Colosseum (see Settlement Population above for how to read the flagpoles). When a queried walker settles, joins another walker, or another household the query is transferred to the new walker or dwelling.

The Level of Technology of a walker appears in the form of weapons in the lower left corner of the colosseum. A fist indicates the lowest form of technology, a sword the highest.



To check a walkers population:

1. Left-click on the Query icon
 2. Move your cursor to the person or settlement you want to query
 3. Left-click again
- A question mark appears on top of a queried walker

CLOSE-UP MAP

The close-up map is where you carry out all divine commands and effects. View settlements, watch battles, lay waste to enemy land, build your land.

The close-up map reflects the section of land that is covered by the black cursor on the world map.

You can move around the Close-Up Map several ways.

Use the cursor keys or the number pad:

You can also use the brown directional arrows around the edge of the World Map:

1. Move your cursor to a directional arrow
2. Left-click to move one increment in that direction

FULL SCREEN/NORMAL SCREEN

You can press **F7** to go to Full Screen View.

Full Screen View lets you see more of the Close-Up Map at one time. You can use the same effects and commands available to you in Normal View.

In Full Screen View, each available Divine Intervention Effect is indicated by a vertical mana line under the icon for each Effect's category. For example, under the People Effect's icon the mana line to the left indicates that you have enough Mana to raise and lower land.

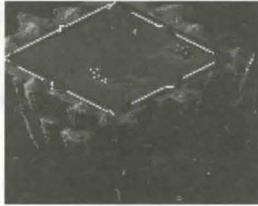


If you select an Effect and then spend so much mana that the Effect is no longer available, the mana line will disappear — however, the Effect indicator will still be visible on your cursor.

You don't have a Colosseum in Full Screen View, so there's no way for you to guess the population of the world or the technology level of queried walkers or settlements. You can only do this in Normal View.

To return to Normal View, press F7 again.

WORLD MAP



The world map shows the landscape of the world you're currently on.

- Blinking white dots are Good settlements
- Blinking yellow dots are Bad settlements
- Blue dots are Good walkers (your followers)
- Red dots are Bad walkers (followers of the Bad god)
- The small black diamond is the section of the world that is currently on the Close-Up Map
- Grey dots are plauged houses

To move around the World Map:

Put your cursor on the place you'd like to go, then:

- Right-click to jump directly to that point
- Left-click to move towards that point one section. Keep clicking to move further

To scroll around the World map, hold down the right mouse button and move the mouse any direction on the map.

MANA

Mana is the substance from which you draw power. You earn Mana from your populations divine offerings, so increase your population as quickly as you can by sprogging dwellings to create new worshippers and dwellings. In order to use higher-level Divine Intervention Effects, you must have enough Mana, but keep in mind that when you perform an effect, you use Mana up. Different effects cost different amounts, so use your Mana gauge to budget your power.



Mana Bar

INFLUENCING BEHAVIOUR

Manipulate your way to victory by influencing your population's behaviour with the Influence Behaviour Commands. These commands are always available whether you're strong or weak. For information about how to use these commands, see *Influencing Behaviour Commands* under COMMANDS.



WORSHIPPERS AND WALKERS

Worshippers is a term for your entire population. Walkers are the members of your population walking across the land. All worshippers have a level of intelligence according to the level of technology of the dwelling they emerge from.

SPECIAL WALKERS

Some walkers have special attributes.

LEADERS

Both Good and Bad populations can have a leader of people, recognizable by the miniature papal magnets above their heads. When you select the Go To Papal Magnet icon, your people will first go to their leader, then follow them to the papal magnet. Leaders are the only members of your population you can transform into Heroes, and when you do, you'll need to create a new one by selecting Go To Papal Magnet.

HEROES

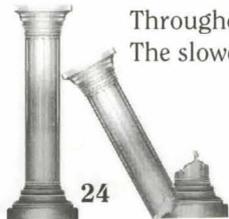
There are six heroes, one from each category of effects. When you have enough Mana, turn your leader into a hero for greater destruction. Heroes tend to be immune to the effects of powers from within their own category.

SOUNDS

Sounds are an important part of Populous II. If you hear the sound of fire burning, an earthquake, or other disaster, check your territory — somewhere your opponent has just done some creative landscaping to your settlements.

HEARTBEAT

Throughout the game, you'll hear a steady heartbeat — your heartbeat. The slower it pounds the more healthy you are.



DINGS

You'll hear a few metallic dings during play of Populous II which mean several different things: possibly a hero has been created or a papal magnet has been moved. Pay attention to events and sounds to be able to identify which sound means what.

EFFECTS

You'll hear the sounds of many different Divine Intervention effects. The effects you cause are only audible when they are showing on the close-up map, but any effects used by your opponent on your land are audible as they happen.

QUITTING A WORLD

To quit a world:

1. Left-click on the Game Requester icon
2. Select SAVE GAME to save the game, or QUIT MAP to quit the world. For more information about saving a game see Saving Games.

COMMANDS

BASIC COMMANDS

The Basic Commands let you influence the general behaviour of your followers, get information on populations and settlements, and bring up the Game Requester:



Command Bar

To use one of these commands, left-click on its icon.

GO TO PAPAL MAGNET

Place your papal magnet in a strategic area then influence your people to walk to it. If you don't have a leader, use this command to get a walker there faster (he'll turn into your leader as soon as he touches the magnet). Remember, you can't place your papal magnet if you don't have a leader.

SETTLE

Influence your people to build and settle on the land you flatten for them.



GATHER TOGETHER

When two walkers randomly run into each other, they become one stronger walker, but influence your walkers to come together into fewer, stronger walkers with this Gather Together command. Your walkers tend to settle during this behaviour, so you'll be building strong settlements as well as people.

FIGHT

Influence your walkers to walk toward Bad settlements and fight for your cause. Your walkers also settle and produce fighters while influenced to fight.

QUERY COMMAND

Left-click on the query command for information about various people and settlements.

To get information:

1. Left-click on the Query icon
2. Move your cursor to a target dwelling or walker on the close-up map
3. Left-click again to attach the query mark to them

Any dwelling or walker with the query mark on them appears in the centre of the colosseum. Only one dwelling or walker can be queried at a time. The colosseum reflects the population and technological intelligence of the walker or dwelling. For more information, see The Colosseum under CONQUERING WORLDS.

GAME REQUESTER COMMAND

Left-click on the world icon to bring up the Game Requester:



The Game Requester lets you save and load games, quit or restart the world, and set various game options.

There are two kinds of buttons: green and gold. The green buttons let you choose between two different things or bring up a different requester. The gold buttons let you turn an option on or off. When the gold button is pressed in, the option is on; when the button is out, the option is off.

There are also ticks (✓) and ✕'s next to some options. A tick means the option is active, the ✕ means it's inactive.

I AM GOOD/BAD

You're a Good god by default. In Custom Games, however, you have the option of being Bad god. Left-click on this option to change your morality from Good to Bad or vice versa.

COMPUTER ASSIST ON/OFF

When this option is Off, you have to raise and lower land and sprig settlements yourself. When On, the computer takes over some of these tasks so you can concentrate on destroying the enemy.

COMPUTER V HUMAN/COMPUTER

In Computer V Human mode, you play against the computer. In Computer V Computer mode, you can watch the computer play both sides, then join in when you like.

LOAD GAME

The Load Game option lets you load previously saved games. For detailed loading instructions, see Loading Saved Games.

SAVE GAME

The Save Game option lets you save games to disk. For precise saving instructions, see Saving Games in Game Menu section.



RESTART MAP

The Restart Map option lets you restart your conquest of the current world.

QUIT MAP

The Quit Map option lets you quit the current world and return to the Game Menu.

CONQUEST GAME

A tick (✓) means that you're currently playing a Conquest Game — an X means that you're not.

CUSTOM GAME

A tick (✓) means that you're currently playing a Custom Game — an X means that you're not.

SERIAL GAME

The Serial Game option lets you establish a data link between computers connected via modem or serial cable. For more details, see "Two Player Games."

PAINT MAP

The Paint Map option lets you change the features on a Custom Game map. This option can only be selected for Custom Games. Left-click on the gold button to activate the Paint Map feature, and then click OK. When you return to the map, the Paint Map options appear in the upper right corner:



PAINT MAP OPTIONS

Blue Man — To add Good walkers to the landscape, left-click on the Blue Man button, move the mouse to map, and click the left mouse button for each walker you want to put down.

Red Man — To add Bad walkers to the landscape, left-click on the Red Man button, move the mouse to map, and click the left mouse button for each walker you want to put down.

Tree — To add trees to the landscape, left-click on the Tree button, move the mouse to map, and click the left mouse button for each tree you want to put down.

Rock — To add rocks to the landscape, left-click on the Rock button, move the mouse to map, and click the left mouse button for each rock you want to put down.

My Mana — To raise your Mana, left-click on the Up Arrow (↑). To lower your Mana, left-click on the Down Arrow (↓).

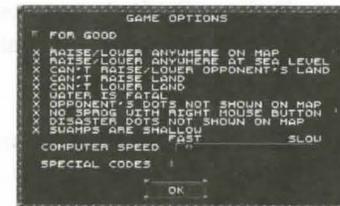
His Mana — To raise your opponent's Mana, left-click on the Up Arrow (↑). To lower his Mana, left-click on the Down Arrow (↓).

Landscape — Left-click on the Up Arrow (↑) to scroll through the different landscapes: Fertile, Snow, Desert and Sludge.

New Map — Left-click on the New Map button to select a different map to conquer.

GAME OPTIONS

Left-click on the Game Options button to bring up the Game Options requester:



The Game Options let you determine how certain features on the landscape work. *You can only adjust these options for a Custom Game.* Any changes you make to the settings affect only the side currently displayed (For Good or For Bad).

Left-click on the green button to choose whether you're setting the game options for Good or for Bad, and then left-click on the ticks (✓) and ✕'s to turn the option on or off.

GAME OPTIONS

FOR GOOD/BAD

Lets you choose which side (Good or Bad) you're currently setting options for.

RAISE/LOWER ANYWHERE ON MAP

- ✓ You can raise and lower land regardless of whether a settlement is in view on the Close-Up Map.
- ✕ You can only raise and lower land when a settlement is in view on the Close-Up Map.

RAISE/LOWER ANYWHERE AT SEA LEVEL

- ✓ You can only raise and lower land at sea level.
- ✕ You cannot raise and lower land at sea level.

CAN'T RAISE/LOWER OPPONENT'S LAND

- ✓ You cannot raise or lower his opponent's land.
- ✕ You can raise and lower his opponent's land.

CAN'T RAISE LAND

- ✓ You cannot raise land.
- ✕ You can raise land.

CAN'T LOWER LAND

- ✓ You cannot lower land.
- ✕ You can lower land.



WATER IS FATAL

- ✓ Your people automatically drown in water.
- ✕ Your people can be saved if they're dropped in water.

OPPONENT'S DOTS NOT SHOWN ON MAP

- ✓ You cannot see opponents on the World Map.
- ✕ You can see opponents on the World Map.

NO SPROG WITH RIGHT MOUSE BUTTON

- ✓ Right-clicking lowers land no matter where the cursor is on the map.
- ✕ Right-clicking on the centre of a dwelling sprogs a walker.

DISASTER DOTS NOT SHOWN ON MAP

- ✓ You cannot see disaster effects on the World Map.
- ✕ You can see disaster effects on the World Map.

SWAMPS ARE SHALLOW

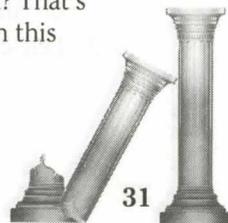
- ✓ When a person falls in a swamp, the swamp is "filled" and disappears.
- ✕ No matter how many people fall in a swamp, it will never be filled.

COMPUTER SPEED

If your computer has a fast processor, the game may seem to play too fast. You can adjust game speed to suit your hardware. Press **plus** (+) on the keyboard to increase the rate at which the computer processes the game; press **minus** (-) on the keyboard to decrease. (Alternately, you can go to the Game Options screen and left-click on the slow or fast ends of the speed meter.)

ABOUT

Who designed, created, conceived and programmed Populous II? That's right, those sexy guys at Bullfrog Productions, Ltd. Left-click on this option for more information.



DIVINE INTERVENTION COMMANDS

30 Divine Intervention Effects are your weapons against your opponent and your only means for helping your population. Effects use up your Mana; great effects like tidal waves and earthquakes are expensive. A lesser effect like lowering and raising land costs little. You can strengthen any effect by applying earned experience points to its category at the Deity Creation screen.

HELP OPTION

If you have questions about any Effects icon, hold down the **H** key on your keyboard and left-click on the icon. A description of the icon's function appears.



People
Effects

PEOPLE EFFECTS

These commands allow you to effect your population.

RAISE/LOWER LAND

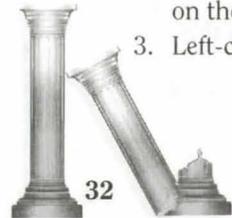
Flattening out farm land is vital for your population to spread out and grow. Raise land from the ocean's waters to extend peninsulas or flatten mountains into rich soiled acreage. To raise land out of the water, just move your cursor out into the body of water and left-click.

To lower land:

1. Choose the Raise/Lower icon from the Basic commands bar
2. Move the main point (the black diamond) of your cursor to the tip of pyramid of land on the close up map
3. Right-click to lower it

To raise land:

1. Choose the Raise/Lower icon from the Basic commands bar
2. Move the main point of the cursor to the low point you'd like to raise on the close up map
3. Left-click to raise it



PLACE PAPAL MAGNET

YOU MUST HAVE A LEADER BEFORE YOU CAN PLACE THE PAPAL MAGNET. Clicking on this icon lets you place your papal magnet. Putting it in the right place at the right time offers great strategic advantage. Place it protectively inside castle walls and influence your walkers to gather there, combining for strength. Place it deep in the heart of enemy territory and influence your walkers to walk to it; they'll destroy all that comes in their path of their holy pilgrimage.

The first walker to arrive at the papal magnet is your leader. When your leader is at the magnet, he is surrounded by a blue flame of holy fire and is invincible.

To place the papal magnet:

1. Left-click on the Place Papal Magnet icon
 2. Move your cursor to the point on the close-up map you'd like to place the magnet
 3. Left-click
- Right-click on the Place Papal Magnet icon to jump directly to the current papal magnet location on the close-up map.

PERSEUS

Change your leader into the hero Perseus by clicking on this icon. Perseus is the most intelligent of the greek heroes, and makes a strong and skillful soldier driven to destroy Bad settlements. Turn as many leaders as you want into Perseus, but remember that each time you turn your leader into a hero, you'll need to establish a new leader by selecting the Go To Papal Magnet command.

To turn your leader into the hero Perseus, left-click on the Perseus icon.



Place Papal
Magnet





LAY PLAGUE

Lay plague on an enemy walker or settlement. When a walker has the plague, they'll spread the illness to all dwellings and people they touch. Plagues can only be stopped by destroying the infected dwellings and people. Plague victims don't give you any Mana, and if Armageddon is declared, they instantly disintegrate leaving only your healthy population to fight for your cause.



Identify a plagued person or house by the vulture circling in the air above the infected person or dwelling. If you hear the tell-tale "caw-caw" of the plague vulture and you don't see one onscreen, check your settlements. Your enemy has infected your population.

To lay plague:

1. Left-click on the plague icon
2. Move your cursor to the dwelling or person you want to infect
3. Left-click

Repeat all steps for each new dwelling or worshipper you want to plague (be careful though, plague spreads fast!)



Declare Armageddon

DECLARE ARMAGEDDON

When you have enough Mana and your population is larger and stronger than your opponent's, declare Armageddon to get the forces of Good and Bad to march to the centre of the world and fight to the death.

To declare Armageddon, left-click on the Armageddon icon.



Vegetation

VEGETATION

Control the vegetation of the world with the Vegetation effects.

GROW FOREST

Earn popularity points by planting trees around your settlements.

To plant trees:

1. Left-click on this icon
2. Move your cursor to an area on the close-up map
3. Left-click again to plant the trees

RENEW LAND

Renew damaged land with greenery and flowers. After a volcano, planting greenery is the only way to make the land livable again for your people. People are happy on a beautiful landscape, so increase your popularity points by planting this greenery around your settlements. This greenery spreads if planted in the right patterns, so cluster plantings together and give them plenty of room to spread.

To plant:

1. Left-click on the Greenery icon
2. Move your cursor to an area on the close-up map
3. Left-click again to plant

SWAMP

Lay a swamp on enemy land to swallow Bad walkers.

To swamp enemy land:

1. Left-click on the Swamp icon
2. Move your cursor to an area on the close-up map
3. Left-click again to lay the swamp.

For a bigger swamp, repeat all steps a few times in one area

PLANT FUNGUS

Plant deadly fungus around enemy settlements and watch it spread to cover their territory. For the most damaging spread and growth pattern, plant fungus in straight rows of three or five, but be careful with it. If it creeps into your territory, it could finish off your settlements as well.



Grow Forest



Renew Land



Swamp



Plant Fungus



To plant fungus:

1. Left-click on the Fungus icon
2. Move your cursor to an area on the close-up map
3. Left-click on the pieces of land where you want it planted



Adonis

ADONIS

Turn your leader into Adonis, the hero of vegetation recognisable by his head of leaves. He divides after combat, multiplying your number of hero's roaming the world for your cause. Turn as many leaders as you want into Adonis, but remember that each time you turn your leader into a hero, you'll need to establish a new leader by selecting the Go To Papal Magnet command.

To turn your leader into Adonis, left-click on the Adonis icon.



Earth Icon

EARTH

Earth effects give you control of earthly disasters and benefits.



Roads

ROADS

Build roads on flat ground and low slopes for your people to walk on and make their travel faster, or use them to block the spread of fungus. Roads are laid down one square at a time.

To build a road:

1. Left-click on the Roads icon
2. Move your cursor to the area you want to begin building on the close-up map
3. Left-click and move the mouse in a row to lay down the squares of a road, right-click to remove a square.

CITY WALLS

Build city walls on flat land around your settlements to protect your worshippers. Neither you or your opponent can alter the land a city wall is built on. You can't build on enemy land.



After you build your first city wall, all other city walls must be connected to it. For example, if you build a city wall around one settlement, the next piece of wall you lay down must stem from the original wall and extend out to the next settlement you want to surround. The only way to have two separate walled settlements is if your opponent somehow destroys the connector wall between the two.



Build Wall

Weak enemies are kept out by city walls, but strong enemies can climb over. If a very strong enemy walker encounters a wall, they could break through it, so don't leave walled settlements unwatched.

To build a city wall:

1. Left-click on the City Walls icon
2. Move your cursor next to the settlement you want to surround on the close-up map
3. Left-click in a circle around the settlement to lay the wall

EARTHQUAKE

Cause a rumbling earthquake to split enemy territory wide open and leave behind a rift that swallows your opponent's population. Earthquakes are special in that you can aim them in a general direction with the pointer that orbits your cursor.



Earthquake

To cause an earthquake:

1. Left-click on the earthquake icon. A pointer slowly orbits your cursor
2. Move your cursor to the close-up map next to where you want to start the earthquake
3. When the pointer is aiming the right direction, left-click again

BATHOLITH

A batholith is an underground movement of rock which causes the land to rise, and forces numerous boulders through the surface. Create a batholith on enemy territory to destroy their farmland.





Batholith

To lay a batholith:

1. Left-click on the Batholith icon
2. Move your cursor to an area on the close-up map
3. Left-click and hold to cause the batholith. Hold down the mouse button for larger batholiths



Heracles

HERACLES

Turn your leader in to the hero Heracles to double his strength and send him crusading into enemy territory. Turn as many leaders as you want into Heracles, but remember that each time you turn your leader into a hero, you'll need to establish a new leader by selecting the Go To Papal Magnet command.

To turn your leader into Heracles, left-click on the Heracles icon.



Air Icon

AIR

Weapons such as rain, lightning, and gale force winds are at your command when you select elements from the Air category.



Lightning Icon

LIGHTNING

Electrocute enemy walkers and destroy enemy settlements and farmland by striking with lightning bolts. You won't be able to aim the lightning bolts exactly, so just strike on or near the target area.

To strike with lightning:

1. Left-click on the lightning icon
2. Move your cursor to an area on the close-up map. Notice the storm cloud following your cursor — it's waiting for your command to strike
3. Left-click and hold to strike. The longer you hold down the mouse button, the more damage done



Whirlwind

WHIRLWIND

Start a whirlwind spinning through enemy settlements for maximum devastation. When a whirlwind goes off land, it creates a land-eating whirlpool in the water. If an armed worshipper gets sucked up by a whirlwind, all his weapons are flung out of his hands, and he is reduced to low intelligence. Anyone sucked into a whirlwind gets flung to the ground when the wind stops.

To create a whirlwind:

1. Left-click on the Whirlwind icon
 2. Move your cursor to a target on the close-up map
 3. Left-click again to start the whirlwind.
- For each new whirlwind, repeat all steps



Storm Icon

STORM

Create a rainstorm over enemy territory and destroy your opponent's land with lightning and heavy rain. There is no way to stop a storm.

To create a storm:

1. Left-click on the Storm icon
2. Move your cursor to an area on the close-up map
3. Left-click again to start a storm

HURRICANE WIND

Cause a gale-force wind to sweep the landscape and devastate enemy land.

To call a hurricane:

1. Left-click on the Hurricane Wind icon. A pointer orbits your cursor.
2. Move your cursor to an area on the close-up map
3. When the orbiting pointer is facing the direction you want the gale to blow, left-click



Hurricane Wind





Odysseus

ODYSSEUS

Change your leader into Odysseus, fastest of the heroes, and send him crusading into enemy territory. Turn as many leaders as you want into Odysseus, but remember that each time you turn your leader into a hero, you'll need to establish a new leader by selecting the Go To Papal Magnet command.

To turn your leader into Odysseus, left-click on the Odysseus icon.



Fire Icon

FIRE

The fire elements are doubly potent because they burn up enemy settlements and worshippers, and ruin all farmland they come in contact with.



Fire Column

FIRE COLUMN

Start a towering column of flame randomly burning across an area with this effect. Fire columns tend to move uphill and hover around the top, so they damage more land when lit on flat ground.

To light a column of fire:

1. Left-click on the Column of Fire icon
2. Move your cursor to an area on the close-up map
3. Left-click again.

Repeat all steps for each new column



Rain of Fire

RAIN OF FIRE

Start a devastating rain of fire over enemy territory.

To start a rain of fire:

1. Left-click on the Fire Rain icon
2. Move your cursor to an area on the close-up map
3. Left-click again



FIRE BURST

Fire Burst sends streams of divine fire out from your Leader. These streams travel in a wide radius and kill any human populations they hit, including heroes. The fire will burn both friends and foes alike, so make sure your leader is nowhere near your own people when using this command.

To use this command, you must already have made a Leader using the Go To Papal Magnet command.

VOLCANO

Erupt a volcano on enemy land and send lava flowing out to the sea to become a basalt peninsula in the water. Land beneath the volcano is almost permanently destroyed. The size of the volcano you cause depends on your experience points invested in Earth effects at the Deity Creation screen.

If a volcano erupts on your land, cap it as soon as you can by building land on top of it, then flatten it out. The only way to make the land usable again is by planting Greenery on the damaged area. Protect your settlements from burning lava with a low hill.

To cause a volcano:

1. Left-click on the volcano icon
2. Move to an area on the close-up map
3. Left-click again

ACHILLES

Turn your leader into Achilles, a fast runner with a head of flames who burns everything in his path. Turn as many leaders as you want into Achilles, but remember that each time you turn your leader into a hero, you'll need to establish a new leader by selecting the Go To Papal Magnet command.

To turn your leader into Achilles, left-click on the Achilles icon.



Volcano



Achilles





Water

WATER

Create tidal waves, whirlpools and baptismal fonts with the effects in this category.



Basalt

BASALT

Create bridges of basalt across water by causing minor volcanic activity with this effect. Arrest enemy land expansion by laying basalt in the water around enemy coastline.

To create a bridge of basalt:

1. Left-click on the Basalt icon. An orbiting pointer rotates around your cursor
2. Move your cursor to where you want the starting point of the basalt bridge
3. When the orbiting pointer points the direction you'd like the bridge to lay, left click again



Whirlpool

WHIRLPOOL

Lay land-eating whirlpools in the water off the coast of enemy territory. Whirlpools multiply quickly and there's no way to stop them, so plant them far away from your land.

To cause a whirlpool:

1. Left-click on this icon
2. Move to the target on the close-up map
3. Left-click again to start the whirlpool



Baptismal Font

BAPTISMAL FONTS

Baptismal fonts create pools of holy water in the ground. When a walker falls into one, he or she changes to the opposite faith (Good walkers turn Bad and Bad walkers turn Good). Create fonts on enemy territory to create walkers faithful to your cause in the heart of your opponent's settlements.



This effect is tricky because occasionally two fonts appear next to each other, and when a walker falls in and changes, he'll immediately fall into the adjacent font and return to his original loyalties.

To create Baptismal Fonts:

1. Left-click on the Baptismal Fonts icon
2. Move your cursor to an area on the close-up map
3. Left-click again to create the fonts

TIDAL WAVE

Set Tidal Waves far out in the oceans off your enemy's coastline to wreak watery devastation to his territory. A Tidal Wave effects the entire world, so settle your people on high land before you start one. If your enemy lays a Tidal Wave, rise a high wall of land around your coastline to keep water out.

To cause a Tidal Wave:

1. Left-click on the Tidal Wave icon
2. Move your cursor into the oceans far off enemy coastline on the close-up map. The further out you begin the tidal wave, the more momentum it can build up on its way inland



Tidal Wave

HELEN OF TROY

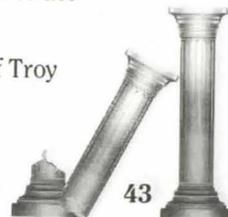
Turn your leader into Helen of Troy, a woman of legendary beauty and grace who has lead many a men to their doom. She marches into enemy territory and leads your opponent's worshippers around until they die of exposure or until you destroy them using a Divine Intervention Effect. Turn as many leaders as you want into Helen of Troy, but remember that each time you transform a leader, you'll need to establish a new one by selecting the Go To Papal Magnet command.

If your enemy creates Helen, try destroying her with fire or lightning. She's very wise and can sense when you're targeting her, so she'll attempt to escape your gaze by switching directions often, so be prepared to act fast when you see her on the close-up map.

To turn your leader into Helen of Troy, left-click on the Helen of Troy icon.



Helen of Troy



WINNING

There are several different ways to win Populous II. You can win worlds, win experience points (even if you lose a world), or you can reach the ultimate goal, defeating Zeus.

EARNING EXPERIENCE POINTS



As you earn experience points, apply them to one of the six categories of effects at the Deity Creation screen. As you invest experience points in a category (population, fire, water, etc.) the power of any effect you use from that category increases. For example, say you earn five lightning bolts of experience after a battle and apply them all to the fire category. The next time you use any effect from the fire category, it's stronger. Fire columns last longer as do Rains of fire, Achilles is stronger and faster, and your Volcanoes are much more damaging and permanent.

To apply a lightning bolt of experience to a category, left-click once on a category icon.

GAME SUMMARY SCREEN



At the end of every world, you'll be seated across the table from your opponent god and given lightning bolts of experience for your battle. On the table between the two of you, watch a replay of the battle. Your opponent deity gives you lightning bolts as a reward for your strategy and speed, which you can exchange for experience at the Deity Creation screen.

SAVING A GAME

See Saving Games in Game Menu section for more information.

STRATEGIES AND TECHNIQUES

SPROG FOR POPULATION

Right-click on the very centre of a dwelling to get walkers to leave and settle. This is the most effective way for you to increase your mana quickly.

SINK ROCKS

Lower the land around any rock to the water and the rock sinks forever. Build new, healthy farmland over the area where the rock once was.



REPAIR DAMAGED LAND

To repair fire or quake-damaged land, lower or raise it, then flatten it again. The land instantly becomes farmland once again.

LAY FONTS AROUND ENEMY PAPAL MAGNET

When your enemy's worshippers are walking to their papal magnet, lay baptismal fonts around it. The ensuing fight is a vision to behold.

LEAD YOUR ENEMIES INTO A SWAMP

Create roads across enemy territory. Bad worshippers will tend to walk the roads, so create a swamp at the end of one. Watch bad worshippers drown in the mud.

LAY WHIRLPOOLS IN ENEMY TERRITORY

Lower land into the water until you create a lake in the middle of enemy territory, then plant whirlpools in the lake. The whirlpools are indestructible and eat away at the enemy's land.

CREATE HILLS AGAINST TIDAL WAVES

Build populations on high land or build a wall of land around your coastline before you cause a tidal wave. If you don't, you're likely to wipe out a large chunk of your population.

CREATE HILLS AGAINST LAVA

Lava always flows in a straight line, so if some is heading toward your settlements, raise a section of land in front of the flow to stop it.

KEYBOARD EQUIVALENTS

Pause
Quit

Full Screen/Normal View

Scroll Map

People Effects

Vegetation Effects

Earth Effects

Air Effects

Fire Effects

Water Effects

Divine Intervention Commands

Effect On/Off

Effect Description (Help)

Fight

Go To Papal Magnet

Gather Together (Join)

Settle

Query

Game Requester

Speed up gameplay

Slow down gameplay

Change conquest game to custom game

F10

Shift-Esc

(when Game Menu is showing, this acts as a "Quit to DOS" command)

F7 key

cursor up, down, left right or keypad

F1 key

F2 key

F3 key

F4 key

F5 key

F6 key

I-5 (keyboard not keypad)

Hold down **Tab** and left-click on icon

Hold down **H** and left-click icon

F

G

J

S

/ or ?

R

plus (+) (keyboard not keypad)

minus (-) (keyboard not keypad)

Alt-C



TWO PLAYER GAMES

There are ways to connect two computers for a human vs. human game of *Populous II*: with a null modem cable (datalink), via a network, or via modem. To play a two player game, both players need original copies of *Populous II*.

Note: Two player mode may not work on computers that run at different speeds. If one of the systems you are using is faster than the other, you may be able to make them run at the same speed by turning off the Turbo button on the faster system.

FIRST THING

Talk to the other player:

Decide who will play as the Good god, and who plays Bad.

Who will send and who will receive (remember, the one who sends is paying the phone bill)

Times for game pauses. When one player pauses, the other is automatically paused.

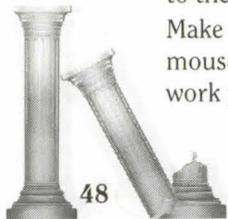
CONNECTING SERIAL PORTS WITH A NULL MODEM CABLE

In null modem games, the Game Requester icon is not an option. Attempting to select the Game Requester icon while two systems are linked via null modem cable may cause communication difficulty between the computers.

1. Make sure your computer is OFF.

Connect the cable to a comm port on your computer (1 or 2), and make sure the other player has connected the other end to his computer. *Populous II* only supports comm ports 1 and 2 for null modem play. Note the *number* of the comm port (1 or 2) connected to the null modem cable.

Make sure your mouse is NOT installed on comm port 2 — your mouse must be installed on another comm port for modem play to work properly.



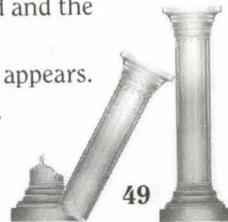
2. Turn your computer ON.
3. Load *Populous II*. When the Game Menu appears, left-click on **Two Player Game**.
The Link Requester appears.
4. Left-click on the Good/Bad button to choose whether you're the good or bad deity. Remember: One computer must be set on Good and other must be set on Bad.
5. Left-click on the Link Type button until "Connect Serial" appears.
6. Left-click on **Connect**. The Serial Link Requester appears.
7. Left-click on the Set Baud Rate button to set the baud rate to its highest setting ("38400"). Both computers must be set on the same setting.
8. Left-click on the Comm Port button (1 or 2) that specifies which comm port the null modem cable is plugged into.
9. Left-click on Connect. A message box appears, informing you that the computers are trying to communicate.

Note: If you have a problem making your computers communicate, check to make sure that their baud rate settings are the same and that you've designated the correct comm port for each computer, and that your cable is actually a null modem cable.

CONNECTING COMPUTERS USING A NETWORK

The shared directory is located on the network server. It has nothing to do with the directories in which *Populous II* is installed on each system. On your system, the game may be installed in any directory you wish.

1. Load *Populous II*. When the Game Menu appears, left-click on **Two Player Game**.
The Link Requester appears.
2. Left-click on the Good/Bad button to choose whether you're the good or bad deity. Remember: One computer must be set on Good and the other must be set on Bad.
3. Left-click on the Link Type button until "Connect Network" appears.
4. Left-click on Connect. The Network Link Requester appears.



- Left-click on the "Directory" line. A dot appears, indicating that you can enter the shared directory you'll be using for *Populous II*. Type the directory path, and then press **Enter**.
- Left-click on **Connect**. The sender now loads the selected world and play begins.

Note: If you have difficulty connecting over a network, check to make sure that you've both designated the correct shared directory. *Populous II* was successfully tested on a 3Com and a Novell net. Compatibility with all networks is not guaranteed.

CONNECTING MODEMS

- Ensure both the computer and the modem are turned off.
- Connect the modem's serial cable to the computer, then connect the modem to the phone line.
- Turn on the modem and your computer.
- Boot *Populous II* on both computers.
- Both players must choose the same world: either choose Custom mode with the beginning five effects available, or choose Conquest mode and both type in the name of the world with the effects you want, and go back to Custom mode with those effects. Alternatively, you both could use an identical saved game.
- Left-click on the Game Requester screen, then left-click good god or bad god, whichever you've agreed to with your opponent.
- Left-click on the Serial Game option, then left-click on OK.
- When the Link Requester screen appears, adjust your baud rate by left-clicking on the arrows on either side of the BAUD RATE number. Both players must have and select the same baud rate.
- The Modem Message line on your Link Requester screen is where you can type commands to your modem. See your modem's manual for the exact commands your modem can receive. To send a command, left-click in the Modem Message line, type your command, then press **RETURN**. Your command appears on the line beneath. If you type a second command, you need to delete the old message first.

- As a general guide to connecting, do the following:
The dialing player should type ATD and the receiver's phone number (no spaces), then press **RETURN**.
The receiving player, once he has heard his modem answer, should type ATA, followed by **RETURN**.

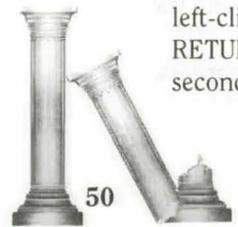
- If you have successfully established a connection, both players should see a string of question marks (???) appear in the box below the Modem Message line. Both players should now left-click on **CONNECT**. Both machines will load the selected world and play can begin.

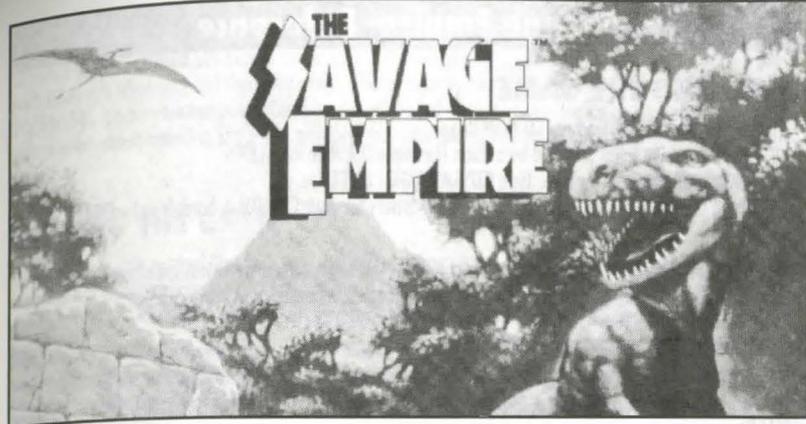
Note: There are many reasons why you may have difficulty in connecting with modems. If you are experiencing difficulty, try connecting to your friend's computer with a modem terminal package, or something similar before loading *Populous II*. Consult your modem manual for any commands you may need to know to configure your modem correctly.

PAUSING THE GAME

If you pause the game with **F10** or by bringing up the Game Requester, your opponent gets paused too, so schedule pauses before you link up.

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INSTALLING THE GAME

1. Insert the CD-ROM into the CD-ROM drive.
2. Type the drive letter followed by a colon (Example D:), then **<ENTER>**.
3. Change directory to Savage. Type **CD\SAVAGE <ENTER>**.
4. Type **INSTALL D: C:** (substitute the correct letters for your CD-ROM & hard drive) **<ENTER>**.

NOTE: You **MUST** use expanded memory in order to hear the *Savage Empire* musical soundtrack. Sound effects will play with or without expanded memory installed. See Expanded Memory below.

CHANGING YOUR CONFIGURATION

If you ever upgrade to a different graphics modes, add RAM memory, or add a sound board, follow the directions above and re-installed *Savage Empire* by typing **INSTALL** in the \SAVAGE directory. Press **<ENTER>**.

Saving Additional Games

The *Savage Empire* remembers one saved game at a time. If you wish to keep other saved games, copy the contents of the \SAVEGAME subdirectory to another subdirectory or to a floppy disk. To restore that game later, copy those files back to the \SAVEGAME subdirectory. See your DOS manual for further information on copying files.

Restarting with Another Character

If you wish to start your quest again from the beginning type **INSTALL** in the \SAVAGE directory. Press **<ENTER>**. One of the menus in the **INSTALL** program allows you to choose between *Create New Character* and *Keep Existing Character*. Select *Create New Character*.

Memory Usage

Regardless of the amount of RAM memory in your machine, you *must* have 558,000 bytes free to run *Savage Empire*. Run the DOS program, CHKDSK, and look at the last line of the information presented. This tells you how much RAM memory is free. For example, CHKDSK might tell you that your 640K system has 575,239 bytes free. If you have less than 558,000 bytes free, you do not have enough free RAM and the game will not run.

To make more RAM available for your system, you may want to remove from your AUTOEXEC.BAT and CONFIG.SYS startup files any memory-resident programs that are unnecessary for system usage. If you do not want to reconfigure your system, we suggest making a bootable DOS system floppy disk to start your computer prior to play. Refer to your DOS manual for the procedure to create a startup diskette.

Expanded Memory

Memory beyond 640K can be allocated as "expanded memory" which the game uses to play the musical soundtrack. (Remember, you also need a sound card installed for the musical soundtrack.) During the install process and when loading the game, you will be told if expanded memory was detected. Expanded memory is *not* the same as "extended memory."

To access expanded memory, you must use an expanded memory manager program. Two of the most common ones are QEMM.SYS (which comes with Quarterdeck's Desqview) and EMM386.SYS (which comes with Microsoft Windows), but there are others. These memory managers are installed by adding a line to the CONFIG.SYS file on your computer. Consult your expanded memory manager's documentation for information about installing expanded memory and determining how much expanded memory is available for use.

PLAYING THE GAME

From the hard disk prompt (Ex. C>), type the following command: **CD \<path>**, where **<path>** is the name of the subdirectory used during installation. If you selected the default choice, you would type **CD \SAVAGE**. After selecting the game subdirectory or disk drive, type **SAVAGE <Enter>** to begin.

In order to play *Savage Empire*, you must be able to correctly answer questions the Shaman asks you. If you answer incorrectly, you will be returned to the DOS prompt. Due to unavoidable circumstances, the pagination of the *Savage Empire* manual had to change, therefore, the page numbers referenced on the screen are no longer applicable.

The following lists the questions and their correct answers.

- Q: What expedition has returned?
A: Wild River
- Q: What kind of cover does Jimmy's notebook have?
A: Weatherproof
- Q: Who is shown on the cover of Ultimate Adventures magazine?
A: Coatlicue
- Q: In your dreams, what was it you lacked?
A: Memory
- Q: In your dreams you saw birds. What sort of eyes did they have?
A: Reptilian
- Q: In your dreams, what did you think of as an old and trusted friend?
A: Knife
- Q: What does Professor Rafkin think the valley is akin to?
A: Time Capsule
- Q: What does Rafkin say happens frequently between tribes?
A: Clashes
- Q: What is the first tribe Rafkin discusses in his notes?
A: Nahuatla

THE MAIN MENU

After loading, an introductory sequence will begin. Press <Escape> if you wish to bypass this sequence altogether. Next, the Main Menu will appear, listing three options: *The Story So Far*, *Character Creation*, and *About The Savage Empire*. After you have created a character, a fourth option, *Journey Onward*, will appear. To select one of these options, use the arrow keys or numeric keypad to highlight the option you want and then press <Enter>.

The Story So Far tells how you arrived in *The Savage Empire*. The information in this sequence is vital to your quest.

Character Creation **must** be selected the first time you play. Here, you can type in your character's name. Go on to the next portion of the character creation system by pressing <Enter>. You will then be asked a series of questions. Answer by selecting the A or B response to each question. The answers you provide determine the attributes of the character you play.

About the Savage Empire lists the many people who worked hard to bring you this game.

Journey Onward takes you directly into *The Savage Empire* game. Select this option when you're ready to play. This option only appears after you have created a character. In future sessions, you can use this selection to return to a saved game.

USING THE INTERFACE

The Savage Empire allows for the use of a mouse and/or keyboard during play. All movement and icon selections can be handled using either of these devices. In general, the left mouse button is the select or "do-it" button. The right mouse button can be used to select a "shortcut" command, allowing a commonly used command to be activated whenever the right button is clicked. On the keyboard, the <Enter> key is used to confirm selections. For the exact uses of each device during game play, refer to the appropriate section below.

SCREEN LAYOUT

The game screen is divided into four regions — the Map, the Status Display, the Message Display and the Command Icons.

THE MAP

The largest region, on the upper left side, is the Map. This shows the world you are moving through, with the view centered on your (or another member of your party if they are in Solo mode). Above the Map, the current position of Eodon's sun or moon is shown, along with the face of the Fabozz.

With a mouse, move your characters around by positioning the pointer over the Map until it becomes an arrow pointing in the direction you wish to move. Then, click the left button. You may press and hold the left button to move continuously, controlling your direction by steering the pointer. Some actions ask you to select a point on the Map where to perform an action. (You may have to say where you want to drop an item, for example). To select a location, click on it with the left mouse button. If you are using the keyboard, move by pressing an arrow key, or one of the eight keys around the "5" on the numeric keypad. If asked to select a point on the Map to perform an action, use these keys to move a set of crosshairs on the screen to the desired location and press <Enter> to initiate the action.

You can pass your turn and do nothing by positioning the mouse pointer over your character and clicking the left mouse button, or by pressing the spacebar.

THE MESSAGE DISPLAY

At the lower right of the screen is the Message Display. All text describing things you see and hear, as well as the results of your actions, is shown here. When a message is too long to fit on the scroll, a flashing, downward-pointing arrow appears at the bottom of the Display. Press the spacebar or click in the Message Display to view the rest of the message.

THE STATUS DISPLAY

In the upper right-hand corner of the screen is the Status Display. This normally displays a roster of all the members of your party, along with each character's figure and current health points. A character whose health points are displayed in red is hurt badly; one whose health points are green is poisoned.

- If you click on a character's name (or press a function key which corresponds to a character's position in the party [F1-F7]) you will be shown their Inventory.
- If you are using the keyboard, the first time you press <Tab> the cursor shows on the Map. Pressing the <Tab> key again moves the cursor from the map to the Status Display, you can then move to any item or button using the arrow keys or numeric keypad, and press <Enter> to select it.
- The Plus (+) and Minus (-) keys display the next and previous characters respectively.
- Pressing F10 or / returns to the main Party Display.
- The asterisk (*) key will toggle between a character's Portrait and his Inventory Display.

Character Statistics

STR (Strength) — determines how much a character can carry, and how effectively they can strike with bludgeoning weapons. It also affects your Health Maximum (**HM**).

DEX (Dexterity) — determines how fast they are (faster characters get to move and/or attack more often), and how effective they are with non-bludgeoning weapons such as bows and swords.

INT (Intelligence) — determines the character's effectiveness in casting spells, and in using certain objects.

HP (Health Points) — indicates how healthy you currently are, and how much damage you have taken in combat. If a character's HP reaches 0, he collapses unconscious.

HM (Health Maximum) — indicates the maximum amount of health points your character can have. If your HP is the same as your HM, you are perfectly healthy.

Lev (Level) — increases as you gain experience points. Each time your Level goes up, you increase one of your attributes (STR, DEX, INT), and usually increase your maximum health. You must rest (see REST below) to increase your level.

Exper (Experience Points) — increases as you accomplish things in the game. You gain Experience Points for defeating hostile creatures in combat and completing quests. You lose Experience Points when you are knocked unconscious.

INVENTORY DISPLAY

To view a character's Inventory, select one of the figures to the left of the roster by clicking the mouse or pressing F1-F7.

On the left side of the Inventory Display is a figure showing all equipment that is readied for immediate use — either held in the character's hands, or being worn. If you are holding something that requires both hands, you will not be allowed to put anything in the other hand. On the right side of the Inventory Display are all other items carried by the character. To ready or unready an item, just click on it with the left mouse button. To look inside a container in your inventory, such as a bag, just click on it. Click on it again to return to the main Inventory Display.

Below the figure are two weights, measured in stones:

- E:** shows how much the items you currently have Equipped weight, compared to the maximum weight you can have Equipped.
- I:** shows the total weight of your entire Inventory compared to the maximum weight you can possibly carry.

At the lower left of the Status Display are five buttons. From the left to right, their functions are: Show previous character, Return to Party Display, Switch between Portrait and Inventory Displays, Show Next Character, and Change Combat Mode. You can change a character's combat mode at any time, even in the middle of a battle. At the lower right, the character's current combat mode is displayed. To change modes, click the Change button, or if using the keyboard, press <Tab> and then press ~.

The four combat modes are:

Close — Charge and attack nearest enemy.

Retreat — Avoid combat.

Range — Stay at a safe distance and attack with ranged weapons.

Command — Lets you control that character's actions each turn, just as you do for your own character.

THE COMMAND ICONS

Underneath the Map are nine Command Icons. To use a command from the keyboard, simply press the first letter of its name. With the mouse, move the pointer to the Command Icon you want to use and click the left mouse button. Then select the object or person you want to use the command on. For frequently used commands, such as Get, Look, Attack or Use, you can set a command as the "shortcut" command for use with the right mouse button. Click with the right button on a Command Icon, and a box will appear around it. From then on, clicking the right button on any shape on the Map or in your Inventory Display will execute that command on that object. You can change the shortcut command at any time. For all functions other than executing the shortcut command, the left mouse button should be used.

The nine main commands are:

MOVE (M) is used to push an item or to transfer it between characters in the party. If you select an item on the Map, you can sometimes push it to a position adjacent to where it is. If it is something alive, though, it may not let you! This command can also be used to move things in and out of containers or from one character to another. For example, if you wish to give something in your inventory to somebody else, you select "Move," then select the object you want to give, then select the character you want to give it to.

GET (G) lets you pick up an object on the Map. You must be standing next to it. If it isn't too heavy to carry, and you have room for it, it will be put into your inventory.

DROP (D) can be used to lighten your load by getting rid of items you no longer want to carry. First, select the item in your inventory, then choose a spot on the Map to place it.

USE (U) operates any object that has some function. Among other things, it will let you open and close doors, cast a spell with a magic totem, mount riding creatures, light or extinguish fires, eat or drink food and beverages, or apply cloth bandages to wounded characters.

TALK (T) lets you converse with the people you encounter in the game. You can also speak with the other members of your party. After selecting **TALK**, you then select the character on the Map you wish to speak with. Their portrait will appear in the Status Display while they are speaking, and the Map window will change to display the conversation. You talk by typing single words on the keyboard and pressing <Enter>. Most words may be abbreviated to the first four letters (e.g., "dinosaur" may be abbreviated to "dino"). Most people will respond to the words "name," "job," "tribe," "bye." (The "bye" command ends a conversation. You can accomplish the same thing by pressing <Enter> without typing anything.) Some people will also respond to the words "join" and "leave," allowing you to add members to your party or remove them from your party.

During the course of conversation, people can give you an idea of what they're interested in talking about. You may activate the Help function (which defaults as ON when you start the game) and the subjects they want to talk about will appear in a different color on the screen; if help is off, you'll have to figure out the key words in their conversations. You can turn the Help function on or off by pressing **control-H**. Be aware that some people will also respond to other subjects not highlighted by Help mode.

LOOK (L) allows you to identify anyone or anything at the location you select, on the Map or in your inventory. When you use the **LOOK** command on an object you are adjacent to, you will also search it. This will reveal the contents of packs, bags, etc.

ATTACK (A) is used to fight monsters, animals, or people, or to attempt to destroy objects. After choosing the **ATTACK** command, choose a target on the Map that is in range of the weapon you have readied.

REST (R) lets your party set up a camp, recover health, and gain experience levels. To make camp, you must be in a relatively large, clear area. You can rest until sunrise or sunset, or specify a number of hours (1 to 9). A character will not regain health if they do not have food.

BEGIN/BREAK OFF COMBAT (B) switches back and forth between party mode and combat mode. In party mode, the members of your party automatically follow you around. In combat, each character will behave according to the combat mode you have selected for them on their Inventory Display. When you begin or break off combat, the image of Fabozz at the top of the view screen changes to indicate whether you are in party (calm face) or combat (angry face) mode.

USING SHAMANISTIC MAGIC

Only trained shamans such as Triolo may invoke the spirits. To cast a spell, "Use" the desired totem (skull) in the shaman's inventory. You will then be asked which offering to use. Select the offering from the character's inventory. The table below lists the combinations of totems and offerings and their magical effects.

TOTEM	OFFERING		
	CHOCOLATL	PINDLE	YOPO
HELUZZ (Human Skull)	Light	Eagle Eye	Detect Hostile
APHAZZ (Gorilla Skull)	Charm Enemies	Heal	Protection
MOTAZZ (Jaguar Skull)	Summon Animal	Curse Enemy	Battle Frenzy

KEYBOARD COMMANDS

- **CTRL-S** Save Game.
- **CTRL-R** Restore Saved Game.
- **CTRL-Q** Quit to DOS (Note: The game is NOT saved when you select this option).
- **CTRL-H** Toggle Help Mode ON/OFF. (Help highlights key words in conversations.)
- **CTRL-Z** Toggle Music & Sound ON/OFF.
- **1 through 7** Activates Solo mode for corresponding party member. In Solo mode, one party member can move around and perform actions while the rest of the party waits inactively. You cannot talk to people or enter caverns while in Solo mode.
- **0 (zero)** Returns to Party Mode.
- **Escape** Aborts most game functions.
- **F1 through F7** Activates Inventory Display for corresponding party member.
- ***** Toggle between Portrait and Inventory screens in Status Display.
- **/ or F10** Display Party Roster.
- **~** Change Combat Mode.
- **+** Move to next character's Status Display.
- **-** Move to previous character's Status Display.

TROUBLESHOOTING

PROBLEM: *Savage Empire* fails to load or run properly:

- You may not have sufficient free RAM memory. Run CHKDSK to check your computer's available RAM. Compare this to the amount of free RAM required for your computer/sound board system. Free-up RAM if needed.
- You may have a memory-resident TSR program that conflicts with the game. Boot the computer from a DOS system floppy or remove memory resident programs before running the game.
- You may have chosen an invalid configuration during the install process. Check your configuration and, if necessary, reinstall *Savage Empire*.
- You may have filled all free space on the active disk drive. Use the DOS "DIR" command to check available disk space.
- You may have incorrectly answered a copy protection question. This returns you to DOS and you must begin again.

PROBLEM: The mouse pointer doesn't respond properly:

- The game supports the Microsoft Mouse and Microsoft Mouse driver, version 7.0. Other mouse brands and drivers may not be compatible.

PROBLEM: The game runs slowly:

- You may have had too little free space on your hard drive to unpack the game files. Free up 5 megabytes of hard disk space and re-install.
- PC speaker sound effects slow play. Select "No Sound" when installing.
- Your computer may not be fast enough to run the game efficiently. The preferred minimal configuration is a 10 megahertz 286-based IBM PC/100% compatible machine. Some older and/or slower machines may not be powerful enough to provide the full experience.

Valley of the Lizards

Chapter One: Strange Departures

by "The Avatar"

The roar—a shrill bellow like metal dying in the grip of crushing machinery—broke the stillness of the forest, startling birds into flight, waking me from sleep.

But the forest was strange. Huge, thick trees like twisted palms blotted out the sunlight; giant ferns hungrily devoured what little light made it to the forest floor. The fleeing birds were misshapen, with short, stubby wings, long-lumed tails, beaks filled with teeth, and cold, reptilian eyes.

And I didn't know why I was here. I had no memory of coming to this place, of ever having seen it before.

Quickly, I rose and took stock of the situation, of myself.

I was dressed for the occasion: I wore durable riding pants, a rugged safari-style shirt, and high boots which could withstand a lot of abuse in the field. On my belt was a sheathed Bowie knife, an old and trusted friend. And I was—I was—

That brought me up short. I didn't know *who* I was. My name and my reason for being here were utterly gone. There was a hard pocket of vacuum where my memory should be.

That distant scream sounded again, startling me out of my reverie. I began moving in that direction. Perhaps, where things were happening. I'd find some key to the memories which were locked away from me.

Was this a dream? I pinched myself, and wished I hadn't; it smarted. I concentrated on my surroundings, and the level of detail I perceived didn't suggest a dream. I saw hundreds of light-slivers penetrating the green canopy above, I felt the oppressive, humid weight of the air, I smelled the myriad odors of a living jungle. If this was a dream, it was dangerously real.

Ahead, the jungle opened into a clearing. Branches and fronds above lengthened to block out the sun, except for one dazzling shaft of golden sunlight which struck down at the center of the glade. I moved forward, taking advantage of available cover, trying to spot

whatever thing had made that terrible cry.

As I reached the edge of the glade, I spotted movement: A silhouette, a lithe form moving gracefully through the clearing, carrying a spear at the ready. The figure brushed past the shaft of light and was illuminated.

It was a young woman.

She was part of this place, no outsider like myself. Her abbreviated garments were cut from leopard-spotted furs. The head on her spear was stone. The copper tone of her skin suggested the aboriginal tribes of the Americas. And her features—

She didn't have the pouty, perfect features preferred by modelling agencies, but oh, she was beautiful. Her brown eyes were alert, and there was intelligence and concentration in them. Her lips, slightly parted, carried no expression, but looked as though they were made to curl into a heart-rending, happy smile. Her dark hair was a wild, tumbling mass—a look natural and effortless in her, and which a thousand hair stylists could never duplicate. She had the balanced and confident step of an athlete. She was a jungle cat reincarnated as a woman.

I must have made some noise, for the woman turned, on guard, the shaft of light spilling across her. She turned her face in my direction. It was unlikely I could see me, but her eyes seem to fix on me. Like I'm arrested by the gaze of a panther, I froze.

Then that metallic scream sounded again—from the other side of the glade. The woman whipped around to face it, and both she and I saw the source of the scream.

It lumbered out of the gloom, a silhouette as tall as a two-story house: giant reptile moving on two massive legs. It was all in darkness, except for its teeth, a double row of serrated fangs picked out by a stray sliver of light.

It charged the woman, moving like a hungry express train. Not thinking, I did the same, hoping—to catch her up and outrun that eating machine on legs. To drag the reptile down and butcher it with my pinning knife? I didn't know. I didn't think. I moved.

But in an instant, the light faded, except where I stood. Gone were the noise and humidity...all vanished as though someone killed the lights and struck the

one second. I stopped, alert, trying to slow my breathing in spite of the adrenaline that had just jolted through me.

"The place is real!"

The speaker was behind me: I whipped around, hand on my knife-hilt, but the speaker held no menace for me.

"The woman is real."

It was a man greying gracefully into middle age. His beard and mustache were neatly trimmed, his eyes intelligent. He wore colorful robes; on his head was a golden crown of simple design.

"The beast is real, but it is the least of their dangers!"

I knew him—a memory of him began to surface in my mind. I trusted him. I struggled to speak, but no words emerged.

"Find out about the ruined moonstones, my friend. Your own stone will not take you there...but you must have it there."

Then the light faded. My eyes opened. I sat up in my own bed, in my own room. My name and memories were restored to me.

It had all been a dream. But as my memories came back to me, so did the truth: For the last several nights, I'd had that same dream, varying in no detail...except that this was the first time HE had appeared in the dream.

It was Lord British who had spoken to me at dream's end.

Lord British—there's little room here to talk about him. Suffice it to say that he is a man of wisdom and spiritual strength, master of a powerful brand of mysticism. He rules a remarkable land which few modern men will ever be lucky enough to see. From time to time, he calls on me for help. I have never failed him.

Nor would I now. His command was clear: "Find out about the ruined moonstones." I had a moonstone, brought with me from the place Lord British ruled; it was a smooth, polished black stone, much like a piece of onyx, possessing remarkable properties. But it was in no way ruined...so far as I knew.

Who would know? I've made some knowledgeable friends over the years. My thoughts immediately went to Professor Rafkin.

Elliot Rafkin is a man of too many skills and interests, too little time: He's spent his years learning as

much as he could about all manner of sciences and studies. If he couldn't tell me what I needed to know, he could tell me who *would*.

I dressed quickly. With conscious irony, I chose the same clothes I'd been wearing in the dream, and slid my faithful Bowie knife into a booth-sheath. It was time to track down the source of my dreams; I might as well be as I appeared in my dreams.

When I first met Professor Rafkin, he was a teacher. He is now the curator of the local Museum of Natural History. And though he's eminently qualified for that job, he wasn't actually hired for his depth of scientific knowledge.

Rafkin had a talent with people. His enthusiasm for science is so infectious that it drags others in its wake. He can speak with an entrepreneur for half an hour, on topics which could not interest the person less—shipwrecks off the coast of Turkey, recurrences of legends between Greeks and Aztecs, spectroscopic analyses of moonrocks—and walk away with a generous check, an endowment to his museum. This isn't manipulation: He never intends to come away with money. But he does, again and again.

The museum has set him up with his own laboratory toward the back of the building. Rafkin's assistants handle the cataloguing of artifacts and arrangement of displays. The museum directors trot him out to meet important people, to attend luncheons, to lecture at universities; but the rest of the time, Rafkin does what he wants, and can usually be found puttering around his lab.

At the museum, I avoided the main entrance and walked to the unmarked side door which serves as Rafkin's private entrance. I pressed the signal button beside the door; when the answering buzz indicated the door was unlocked, I entered.

Now, you must understand: Any busy city street, with its crowds and traffic, is orderly compared to Rafkin's lab. In this room, on its tables, there's no telling what you'll find. I'm used to walking in and seeing scale models of long-buried cities, scientific equipment still in crates, stacks of books and dissertations, sparking machinery whose purpose I couldn't possibly figure out, and jars of preserved organs (it's unsettling to have the

contents of mason jars staring at you while you're visiting an old friend). Today was no exception.

But Rafkin wasn't here. Instead, sitting in the room's one padded chair, was an angular young man. Dressed in a two-piece suit, its waist a little too high, its lapels a little too broad, he looked as though he sprang from a 1930s nostalgia show.

He jumped up, too full of energy, as I entered. "Hi," he said, stuck out his hand; I shook it. "I'm Jimmy Malone. I imagine you're here to see Professor Rafkin."

"Yes, I—"

"He'll be back in just a second. Gone to talk to his mummy. Ha, ha. Don't knock yourself out laughing. Who're you?"

"I'm—"

He gave me a sudden, intense look. "I know who you are. Oh, what a file we have on you. Every so often, you disappear for days on end. Usually come back really tanned. Your neighbors are curious about all that, you know? Care to comment?" He fumbled around his jacket pocket and drew out a battered notebook.

I closed my eyes for a moment, sighed. "Great. A reporter. I come to visit my friend and get a reporter instead."

He grinned. "Rafkin occasionally throws me some interesting story ideas on slow news days. Like today. But, hey, let me give you the whole effect." From a nearby table, he scooped a hat. From inside it, he pulled a small card, tucked it in the hatband, then put the hat on. Inevitably, the card read "Press."

"Isn't that a little old-fashioned?"

His grin just got broader. "Some people have no respect for tradition."

Another voice, dry, sardonic, intruded: "Jimmy, you'll find that my friend has respect for things traditional... but lacks your affection for obnoxious stereotypes."

I turned; emerging from the doorway leading into the museum was Professor Rafkin. I had to grin at his statement. With his wire-framed glasses and mutton chop sideburns, he looked like another stereotype: The irrepressible Victorian-era scientist fabled in books and film. Fortunately, unlike Malone, he did prefer contemporary dress.

Rafkin turned to me: "As for you, what brings you here?"

I gave him an enigmatic smile. "A riddle. What reptilian, stands about twenty feet tall, walks through jungle, and devours young women?"

"Joke, or serious proposition?"

"Serious."

He thought about it for a moment. "Massive of build, or sleek for its size?"

"Massive."

He frowned. "Nothing, outside of Hollywood that is, matches your description. Remove the woman from your equation, and you're probably speaking of the *Tyrannosaurus Rex*, a Cretaceous-era carnosaur. In certain pitiable movies, of course, you can find dinosaurs running amok, gobbling up cavemen, including young women. In reality, they *did* miss each other by some 65 million years." He gave me an admonishing look. "As well you know."

"I need to speak to you... privately."

Rafkin glanced at Malone, who rolled his eyes toward heaven. "My boy," Rafkin said, "I *do* need a moment alone with my old friend. If you'd just go and look at our mummy collection for a few minutes, I'll tell you about how certain viruses can survive for thousands of years, remaining dormant in a mummy's bandages, becoming active when the tomb is opened, and contributing to all sorts of legends about a deadly 'Mummy's Curse.'"

Malone shot me a dirty look. "If I must."

"You must," Rafkin answered, sweetly.

When Malone had gone, I gave Rafkin the whole story: The dreams, the woman, the dinosaur. Lord British, the moonstone. I didn't tell him *all* the truth about Lord British—certainly, I withheld the extraordinary means by which I travel to British's distant realm. But I reported everything else in detail. At the end of my story, I showed him my moonstone.

Rafkin listened attentively through the tale, his expression contemplative. Then he took the moonstone from my hand, examined its lustrous surface, weighed it in his hand.

Finally, he said, "You know, I was wondering if you'd recently taken an especially hard knock to your head. But there's an unlikely coincidence in this 'moon-

stone' business. Let me show you." He handed me back my own stone, then went to one of the many shelves in the laboratory.

He returned with a cardboard box. The box was filled with crumpled newspaper; the printing appeared to be in German. Rafkin plunged his hand into the box and groped around. "This was sent to me," he continued, "by a former student of mine. He worked until just recently for a German archaeologist named Spector."

From the box, he pulled a black stone and handed it to me.

In many ways, it resembled my moonstone. It was the same size and weight. But it was significantly different. Where my stone was smooth and polished, his was cracked and faceted. It looked as though it had resembled mine at some time in the past, but then had been subjected to great heat. While my stone was like polished onyx, his was like charred obsidian: Lustrous in places, on a few flat spots, but elsewhere jagged. If felt that this was not just a moonstone in unpolished form; it was a moonstone which had been somehow *altered*.

Rafkin continued, "My ex-student says that Spector got this and others from a dig in Central America. Spector was examining the stones with his other assistant one night. The next morning, my student reported for work...and found both of them gone, the room stripped clean of furniture. Quite a mystery. My student had one stone; he sent it here in the hopes I could shed some light on the mystery. I haven't made the time to do so before now."

"Would you? I'd appreciate it. I get the distinct impression that I'll continue having this dream until *something* is resolved. My dreams pointed me at the moonstone...and the moonstone has pointed me toward *you*."

He smiled. "I'll see if I can justify your faith. Let me fiddle with this stone. Make yourself at home."

With Professor Rafkin, "Make yourself at home" means "I'm going to ignore you for a few hours while I look into this." So I pocketed my own moonstone, settled into the professor's sole comfortable chair and relaxed...for about two minutes. Then, Jimmy Malone returned.

"So, let's talk about those disappearances of yours. What's the story? You CIA? Helping US-backed rebels somewhere?"

"Tell you what, Jimmy. You write whatever you like, put it in print, and I'll see you in court. That way you and my lawyers get to do all the work, and I can sleep."

He grinned like a shark invited to a feeding frenzy. "Oh, this is going to be fun. You've got all my journalistic instincts jumping. What saw we—"

He was cut off by Rafkin: "What the *devil*..."

I stood to look, and Malone, doubtless feeling the sting of his 'journalistic instincts,' hastily plucked a pocket camera from his jacket and checked to make sure it was loaded.

Rafkin was backing away from the table where the cracked moonstone lay, wires and leads attached to it...the whole mess surrounded by a bright, translucent glow of energy.

"What did you *do*?" I demanded.

Rafkin shook his head, baffled, his gaze fixed on the table. "I was checking the material's heat and electrical energy into that stone, and *more* comes out—or so my gauge said. Then that glow sprang up..."

As he spoke, the glow around the stone swelled out like a bright balloon of energy across the equipment on the table.

Before I could intervene, Rafkin tentatively stretched out his hand to touch the field. There was a sound—a crack and sizzle, like the world's largest droplet of water skidding around on the world's largest frying pan—and Rafkin was thrown back, landing hard a dozen feet away.

I was at his side in a second, positioning myself between him and the still-swelling field. His eyes were closed, his breathing shallow. "Professor?" I gave him a quick shake, glanced back over my shoulder to check the position of the glow; it was still ten feet back, but growing steadily.

Abruptly, the lights in the room went out, and the glowing balloon disappeared. As my eyes adjusted to the darkness, I saw Malone standing by a metal box on the wall—the circuit breaker. He'd thrown the master breaker. My opinion of the man, which had been hovering close to zero, climbed a couple of notches. I could hear querulous complaints from the museum's patrons through the door leading into the museum.

"Good job, Malone," I snapped. "Quick, get me his first-aid kit. It's on one of his bookcases." I gripped

Rafkin's wrist, seeking the pulse, trying to gauge how seriously hurt the man might be.

Malone ran to the bookcases, began digging through them with a rough disregard of their contents, which would be sure to infuriate Rafkin. As a matter of fact, Rafkin's eyes snapped open at the sound of someone mistreating his possessions.

"Get your hands OFF! That's delicate equipment!" I'd never heard Rafkin so loud, and didn't expect him to be so vigorous after the tremendous jolt he'd taken, but the aging scientist sat up, pushed me aside, and stood up to harangue the newsman. "Your interest in my work does *not* give you license to manhandle my diagnostic tools. You—"

I broke in, "I told him to find your first aid kit. You've had a shock. Malone pulled the plug on your experiment—"

Rafkin's expression turned to one of puzzlement. "Oh? Then why is it still glowing?"

I turned to look, and he was right: The glow had reappeared around the stone. Now dim, it was gaining in brightness.

Malone stepped away from the bookcase. "That's impossible. I killed the power."

"Malone, Professor," I said, "get out of here. I have a seriously bad feeling about this—"

Malone, no fool, was moving before I finished. But he was still steps from the door when the floor shook, a rippling shock that threw him and Rafkin to the floor; I barely kept my feet.

The brightness on the table increased to blinding intensity, but didn't grow in size...not this time. Instead, something else appeared—something familiar to me, and yet strangely alien.

It appeared in the air above the center of the room: An eerie rectangle of blackness, half again the size of an ordinary door, hanging unsupported in midair. Rafkin's eyes opened wide, seemingly to the size of dinner plates; Malone, from his vantage point on the floor, was again shooting photographs.

"What on *earth*..." Rafkin breathed.

"A moongate," I answered, incredulous. "They're... holes, holes in space and time. I told you about Lord British—that's how I travel to where he is. But I've *never*

seen one that looked like this. It's supposed to be blue, an inviting blue..."

I'd never seen one which behaved like this one, either. Instead of waiting where it appeared and then vanishing, this thing abruptly swelled in size, expanding in all directions, bloating out at all of us before we could react.

Rafkin turned to run; the black surface struck him. Malone got his hand on the door; the black surface crawled across him. I turned and made a dive for the exterior door; the blackness enveloped me in mid-leap.

I was hit with a nauseating falling sensation, as though I were tumbling out of a plane with a blindfold on instead of a parachute. I writhed, struck out in all directions: My hands touched nothing. For long seconds I was caught in the silent darkness of this mutant moon-gate...and then I hit ground.

I landed shoulder first on the lab floor, the pain from my mistimed impact causing my sight to grey out for a second. I could hear Rafkin gasping for breath, and Malone's exclamation: "Mother MacRae, what have I gotten into *now*?"

Then I could hear other things: Distant bird-calls, a breeze stirring the trees. Insect chirpings. A faraway wolf-like howl...

My vision cleared, and I knew where I was.

I lay on the laboratory floor, just where I'd expected to fall. But, while I should have landed mere feet from the exterior wall, the lab floor now gave way to mulch jungle floor. The wall was gone, vanished as if it had never existed.

I looked around, and the same was true in all directions. The walls and ceiling were all gone, replaced by jungle vista. Above was a green canopy of branches. Humid air quickly rolled in to replace the air-conditioned coolness of Rafkin's lab.

The lab was otherwise intact: All its tables, bookcases, stools and cots were still in place, and the cracked moonstone was still wired up to Rafkin's diagnostic equipment...but it was now quiet and dark. Of the black moongate there was no sign.

Rafkin looked around wonderingly and glanced at me. "Um."

"Yes?"

"I don't suppose...this is the place of your dreams?" I nodded. "It's very much like it. The trees and the ferns are all the same."

Malone rose, taking pictures by reflex. His expression suggested that he, not Rafkin, had been hit by an electrical jolt. His mouth worked, but nothing resembling words emerged.

Rafkin continued, delicately feeling his way along: "I'm not going to be an idiot about this. Delusion it may be. I prefer to proceed as though it were entirely real. And if it is entirely real, and possesses many of the same qualities as your dream, then it might...possess others."

"Logical," I answered, amused by his analysis. "If it does indeed feature, um, something like the carnosaur of your dream... Well, I am in possession of a rifle, here in the lab. A collector's item, really; the museum just got it in the the other day, and we were having trouble cataloguing it. I think perhaps we should dig it out." He moved toward one of the bookcases, changed his mind, turned toward the other: "Not that it would necessarily—"

He was cut off by a distant scream. It wasn't a scream of fear, but of anger. Nor was it the scream of a human; it was animal. Shriller and more piercing than the bellow of my dreams, it was much like the hunting-call of a bird of prey.

Rafkin and I whipped around to stare in the direction of the scream; even the bemused Malone looked. Then, we heard another: Also high-pitched, also short and warlike, this was definitely the cry of a human. A woman or a young boy made that cry.

I was running before I realized it, running toward the source of that call, ignoring Rafkin's admonition: "Wait, wait, I'll find that—oh, the devil with it!" I heard him running after me, and then heard Jimmy Malone start out after him.

In spite of the soft ground and thick undergrowth, I made good time, charging full-out through this alien jungle. I heard them again: The animal shrill, the human reply. These were the sounds of battle, of enemies in combat: I was sure of it.

And I was right. I skidded out of the oppressive jungle canopy and into sunlight. Momentarily blinded, I stopped to let my eyes adjust...and then beheld the source of the cries.

This was a broad clearing in the jungle, a stony shelf where the trees could not get a foothold. And over the center of it hovered...a thing, something I dimly remembered as belonging to the era of dinosaurs. It was like schoolbook illustrations of the pterodactyl, the flying reptile with the bone-crested, beaked head, the broad gliding wings...but this thing was *huge*.

I could barely estimate its wingspan: It was flapping so fast, trying to however, that a precise measurement was impossible. It must have been over a hundred feet from wingtip to wingtip. It was a brownish-green, the color of some elephants, a color easy to remember as grey if you don't look too closely.

What was it hovering over? As I started forward again, as I heard Rafkin and Malone skid to a stop just where I had stood, I get a good look at the creature's prey.

It was a woman, and not just any woman: It was the hide-clad beauty who had appeared in my dreams. *The woman of my dreams*... Even in this circumstance, that turn of phrase popped up in my mind, tinging my thoughts with a touch of irony.

The woman held her spear as though she knew how to use it. She did, too. She uttered a scream, but it was no cry of fear: It was a war-cry, a jungle *kiai*. She made a wicked-looking two-handed thrust at the flying thing's underside with her spear, stabbing it, forcing it to flap up further into the air.

Then she heard me pelting up from behind her. She spun involuntarily, focusing on what might be a new enemy.

I saw her face, the face of the woman who'd haunted my dreams. She saw mine, and her expression changed, from ferocity to confusion: I saw a flicker of recognition in her eyes.

Then the flying thing swooped down, taking advantage of her momentary distraction. It slammed her to the ground, one talon closing upon her, sending her spear flying away.

I was now almost upon it, running too fast to stop. It lunged at me, its fierce beak aimed at the center of my chest.

By reflex—reflex which I've cultivated, reflex which has saved my life many times—I swept my arm in a fencer's circle parry and deflected the beak away from

me. The thing's bristly hide gashed my arm; I continued forward and slammed into it where its neck joined its powerful body.

I saw its vast wings rise up, ready for a powerful downward sweep: It was about to take off, to carry away its prey. Breathless from the impact, I locked my arms around the thing's neck. Perhaps my weight would keep it from lifting off, give the woman time to recover and slip free.

My grip was nearly broken when the thing reared its head back and snapped at something—at Jimmy Malone. The reporter, no longer dazed, stopped just outside the thing's reach while it struck at him, then he tried to circle around it. It couldn't track him: There I was, holding its neck in a death-grip, hampering its movements. Jimmy darted in past its head and made a wild leap onto its broad, leather back. "And it's Number 39, Malone, with the sack!" he shouted—but it was bravado. His eyes were wide and frightened.

"Hold on!" I shouted at him. "Maybe it can't lift!"

"Right!" came a voice, but not Jimmy's: It was Rafkin's, from underneath the leathery monster. I spared an incredulous look. There, holding the prostrate woman, trying to pull her free of the giant talon, was the professor, but he let her go to grab the talon—a more precarious hold than the one I had.

The creature writhed for a second, failed to throw any of us clear—though I was bruised, and Jimmy nearly went airborne. Then it swept its great sail-like wings down...and lifted clear of the earth.

It immediately dropped to ground again, and I could hear a thud and Rafkin's pained "oof!" even over the beast's shrill cry, but its next downswEEP lifted it a full eight feet into the air, and with each subsequent wingstroke it climbed higher.

I couldn't look around, and caught only glimpses of thick jungle all about. We'd failed to keep the beast on the ground, and there was no telling where it intended to fly us. Bizarre images of bring dropped into a nest full of hungry, man-sized chicks crossed my mind. We didn't want this beast taking us to its home—better to land in terrain unfamiliar to both of us.

Though each stroke of the wings jolted me and nearly tossed Jimmy clear, I had to get on top, had to get one arm free. Cursing and straining, I tried once, twice,

three times to swing my leg up over its neck, and succeeded on the third try.

Immediately I was banged across the head and nearly knocked out. The bony crest on the beast's head came down as the beast looked up, and that crest nearly cracked by skull. I clung there for a moment as the pain in my head lessened.

Then, breathing a prayer, I tightened my grip with one arm, reached back with the other...put my hand on the hilt of my Bowie knife, still resting in its boot-sheath, and drew it out. A sudden jolt nearly cost me my grip on the hilt, but after a quick heart-stopping juggle I managed to get a good hold on it.

I raised the blade for a death-stroke into the thing's neck, but a brief attack of sanity stayed my thrust. I couldn't afford a quick kill. We had to force the thing to land, not crash. Instead, awkward, I slashed blindly backwards, hoping to hit where the wings joined the body, to damage without killing.

I hit on my third try. As I drew my blade back bloody, the beast screamed again. I'd only thought it was loud before. Gripping its neck, I was blasted by the volume of its tortured scream, and the vibrations from that cry rattled every bone in my body. But still it few, and I stuck again and again, slashing at its shoulders and wings.

From moment to moment, I caught glimpses of the creature's underbody. The first few showed me only a desperately wide-eyed Professor Rafkin hanging on for dear life and an unconscious woman in the creature's right talon.

Then, after a few moments, the woman's eyes opened. I saw her fumble about her garments, saw her come up with a crude knife-blade of stone, saw her strike at the beast's underbelly.

She almost lost her life, right then. The beast opened its talon to drop its stinging prey and she slipped free. But Rafkin, showing surprising speed and strength, caught her one-handed, grabbing at her wrist as if it were the Nobel Prize.

I momentarily lost sight of that life-and-death scene. The beast shuddered and banked sharply to the right, losing altitude, nearly throwing me loose, this was a controlled dive...but the beast was descending, and was descending injured.

Another glance showed me that Rafkin now had both hands back on the talon, and had his stubby legs locked around the woman. She, in turn, eyes narrowed, was holding onto him with one hand, grasping the talon with the other. Their pose was awkward, but fractionally more secure than it had been a moment ago.

The beast screamed its bone-jarring cry again, and its rate of descent, already fearsome, became terrifying. Had it picked out a place to land? I couldn't see one ahead in the unbroken jungle. But whether it had a spot in mind or not, it was whipping in for a landing.

We tore through the top canopy of the jungle and were lashed by fronds and branches. A second later, I heard an impact, felt a shudder as the animal hit and smashed through a light branch.

Then, ahead, there was an opening in the jungle, another broad glade. Bursting into open air, the beast back-winged frantically, trying to slow its forward rate.

It did—only for a moment. I heard a cry of terror from behind me: Jimmy Malone, who'd managed to hold on all this time, was finally cast loose as the monster back-winged. A blue blur, he few tumbling past my head and out of my sight.

Then there was a horrid tearing noise as something in the beast's wing—something I had been carving at—ripped and gave way. The beast screamed one last time; its forward momentum not checked, it crashed headlong into one of those giant palm-like trees.

This impact threw me loose, straight into another tree-trunk. Then I was falling: It felt like a hundred feet, but couldn't have been more than ten.

That was more than enough. When I hit, back first, all wind was driven from my body. I could do no more than gasp for air and futilely try to convince myself to ignore the pain and stand up.

From where I lay, I saw the beast's carcass draped over dozens of yards of jungle floor. It still twitched a little, but I could see no voluntary movement. Then, in the wing nearest me stirred, lifted awkwardly.

From underneath clambered the native woman of the copper skin. Behind her, moving painfully on hands and knees, was Rafkin. Both looked as though they'd been through hell...but both were alive. They looked at the swiftly-expiring flying beast, then glanced about in all directions—for me, for Jimmy.

She caught sight of me first, and came toward me, as skittish as a cautious but fatally-curious cat. Rafkin, on the other hand, saw Jimmy first—Jimmy, and what was following him.

I was amazed that Malone could even move, but he was running: He burst out from among the trees, limping, his clothes torn, his face cut, the flying beast's life-blood spattered all over him...and he was running as if to save his life. Hard on his heels were men: Copper-skinned men wearing garments of leopard-spotted furs, men with the stamp of this jungle on them.

As the woman reached me, cautiously extended a hand down to me, she glanced back and saw Jimmy. One quick, curt syllable escaped her lips, and the native men came to a quick halt in instant obedience of her command. Jimmy, reaching Professor Rafkin, cast one look back, saw he was no longer being pursued, and drew for a moment to an exhausted halt.

My breath was coming back to me. I managed to grasp the woman's hand, let her aid me to my feet...just in time to see one last man enter the glade from the surrounding line of trees.

He was tall, caucasian, blond, young: A man of some height, a man with a lithe, athletic build. His garments were different from those of his companions; he wore tanned leather rather than fur, was booted rather than barefoot.

And his face was known to me. I had seen it countless times, accompanying me through the wildernesses of Britannia, the faraway land ruled by Lord British.

With breath still failing me, I managed to croak his name: "Shamino?"

He looked at me, startled. Recognition came to his eyes, but only faintly. He shook his head, a denial; but his expression was unconvinced, as if he only half-believed his denial. With his hand, he indicated himself: "Shamuru. Shamuru."

The campfire blazed up bright and cheerful, stark contrast to the nighttime darkness surrounding us.

I sat by the fire, by Jimmy, who was festooned with bandages torn from Rafkin's shirt. Nearby sat Rafkin, engaged in halting conversation with the natives named Shamuru and Aiela: Shamuru, the man who wore the face of my old friend Shamino, and Aiela, the woman

for whom we'd taken that impromptu ride through the sky. Around us were perhaps twenty male warriors, jungle tribesmen who obeyed every word issued by Aiela.

I felt better after devouring a quantity of meat blackened on that fire. No, it wasn't meat from the reptile we'd killed—the Super-Pteranodon, as Rafkin dubbed it. The natives shunned that meat as inedible. They'd caught many four-legged plant-eaters, creatures which, except for being hoofless, looked like a cross between a tiny horse and a small deer. Rafkin had taken one look at the brace of beasts caught by the tribesmen, distractedly declared "Hyracotherium," and turned back to his discussion.

Jimmy was scribbling down an account of everything that had happened since he'd reached the museum. Fortunately for him, his battered pocket notebook held many blank pages; I had a feeling he'd see them all filled up before we were done here.

These natives treated us like honored guests. They were impressed with the way we'd killed the Super-Pteranodon, were baffled by our clothes and language, and were grateful that we'd saved Aiela, obviously a person of importance to them.

Rafkin, to his delight, understood certain words they were speaking, declaring that they spoke a variant of a Central American dialect he knew. While darkness gathered he sat with Aiela and Shamuru, and the others set up camp and built a fire.

Rafkin eventually moved back over to us; Shamuru and Aiela, too, drifted over. Nervously, Rafkin pulled off his glasses and rubbed them with a slightly-less-than-filthy shirt-tail.

"Well, I've learned a few things," he admitted. "I've puzzled out a bit more of their dialect and have a slightly more informed idea about what is happening."

"I, for one, am not at all curious," Jimmy deadpanned. "In other words: Tell me, or you'll end up flying around on another one of those pteranothopters."

Rafkin smiled. "This place is some sort of isolated valley. These natives call it Eodon. It appears to be inhabited by a loose grouping of pre-agrarian tribes. I understand that there is one 'village built of stone' where the people farm, which might indicate a more sophisticated culture than that possessed by our friends here.

"Anyway: Most of these people are members of the Kurak tribe. The young lady whom we assisted is Aiela, the daughter of their chief...in effect, their princess."

I glanced up at Aiela, found that she was already staring at me. Though startled by the sudden contact, she did not turn away.

Rafkin continued, "The other fellow, Shamuru, is a member of an upland clan called the Barako. He was born among them. They found him wandering in the mountains, amnesiac, a few months ago. The name you keep saying, 'Shamino'—it agitates him, but he cannot remember it. He does say that he knows you from somewhere, and that he has never seen you before."

I grinned. "That doesn't exactly make sense does it?" "Rather. It obviously confuses him."

"Anyway, Aiela says she has had several dreams lately, dreams where she has been in terrible danger from some sort of insect-like creature, when who should appear but a mighty strange warrior...oops, let me correct that, a strange, mighty warrior...who saves her. A warrior with your face.

"At any rate, Aiela appears to be accorded special warrior status within her tribe, and hunts on her own. She says that yesterday she was ambushed by warriors from another tribe, the Urali, and that their chieftain—strongman she calls Darden the Huge—decided she was the woman for him.

"She managed to get clear of Darden and took a long route to get back to her village without meeting him again. That's when she was attacked by the creature I'm calling a Super-Pteranodon. A marvelous species. Several times as large as Quetzalcoatlus. Fully articulated wings not just a glider." He shook his head wonderingly.

"You know the rest. Shamuru, who's a friend of the tribe, and several of her tribesmen have been searching for her since yesterday."

His voice became more animated. "According to these people, the Super-Pteranodon is only the tip of a primordial iceberg. They talk about many enormous reptiles to be found in this valley. I have to see them. It looks as though we're dealing with multiple cases of extraordinary survival of species."

Rafkin's expression finally became more serious. "Now, are you going to confide in me and tell me how you think you know this Shamuru's face?"

I glanced around. Aiela was intent; she continued to study me, curiosity and wonder in her eyes. Shamuru appeared to be impassive, but I could see from his eyes that he was distressed. Jimmy never met my eyes; he was scribbling as fast as he could, trying to keep up with all details being discussed.

I sighed, regretting the necessity of discussing this with Malone around, but gave in. There was no telling when possession of all the facts might save a life...perhaps even mine.

"I told you that I occasionally do favors for a foreign dignitary who goes by the name Lord British. That's true. I sort of led you to believe that he was European, that his name was a code-name, but that's *not* true.

"British lives in a place—a *world*—he calls Britannia. I like to think of it as a distant reflection of our own world. I get the impression, from his choice of names and other clues that he's had some contact with our world, but I've never gotten the whole story out of him.

"I've been to Britannia several times, always traveling there in a moongate, a portal. What you saw in your lab today was a sort of moongate...but a very twisted and alien one. I've never seen one like that before, and don't know why it behaved like it did, or why it brought us here instead of to Britannia.

"Shimino, who's a dead ringer for Shamuru here, is a friend of mine in Britannia. It's disturbing to see him here, like this, minus his memory...assuming that Shamuru is Shamino, that is."

Shamuru's eyes flickered every time his name, or rather *either* of his names, was spoken.

"There's some corroboration in things he's said," Rafkin admitted reluctantly. "But it's still a...peculiar story."

"It's even stranger if you've lived through it. Listen, I'm *not* asking you to believe it. It's probably better if you just forget you ever heard it. But you asked, and you deserve the truth. Later on, if you decide to institutionalize me, just give me a head start." I grinned. "They'll never find me."

I glanced again at Aiela, caught her steady gaze. "Uhhh, Professor...In the time you've been talking to

these people, have you figured out: Did I assume some sort of responsibility for Aiela, by helping to save her?"

Rafkin grinned, quickly suppressed it when I glanced back at him. "Are you afraid of this, or hoping for it? Don't answer that. A rhetorical barb. No, I don't get the impression that obligation of that sort is one of their customs. She *has* repeatedly expressed her gratitude to us, particularly to you. And she's very curious about you. I have a feeling that you'll need to take a crash course in their language...if ever you're to speak with her alone, which is obviously what she wants."

I nodded. "Tell her—"

I was interrupted by a strange, chirping cry from the forest. Two warriors stood, and one raised a hand to his lips and issued a similar cry. Others whispered quickly to one another; Rafkin spoke briefly with Aiela and turned back to us.

"One of the scouts," the professor informed us. "He's alerting us about a beast. Something they call a Shield-Back. I think I have to see this."

He rose, and again Aiela spoke with him. Disappointed, he said, "She says it's a leaf-eater and that it won't come near a fire or men."

"Poor thing," Jimmy intoned. "Maybe Santa will stick a dinosaur in your Christmas stocking."

Rafkin glared, Jimmy laughed...and a native out in the jungle screamed.

In an instant, we were all standing, the natives catching up their spears and bows.

Out just beyond the edge of the firelight, there was a *whuff, whuff* noise—like a bull breathing impossibly loudly. Then, our phantom "bull" moved into the light.

This "Shield-Back" was a reptile, long, broad, and flat, with a knobby back, something like the horned toads of the southwest...but *enormous*. This thing was larger than a luxury car. It was no fake, no special effect; it was *alive*, and lumbering toward us.

As it passed further into the light, we caught sight of the things trailing from its mouth and across its back. They were something like vines, something like ropes. They were, in fact—

"Reins," Rafkin breathed.

He was right. On its back was the silhouette of a man, a huge, broad-shouldered man the size of an NFL defensive lineman.

Aiela shouted words of command, and I understood one: "Darden!" Darden her thwarted suitor, Darden the enemy chief.

Darden yelled a reply, a basso-profundo roar, and was answered by more war-cries from the forest. There were more men, Darden's men, in the jungle; they moved in quickly, forming a line in front of the lizard he rode.

Aiela's men wavered, dread in their eyes, dread of the kind of man who could command a giant reptile. That kind of dread is fatal, and I knew it. Before my common sense could catch up to my instincts, I grabbed a spear from an inert Kurak warrior and shoved my way through the Kurak line, shouting a wild Britannian war-cry.

The attackers expected an easy victory; perhaps they'd counted on the Kuraks being afraid of the reptile and its rider. I charged up to them before they realized they were wrong. The first warrior I faced tried a simple thrust; I slid his point out of line and put my own into him, a brutal thrust into the center of his chest. He hit the ground hard.

But these jungle men recover fast. I was surrounded by a dozen hard-eyed men with spears. I went on the defensive, parried one thrust, blocked another and kicked its wielder hard on the side of the knee. I had the satisfaction of hearing that joint crack, seeing the warrior collapse with a cry of pain.

Then the Kuraks woke up. A shower of arrows rained into my enemies. Darden's warriors fell back. Aiela's spearmen came up on either side of me, forming a line, while Aiela's archers prepared another volley.

Had it been just their warriors against ours, we could have scattered them back into the jungle. But while I took down two warriors and was joined by Aiela's men, the musclebound monster named Darden was bringing his riding-lizard up to speed. The reptile hit its stride. Darden yanked on its reins, harshly pulling its head toward us. The giant lizard slewed over in our direction, came within twenty feet of us, fifteen...

There was no way Aiela's warriors could hold the line against four tons of churning meat and bone. I opened my mouth to call for the line to break, to surround the Shield-Back and fall on it from the side, but I never got the chance.

I saw the hurtling spear out of the corner of my eye. I tried to twist out of its way, but was only partially successful; the stone head grazed my temple, stunning me, staggering me back.

I could only watch as the reptile charged forward, still picking up speed, slamming through the line of Kurak warriors, scattering and crushing them. I was still dizzy; my legs wouldn't move. I watched helplessly as Darden jerked its head around to orient on me. One step closer, two; its head was almost upon me; I saw the cold amused laughter in the eyes of Darden, saw his handsome features twisted in a broad smile of victory...

But I didn't see the blow that put me down. The lizard's leg must have clipped me; all I know is that a flew back, smashed once again against a tree, slumped down at its base.

I should have passed out then. I might as well have been unconscious: couldn't move, couldn't speak, couldn't even tell if I were still breathing. But I could still see.

I saw Darden and his mount draw abreast of Aiela where she stood, her bow at the ready, aiming straight and true at Darden's throat. I knew he was a dead man. But I was wrong.

Behind Aiela crept up another stealthy Urali warrior. He swung the shaft of his spear against her head; she collapsed and her shot went wild. I couldn't see Darden grin then, but knew he still wore it, that it broadened and became even more triumphant as his warrior handed Aiela's inert form up to him.

My last sight was of the Shield-Back and its precious cargo lumbering out into the night. Then darkness closed down on me. I fell into unconsciousness as deep and dark as a well.

Next Issue—Chapter Two: Strange Reunions.

Some Reflections on the Flora and Fauna of the Valley of Eodon

by Professor Elliot Archimedes Rafkin

Editor's Note: The following article was transcribed from handwritten notes provided by Professor Rafkin, who elected to stay behind in the Valley of Eodon.

It is a trifle distressing to realize that future generations will remember one's name more for a stroke of extraordinary luck than for personal accomplishments. That, I think, is my own situation. Though I never had reason to doubt my own qualifications, it is inevitable that the scientific community will eventually regard me as the chronicler of the remarkable Valley of Eodon—as a Bosworth to a primordial Johnson. And it was sheerest luck, not scientific inquiry or archaeological exploration, that led me to find the valley.

My good friend Jimmy Malone informs me that he will be arranging for the story of our discovery of the valley to be published before these notes see the light of day, and that I need not fill the few remaining pages of his battered notebook with another account of that story. So I shall instead provide a summary overview of the valley itself—the world's first look at this remarkable setting. It is my hope that in the future I will be able to send out more thorough essays on the topic.

The Valley of Eodon is, to a scientist, rather akin to a time capsule which was filled with amazing treasures and crucial information...but flaws in its construction allowed moisture to seep in and corrupt the wondrous items within. As labored as this simile may be, it is indeed representative of the facts. In these few pages remaining to me, I will look at some of these "treasures" make hypotheses about their origins and the changes they have undergone.

The people of Eodon

The people living in the Valley of Eodon, with an important exception, are pre-agrarian, untouched by the

Agricultural Revolution. To the readers of Mr. Malone's more general-interest publication, this means that they do not grow food; they are hunter-gatherers, living on the meat of the beasts they hunt, and supplementing their diets by gathering plants, nuts, and fruits which grow wild in the wilderness. The exception to that generalization is the Nahuatla race, who are somewhat more advanced than the other tribal groupings.

By and large, the peoples of the valley live in small tribal groupings. Though the tribes appear to have originated in very disparate parts of the globe, they have apparently assimilated to a significant degree, and now most tribes are organized along very similar fashions.

Each tribe is led by a hereditary chieftain, who acts as the dictator of tribal policy, adjudicator of disputes among tribe members, war-leader in the frequent clashes between tribes, and representative of the tribes to all visitors and dignitaries.

Also very crucial to the tribe's chain of command is its shaman, or spiritual leader. The tribal shamans conduct important rituals which divine the wishes of certain "nature spirits" revered by the people of the valley...but I will address that topic momentarily. The shaman also acts as advisor to the chieftain, performs ceremonies of "marriage" (i.e., ceremonies in which the nature-spirits are invoked to recognize the validity of a nuptial bond), and often acts as principal healer to the tribal unit.

Below the tier to which the chieftain and shaman belong, the precise hierarchy of the tribe is somewhat difficult for an outsider to discern. Warriors are accorded a special status; so are tribesmen who develop a bond or special affinity for the beasts of the jungle, such as jaguars. Different tribes have different approaches to the rights of their female members. Some are distinctly patriarchal, with women distinctly second-class citizens; at least one is definitely matriarchal; and many others seem to have traditions of women in subordinate posi-

tions while yet allowing certain capable women to attain the skills and status of warriors.

A certain amount of assimilation has taken place among the tribes over the years; there has been a good deal of interbreeding between the tribal units, so that none is precisely a pure descendant of a specific outer-world culture. However, many of the tribes have retained distinctive racial and cultural features over the centuries, and it is fascinating to study them and speculate on their origins.

Before progressing on to a look at the individual tribes, let me say that the thing which most struck me about these humans—the thing which I should have anticipated, and yet which still gripped me when I perceived it—is the manner in which they have adapted to their wild environment. In a land replete with prehistoric reptiles and other beasts of antiquity, the cultures, iconography, and mythology of the peoples have adopted to reflect these surroundings.

It is not uncommon, for example, to see a tribal chieftain whose elaborate headdress is a hood fashioned from the skull and beak of a large pteranodon...a wooden tribal border marker rather like a "totem pole" carved with the features of carnivorous dinosaurs...warriors carting about shields fashioned from the skin of reptiles thought extinct for more than 65 million years...cave-paintings showing human warriors locked in deadly combat with the mighty triceratops or ankylosaurus...Scenes like these, commonplace and invisible to the natives, are amazing and delightful to the anthropologist. I hope to be able to study them for many years to come, and that I will be joined by those even more qualified to such study.

All humans in the valley speak a common language, a mother tongue which appears to have been blended from several sources, principally the *nahuatl* tongue of central America. Examinations of their individual dialects, however, sometimes illuminate the tribes' true origins.

Nahuatla

There is no double in my mind that the Nahuatla people are related to the outer-world Aztec culture. Indeed, it is my belief that the Nahuatla and the Aztecs both descended from a single culture, and that members

of that culture were transported to the Valley of Eodon at a time in the ancient past. The very word "Nahuatl," in fact, refers to the language spoken by the Aztecs.

The Nahuatl, like their outer-world counterparts, build massive pyramids, temple buildings, and homes in stone. They work gold. They have a certain reverence for the sun, but they do not anthropomorphize it, or directly worship it: Like the other valley natives, and unlike the Aztecs, they withhold their special reverence for the valley's nature-spirits. However, Nahuatla legend and the behavior of a recent Nahuatla leader make me believe that ancient customs of human sacrifice were once part of the Nahuatla culture.

They are somewhat more technologically advanced than the other tribes, working copper and bronze for ornamentation...although tradition has apparently kept them to the obsidian standard for their weaponry. And they are distinctly more agrarian than the other tribes, growing and harvesting much of their food, hunting and gathering the rest.

Yolaru

The Yolaru are a black tribe dwelling in some of the deepest jungles of the valley of Eodon. Their antecedents are definitely African, but I have been unable to pin down even an approximation of the era they left their homeland and came to the Valley of Eodon.

I had the fortunate opportunity to live among the Yolaru for a time, and found them to be among the most civilized of the human tribes of the valley—civilized not in terms of technological advancement, but in the sophistication of their tribal laws and the tolerance in which they hold the beliefs of other tribes.

Their dialect of the common valley language contains elements of what I believe to be Bantu dialects. Their choices of weapons include the to-be-expected spear and knife, but the Yolaru warriors also had a certain affection for large wooden club-like maces featuring wicked-looking obsidian spikes.

Barako

I had very little opportunity to study the Barako, a northern tribe of the valley. They are mountain-dwellers, fond of high craggy places and heavy wrapped-fur garments; a Barako warrior is considered most noble when his garments come from the fur of the

ferocious cave bear common in the Barako mountains. No fools, they do most of their hunting with the simple bow, and appear to use their heavy wooden clubs only in times of emergency.

The Barako are a matriarchal society, their rulership being handed down from queen to queen. Though other tribes of the valley appear to have had independent queens, the Barako are the only tribe to whom this appears to be the norm.

A caucasian race, the Barako are insular (they are among the most isolated tribes to be found in the valley) and aggressive, but appear to form strong family bonds. Their dialect of the common language appears to contain more of the other dialects; it is therefore likely that they hail originally from prehistoric Europe.

Barrab

An interesting race, the Barrab live atop a mesa on a distant corner of the lost valley. Their skin tone is somewhat yellow, and these racial factors, plus some unusual structures in their dialect of the common valley language, lead me to conclude that they originated in eastern or northeastern Asia of many centuries ago.

The Barrab live at a higher altitude than most of the valley residents. Their rulership combines both secular and mystical interests: Their chieftain is always their shaman. They are expert climbers, and my friends who have observed them in warlike situations say they prefer to climb to high altitudes and rain spears down on their prey, often utilizing the atlatl, or spear-thrower.

They are a very polite people, as cultured in many ways as the Yolaru, but not as outgoing or tolerant of outsiders.

Disquiqui

Though I can detect practically no evidence of it in their dialect, the Disquiqui bear certain cultural traits in common with the peoples of the South Seas. Considered irresponsible and annoying by many of the other tribes, the Disquiqui tend to be happy, musical, and rather notoriously amorous.

However, in spite of their behavior, which tends to range from the humorous to the bizarre to the celebratory, I always recall how and where Captain Cook died,

and keep my wits about me when dealing with the Disquiqui.

Jukari

A reverent and hard-living race, the Jukari occupy lands in the vicinity of the valley's active volcanoes. Their lives seemed to be dedicated to a few simple tasks: Finding enough to eat in the harsh, unpromising volcanologists' paradise they occupied; placating the nature-spirits whom they felt cause the earth to rumble and the mountains to "spit fire," and coping in a warlike fashion with the nearby tribe called the Haakur.

The Jukari are amongst the most primitive of the valley's tribes, and their dialect of the languages gives me few clues as to their outer-world origin.

Kurak

The Kurak were one of the more interesting cultures of the lost valley. Evidently descended from certain South American Indian tribes (or so their dialect attests), they appear to have profited more from interaction with other tribes than their fellows. Their legends make it clear that they have frequently accepted exiles into their ranks, particularly exiled warriors and runaways from other tribes. This has certainly profited their gene pool and given them a reputation as the valley's "melting pot" tribe.

A tribe of deep jungles, the Kuraks revere the jaguars, and some of the tribesmen actually appear to develop emotional bonds with the wild felines.

The Kuraks are famed in the valley as stealthy warriors, as very accurate spearmen and bowmen. Though they have a history of warfare with the Yolaru, they are much like that tribe in many ways.

Pindiro

It seems evident that the Pindiro have a distant relationship with one or more North American Indian tribes, particularly plains-dwelling tribes. Some dialectal phrases reminiscent of the Siouan language group, and their nomadic, plains-oriented lifestyle point to this origin.

The Pindiro appear to feel the closest kinship with the *eohippus*, or "down horse," ancestor of the modern equines; this mammal as large as a medium-sized dog, is very numerous on the Pindiro plains. The Pindiro

hunt and trap the animal for its meat and fur, and keep some as pets.

Interestingly, though the Pindiro appear to be patriarchal in structure, their legends cite many independent queens, and the current ruler of the tribe at the time of this writing is a queen.

Urali

Among the most exasperating peoples of the valley—exasperating in both a personal and academic sense—are the Urali tribe. It would be difficult to find a more suspicious, insular culture.

According to the legends of the Yolaru and the Kurak, the Urali once lived out in a marshy region of the central jungle area of the valley, east of the Nahuatla. However, over a period of centuries the marsh gradually dried out, forcing the Urali into an ever-smaller homeland...for the Urali *do* prefer swamps to more congenial surroundings.

Eventually, again according to legend, the Urali just vanished as a tribe, not to be heard from again for quite a long time. (The natives say it was a thousand years, which is unlikely, but following the approximation of dividing by ten any such inflated number out of antiquity, a century is not unlikely.) As it turns out—as modern members of the Urali will reluctantly admit—an Urali scout of that time discovered access to another, greater swamp region and the entire tribe migrated there in secret. It was not until recent years that the other tribes encountered Urali exiles and discovered that the Urali still existed; and only in recent months has contact with the Urali been extensive, as a recent chieftain led the tribe in raids against the other tribes.

But the Urali remain as secretive as ever, and will not willingly divulge the secret of the access to their hidden swamplands. As it turns out, that access is not too far afield of their original homeland (else the legends of other tribes might mention the Urali migrating before disappearing altogether).

On an academic level, the Urali are exasperating because it has been difficult—rather, impossible—to discern their outer-world origins. Based on the preponderance of rogues, outcasts, and exiles in their folklore, the blended quality of their dialect and racial characteristics, and other data, it is my belief that they are a tribe

originating in the valley itself, being composed of exiles who fled to the seclusion of the swamps in order to elude their enemies. This is certainly an appropriate origin for this suspicious tribal personality. However, this is merely a working hypothesis. It will take a more accomplished linguist and anthropologist than your humble correspondent to root out the truth about their background.

Haakur

Saving the best for last, I present the Haakur. My initial impression of their was that they were a tribe whose homeliness, excessive hairiness, characteristic facial features (such as jutting jaws, prominent supraorbital ridges, and oversized noses), and other factors were simply the result of inbreeding and perhaps cultural selection.

However, such turns out not to be the case. Examinations of an injured Haakur warrior—especially concentrating on the shape and volume of the skull (the brain case actually being greater than that of *homo sapiens sapiens*), the curiously limited characteristics of the vocal chords, their patterns of thought (far more intuitive and instinctive and far less rational) than the other humans of the valley—lead me to the inevitable conclusion that here we have living examples of *Homo sapiens neanderthalensis*, or Neanderthal Man, extinct on the outer world for at least 30,000 years.

If the Haakur were the only evidence I had of such an amazing survival, I would be greatly tempted to dismiss it—to presume that conditions of health and breeding had led one insulated pocket of humanity here to develop neanderthaline physical characteristics. But, as will be demonstrated below, this is far from the only case of survival.

Ironically, though modern anthropological theory holds that the Neanderthals were more upright than the brutish, bent-knees posture firmly fixed in modern folklore for the “cavemen”—that, in fact, a shaved and suitably-dressed neanderthal would merely be considered somewhat homely by modern man—the Haakur come much closer to fitting the stereotyped image. Millennia of inbreeding and hereditary arthritis have conspired to make the Haakur of the valley of Eodon almost precisely into the stooped, hunched “cavemen” of pedestrian Saturday cinema.

The Spiritualism of the People

Man does not live by bread—or, in the case of the valley's natives, principally meat—alone. The peoples of the valley have a distinct spiritual side to their cultures.

Each tribe is served by one shaman and one or two shaman apprentices whose task it is to commune with the nature spirits they believe inhabit the valley. They commune with these spirits for guidance, beg them for courage and the benefits of health in times of trouble, ask their forgiveness when slaying totem animals, and ask portents of the future.

All of this would seem to be commonplace, except for the manner in which these rituals sometimes manifest themselves. The shamans are very accomplished at demonstrating what can only seem like “magic” to their more credulous brethren.

When attempting to perform “magic,” a shaman will draw forth a small carved stone icon representing the nature-spirit he wishes to invoke, and will make an offering to that icon—for example, scattering a handful of grain to the wind. Then, the shaman concentrates or mediates while chanting, and in short order some interesting effect results.

Make no mistake: Their performances are convincing, and no one living in the valley, the shamans included, perceives them as connivance or fakery. And while I do not know if they are utilizing an unconscious form of mass hypnosis, a biophysical process such as that which produces hysterical stigmata, or some other technique, their “magic” is quite inexplicable and believable. I have seen the injured and sick know if they are utilizing an unconscious form of mass hypnosis, a biophysical effect miraculous recoveries after being “healed” by a shaman...and, while most of the healing is unquestionably taking place only in the mind of the patient, the results of this healing far exceed any results I have heretofore seen in conventional hypnosis.

It is a fascinating phenomenon, and one which I hope to be able to study for many years to come.

The Fauna of Eodon

I note with dread the upcoming end of blank pages in Mr. Malone's fabled notebook, and will strive to dis-

till the rest of my commentary. In doing so, I will no more than briefly mention the more “mundane” varieties of animal life to be found here—a great variety of snakes (principally vipers; constrictors do not seem to have survived here), a large and beautiful species of black jaguar which has been very successful in this environment, a great variety of parrots—and will instead concentrate on the more extraordinary forms of animal life to be found here.

Unfortunately, I can do no more than briefly mention the variety of enormous cave spider to be found here in the Valley of Eodon. This is a web-building spider, an absolutely huge species—one example I have seen measured six feet across with legs at extension. They occupy certain caves in the valley, but do not rely on the bounty of their webs: They go foraging at night. I have not had the opportunity to study them and cannot offer much in the way of scientific discussion of their origins.

I mentioned “survivals” earlier, speaking specifically of species which here have survived the extinction which befell them in the outer world.

There are many such cases of survival here, and I will address several of them briefly. You will doubtless scoff at this listing, dismissing it as impossible, an attitude I encourage among the scientifically-minded...but I must also insist that when qualified scientists have come here and seen what I have seen, the scoffing will cease.

Among the animal types to be found in the Valley of Eodon are the following:

Allosarus. Family Allosauridae. The Allosaurus dates to the late Jurassic and early Cretaceous (centering on about 144 million years ago). It is a carnivorous dinosaur which moves about on two legs; some 40 feet long and 15 feet in height, it weighs (from casts I have taken of its footprints and estimations therefrom of its weight) about one and a half tons. The only ones I have seen in the valley have been solitary hunters, but the natives swear to me that they sometimes band together in packs to hunt down larger prey, such as the apatosaurus. I do not know whether these stories reflect the truth, or are tales designed to terrify unwitting outsiders such as myself. (In truth, they did manage to achieve that effect.)

Alphadon. Order Pantotheria. This primitive mammal dates to the late Cretaceous period (around 65 million years ago). It is best thought of as a three foot-long marsupial superficially resembling an opossum. In the valley of Eodon, they occupy the ecological niche elsewhere taken by modern rates. They are clever omnivores, capable (via gripping feet and prehensile tails) of living in trees, and can be quite dangerous in packs.

Ankylosaurus. Family Ankylosauridae. This low-slung dinosaur with the armored back dates to the late Cretaceous period (about 65 million years ago, up to the end of the age of dinosaurs). An herbivore, it moves about on four legs, defending itself with a massive macleike knot at the end of its tail. It grows to some 18 feet and weighs about three tons, making it about the length and weight of a car. I have personally seen one native man riding a smaller variety of ankylosaur, but as he was in the process of trying to murder me at the time, I failed to query him on his techniques for capturing and training the beast.

Apatosaurus. Family Diplodocidae. The Apatosaurus as for years known, and is still popularly known as the Brontosaurus. Though by no means the largest dinosaur known in the outer world, the Apatosaurus is the largest to be seen within the Valley of Eodon, being some 80 to 120 feet long and weighing some 30-35 tons. Though prevailing scientific theory (and evidence within the Valley) holds that the apatosaurus does not actually spend the majority of its life in the water, the apatosaurus of the Valley does tend to seek the swamp-waters when danger is in the air; this terrain discourages the greater predators such as the allosaurus and tyrannosaurus. The native name for this beast translates, most appropriately, as "Longneck."

Archelon. Order Chelonia. Suborder Cryptodira, Family Protostegidae. Modern readers would doubtless prefer to call it a "big turtle." Dating to the late Cretaceous period (i.e., somewhat over 64 million years old), the Archelon is a sea turtle of preposterous size, growing to some 12 feet in length. The varieties I have seen in the Valley of Eodon have been freshwater variants who are accustomed to the presence of humans and will often forebear attacking humans if thrown a quantity of food.

Deinonychus. Family Dromaeosauridae. The Deinonychus dates to the early Cretaceous (some 144 million years ago) and is a fast-moving carnivorous dinosaur which runs on two legs. It grows to about 12 feet in length, stands around 6' in height, and weighs as much as a man. While living with the Yolaru tribe, I had opportunity to see a pack of Deinonychus hunting, attacking, and killing a juvenile apatosaurus, a most remarkable and illuminating sight. It is my hope that in future letters I may provide commentary on the social structure of the Deinonychus and other saurian species.

Dimetrodon. Order Pelycosauria. Not technically a dinosaur, this creature belonged to that class of reptiles from which the mammals evolved. Dimetrodon dates to the early Permian era (about 286 million years ago). This four-legged, low-slung reptile is about 13' long, weighing some 450 pounds, and features a large, sail-like spinal crest used to regular its body heat. It has very powerful jaws and kills its prey by clamping onto and holding its victim until it perishes. In the Valley of Eodon, it's an early-morning hunter, usually making its kill shortly after dawn or going hungry for the day.

Gigantopithecus. Family Pongidae. This primate is an enormous gorilla-like animal, standing some twelve feet in height and weighing in around 900 pounds, if my measurements of its tracks can be trusted. The native name for it translates roughly as the "black ghost," referring to the color of its hair and its solitary, normally shy habits. Though it does not seek out other animals—except for small rodents to supplement its otherwise vegetarian diet—it is a ferocious adversary when injured or angered, and the natives are terrified of it. Too, it is to be noted that there are occasional "rouge ghosts" who develop strange, deviant behavior, such as rampaging through the jungles and terrifying most men and animals in their path, or breaking away from their gigantopithecus clan and seeking to form new clans—often with smaller, intimidated "black ghosts" or even humans! In the Valley of Eodon, the Gigantopithecus dwells on the mountain slopes and ledges.

Hyracotherium. This small animal (some two feet in total length) is more commonly known as the *eolhippus*, or "dawn horse." As the name suggest, it is the ancestor of modern horses. It dates to the early Eocene

era (around 55 million years ago). It is very common in the Valley of Eodon, especially in the northern plains, where the natives hunt it for its hide and meat. (It is in no immediate danger of extinction, being a prolific breeder and a very good runner.)

Megatherium. This ancestor of the modern tree sloths was a ground sloth the size of some modern elephants. Walking about on four legs, it was some 20 feet long and 6 feet at the shoulder, and weighed on the order of three tons. Its descendant in the Valley of Eodon is much the same, and behaves much like its tree-sloth relatives: Vegetarian, slow-moving, mostly peaceful. It is not, however, an easy kill for natives or dinosaurs, being capable of fighting savagely for its life.

Plesiosaur. Order Plesiosauria, Superfamily Plesiosauroidae. This is a water-dwelling dinosaur dating to the early Jurassic (some 200 million years ago). Growing to twenty to twenty-five feet in the valley, the plesiosaur is a dangerous and aggressive animal. Certain outer-world descendants of the species grew to more than forty feet in length, and may well be represented in the deeper waters of the valley. The still waters (such as the swamps) are sufficiently rife with them that it is unsafe to cross except on a raft or perhaps on the back of an accommodating apatosaurus or archelon.

Pterosauria. Numerous examples of the famous flying reptiles are in evidence in the valley. The species they represent date from the early Jurassic (213 million years ago) to the late Cretaceous (some 65 million years ago), from the Dimorphodon of England to the Quetzalcoatlus of the southwestern United States. In addition, another pterosaurian species, a super-pteranodon who dwarfs the mighty Quetzalcoatlus and is capable of becoming airborne while carrying hundreds of pounds of prey, exists in the valley; I do not know whether it is a survival of a hitherto-undiscovered species from the outer world or a species which has developed in the peculiar conditions of the Valley of Eodon. When I have had opportunities to examine more of these "super-pteranodons," I shall provide the scientific community with more data on them...and, of course, will take the discoverer's prerogative of naming the species.

Smilodon. Family Felidae. This beast, dating from the late Pleistocene era (about 10,000 years ago), is the

archetypal "sabre-toothed tiger." Here, as with the Haakur, conditions in the Valley of Eodon have made the creature match its popular conception rather than its outer-world reality. Though laymen regard the 'sabre-toothed tiger' as a monster the size of a Kodiak bear, actual outer-world smilodons seldom grew longer than four feet. However, in the Valley of Eodon, I have seen many sabre-tooths four times that size. The smilodons of the valley are vicious, brutish animals, terrifyingly aggressive in combat and capable of little cunning; they have been known to mortally wound their prey and sit back for it to die, but that is the extent of their "tactics."

Stegosaurus. Family Stegosauridae. This beast dates to the late Jurassic era (around 144 million years ago), was some 25 feet long, and weights around four tons. An herbivore, it is notable for the series of spiny plates which protrude from its spine, and for the knot of sharp spikes at the end of its tail—its most formidable weapon. I regret to say that I cannot settle the debate over whether the spiny plates are actually armor or a mere heat-dispersal mechanism; none of these plated beasts has allowed me to get close enough to determine this. However, the natives of the Kurak tribe say that monsters such as the Sharptooth (Tyrannosaurus) circumspically avoid the spines when attacking the Stegosaurus, which is some evidence that they play a definite defensive role.

Triceratops. Dating from the late Cretaceous (70 to 65 million years ago or so), the triceratops is the dinosaur famed in art and moving pictures, with the shield-like head featuring three protruding offensive horns; the horns over the eyes are over a meter in length apiece. This herbivorous beast is over 30 feet long and weighs, as far as I can tell, in the vicinity of ten tons. In the Valley of Eodon, the Triceratops moves about in herds through the forests and the plains, living off the luxurious plantlife and using pack tactics to defend itself from predators.

Tyrannosaurus. Family Tyrannosauridae. The Tyrannosaurus dates to the late Cretaceous period (some 65 million years ago, about the end of the era of the dinosaur). It is another carnosaur moving on two legs, and is almost 60 feet in length. It stands a few feet taller than the Allosaurs (or is it merely that it *appears* to

stand taller? I must do comparative measurements sometime...when I am able to do so without being consumed) and weighs four times as much, massing some eight tons.

Among the inhabitants of the valley, its native name translates roughly as "Sharptooth." As observed in the Valley of Eodon, the Tyrannosaur is actually a quick-moving and *intelligent* predator; the natives say that it is in the habit of hiding itself behind stands of trees or ridges of hills and then ambushing its prey, roaring and racing down upon them at full speed. It is a prodigious and terrifying beast.

The tyrannosaur skulls I have been able to observe here suggest that the local species has developed a genetic defect in its skull structure: A blow of sufficient magnitude, assuming that one is able to hoist a boulder high enough into the air and drop in onto the tyrannosaur's head, might be enough to slay it in a single blow, if my calculations are to be trusted.

Ursus spelaus. Family Ursidae. The mighty "cave bear" first appeared in the outer world some two million years ago, in the Pleistocene era and survived well beyond the Ice Age. A large bear, it is still not as large as certain modern bears. The bears observed in the Valley of Eodon seem content to subsist on grubs and vegetable matter, but the natives are certain that it will kill quite effectively if provoked.

And let me not finish this discourse without mentioning two of the most amazing examples of "animal life" I have encountered in the Valley: The Sakkhra and the Myrmidex.

The **Sakkhra** are a bipedal dinosaurian race. They stand some six to seven feet in height and weigh an average of about 150 pounds. And, though this statement will inevitably lead to consternation and mockery among my fellows in the scientific community, they have every appearance of being a sentient race, possessing language, the knowledge and ability to flake stone into weaponry, civilized customs, and the ability to learn and speak some of the human language of the valley. They seem to be an evolutionary offshoot of some bipedal carnosaur; my best guess places their ancestor in the family Dromaeosauridae. They feature cranial crests as, it would appear, warning mechanisms and secondary sexual characteristics, and the Dromaeosauri-

dae distinctive sickle-claw on the lower legs is merely a vestige in the Sakkhra.

The **Myrmidex** are an insect species, but one unlike any ever seen in the other world. Myrmidex (my own name for them, and the name to which I've translated all native references to them in our various notes and papers) are ant-like in structure and social organization but grow to manlike size. As such, they make hash of prevailing theory about the square-cubed laws, but they do exist, and are a formidable and savage race...much like the ants to which they appear to be related. They are a frightful danger in the Valley of Eodon, and show signs of intelligence to augment their ant-like ferocity and tirelessness.

The Flora of Eodon

I look with alarm on the shrinking number of blank pages available to me in Mr. Malone's notebook, and I must be brief here.

The Valley of Eodon is a remarkable hodge-podge of terrain types. At its heart, in both a geographical and thematic sense, is jungle—a jungle featuring plant-life largely retained, I believe, from the Jurassic and Cretaceous. It is distinctly a rain forest, but unlike any known to the outer world.

Side-by-side, and growing in great profusion, we see giant horsetails of the Carboniferous era; luxuriant seed ferns of the Permian era; great conifers of the Jurassic; and flowering plants and modern-seeming tropical plants of the Cretaceous. In addition, many forms of plant life are identical to those to be found in the Amazon basin of the outer world, one more datum to my mind, that the Valley of Eodon is in that region of South America somewhere.

However, in the north of the valley, the terrain abruptly gives way to upland plains, where maize and modern grasses grow. In the southeast, stony land predominates, where little grows; this is the region dominated by active volcanoes, a volcanologist's dream. And then there are the rich Urali swamplands, a microcosm of Jurassic-era swamp conifers.

The Future of Eodon

Recent events in the Valley of Eodon make it inevitable that the land will soon be discovered by mod-

ern man. It is imperative, if knowledge is to prevail over green and politics, that the scientific community and environmentalist interests move swiftly to protect and study this strange, rich, and ultimately vulnerable region from the ravages of promoters, builders, and profiteers.

Scientists of all disciplines must come here in order to study and catalogue the flora, fauna, and geography of this land. Anthropologists and archaeologists must do the same for its intelligent population. National government must apply pressure to the ruling body of whatever country the Valley turns out to reside within, that developers not pave over the Valley and its riches before they can be studied.

Weapons of the Tribes

Just as every tribe has a hierarchy—with the chief at the top, followed by the shaman, the chief's children, senior warriors, and so on—the natives of the Valley of Eodon believe that their weapons have a pecking order, too.

Part of this belief is practical: A spear does more damage than a crude stone dagger, and so the spear is considered a "greater warrior" than the dagger. Part of the belief is spiritual; certain weapons are believed to be better-attuned to the spirits, and thus are superior weapons.

Among the natives the Nahuatla obsidian-edged sword is considered the "chief" of weapons, with the widely-used atlatl, or spear-thrower, as the well-respected "shaman." Beyond that, in descending order of worth, we have the large, two-handed club favored by the strongest natives; the hand-thrown spear; the stone axe used by most native warriors; the primitive short-bow used by nearly every tribe for both warfare and hunting; the solid wood club; the rock hammer, a single-handed club; the scalpel-sharp Nahuatla obsidian knife, more practical as a tool than a weapon; and, finally the relatively rare boomerang.

The blowgun, a weapon in use by all the tribes but especially common among the feared Urali thugs, is the "outcast," having no place in this hierarchy—the darts alone are far too weak to be a weapon, but when coated

with poison they become an instrument of death far too powerful for use under all but the most dire of circumstances.

The armor and shields of the Valley likewise followed a pecking order. Shields made from Stegosaurus plates are the "chief" form of protection. Armor and shields made of leather outrank those made from tree bark, but either material offers greater protection than cloth.

With the advent of modern-day men to the Valley of Eodon, the natives' weaponry has been challenged by the products of twentieth-century science. The high-powered hunting rifle was the most powerful weapon in the entire valley, bar none. Even the crude but serviceable muskets and grenades I fashioned from indigenous materials were far superior to anything the natives had to offer. The hefty fireman's axe from my displaced laboratory proved to be a good but not outstanding weapon; its primary forte was in the felling of the largest and toughest trees in the valley, a challenge to which no native tool could rise. Likewise, the Avatar's steel Bowie knife was only slightly superior to the natives' razor-sharp stone knives.

Totems and Offerings

The shamans of the Valley of Eodon use totem and offerings in combination in order to effect their "magic."

Their totems, each representing a nature spirit, include a human skull, a gorilla skull, and a jaguar skull. The human skull is the totem of the spirit named Hулuzz, the spirit of knowledge and vision. The gorilla skull is the totem of Aphazz, the spirit of emotions and strength. The last totem, the skull of a jaguar, represents Motazz, whom the natives believe governs the field of battle.

Their offerings, cast to the wind during their rituals, include: Theobroma cacao, known to the natives as chocolatl; Banisteriopsis caapi, used by the natives (who call it pinde) to produce visions and gain wisdom; and Virola calophylla, a potent snuff that the natives call yopo.

Each totem is used with each offering, for a total of nine possible combinations, each representing a "magical spell."

The Magic of Heluzz—

Spirit of Knowledge and Vision

Human Skull with Chocolatl: This combination produces a moderate light for a period of several minutes. The light is on par with that produced by torches, so this spell is not especially useful. How exactly the light is produced remains a mystery, however.

Human Skull with Pinde: The natives believe that during this spell the shaman leaves his body and becomes a spirit-eagle, looking down on the world from high above. Regardless of superstition, I have personally witnessed shamans under the influence of this spell demonstrating impressive knowledge of their surroundings, knowledge that cannot be attributed solely to memory or experience.

Human Skull with Yopo: When a shaman casts this spell, he believes himself able to sense hostile intent in those around him. Certainly this "sense" is merely the result of autohypnotically enhanced knowledge of human psychology and the local fauna, but one cannot argue with the results.

The Magic of Aphazz—

Spirit of Emotion and Strength

Gorilla Skull with Chocolatl: This spell actually seems to mesmerize the caster's enemies, temporarily lulling them into turning on their comrades.

Gorilla Skull with Pinde: Shamans use this spell to alleviate the effects of wounds and illness of all his comrades. Whether the effects are merely psychosomatic or the pinde has an actual effect on the healing process has yet to be determined.

Gorilla Skull with Yopo: This is perhaps the most doubtful spell of all. The natives claim this spell protects the shaman and all his comrades from harm. This is clearly untrue—I have seen people under such "protection" take grievous wounds. To give the shamans the benefit of the doubt, perhaps the spell simply does not work to the degree that the natives seem to believe it does.

The Magic of Motazz—

Spirit of Battle

Jaguar Skull with Chocolatl: With this offering, the shaman invokes Motazz to summon a creature into the battle. This spell, and indeed all those associated with

Motazz, only works when locked in mortal combat, so say all the shamans I've spoken to. Personally, I believe that it is simply the scent of the aromatic chocolatl and the noise of conflict that summons the creatures, but there is little doubt that friendly animals do appear.

Jaguar Skull with Pinde: This spell is used by the shaman to "curse" his opponents. Much like the curses of the Caribbean voodoo doctors, the effects of this spell most likely stem from the fears of the victim rather than the "power" of the caster.

Jaguar Skull with Yopo: This spell has the complementary effect of the "curse"—it heightens morale among the shaman's comrades, whipping them into an unstoppable battle frenzy.

Wild Basin Expedition Returns

by Jimmy Malone

When entrepreneur Richard Garriott gave the crew of the new *Savage Empire* movie a present—a vacation safari in the exotic Hill Country where much of the movie's location work was filmed—he didn't realize that he was nearly sending them into oblivion.

The expedition set out from the Austin, TX headquarters of Garriott's entertainment empire on June 1, shortly after principal photography on the movie was completed. Radio reports from the safari were cheerful and routine for the next two weeks. But the report of June 15 was the last from the expedition.

For the next 30 days, Garriott and his executive staff kept a constant vigil on their radio equipment, chewed their knuckles, and badgered the government to launch a rescue expedition into the Wild Basin region of the Hill Country.

That government mission, accompanied by Richard Garriott, was launched on June 27. It quickly found the expedition's base camp—its tents still standing, the team's equipment still in working condition—but failed after more than two weeks to turn up any further sign of the expedition.

Then, on July 16, the members of the rescue mission woke up to find the Wild Basin explorers in the rescuers' camp—rummaging through the stores of food, rigging and impromptu volleyball court out of rope and tarpaulins, and making so much noise that the government rescuers couldn't sleep.

"It was pretty amazing," says erstwhile rescuer Garriott. "Their clothes were the worse for wear, and they were complaining a lot about the lack of air conditioning in our camp, but otherwise they were fine. Some of them were doing Three Stooges schtick, and the rest seemed to be arguing about which of the *Star Wars* movies was the best."

Trek Into the Wilderness

Stephen Beeman, 21, safari leader and director of the *Savage Empire* movie, explains: "We'd been in the wild for a couple of weeks, and I think the rest of the crew was getting bored. I'd be doing some work in my tent, and every two minutes one of them would pop in to see what I was doing—like, 'Party in my tent!' I got aggravated and suggested that we go on a hike, to bleed off some of that caffeine energy and scout out locations for the 'Making of *The Savage Empire*' documentary, which I'm also directing. So we took off. After that—well, it's all Aaron's fault."

Aaron Allston, 29, screenwriter on the *Savage Empire* film, readily agrees with Beeman's assessment. "My sense of direction is 100% accurate, but only 50% of the time," he admits. "I was in the other 50% that day. We were wandering around, having a good old time, except that Keith [Berdak] kept getting snake-bit, and we kept running into these huge scorpions the size of, well, scorpions. But when we decided to head back to camp, it wasn't there, I'd swear somebody moved it."

"So we started ranging all over the place looking for it. Johann would climb up a tree and look all around, then gnash his teeth and shout 'We're going to get back to camp on time and under budget, or I'm going to have somebody's head!' But we never made it back."

'Johann' is Jeffrey David Johannigman, 29, the producer of *The Savage Empire* and safari second-in-command. A burly, blond-haired, blue-eyed Aryan, he is well on his way to becoming one of Hollywood's most agitated producers. He remembers the events of the hike with no affection. "This hike wasn't on my schedule, and I knew it wasn't going to work out. I could feel the schedule slide with every step we took, but sometimes there's no controlling these writers and artists. I gave them enough rope and they hung all of us. Next

time I want to see people running around in the forest, I'll put an Errol Flynn movie in the VCR."

Meeting the Natives

Dan Bourbonnais, 36, is *The Savage Empire's* chief set-design supervisor and a storyboard artist for the film. A skilled technician with extensive backgrounds in both art and construction, he appointed himself photographer for the expedition...and secretly hoped that the expedition might encounter the semi-legendary natives of the Hill Country. He got more than he bargained for.

"We were lost," he explains laconically. "Wandering around like idiots. Aaron kept saying, 'Wait! That looks familiar,' and led us off in a new wrong direction. Johann was stomping, shouting 'This is fine, fine, just fine!' and consulting the company handbook to figure out what to do. Steve was walking along behind Johann and making fun of him.

"So we round a turn in this dry creekbed, and there they are, the natives. About a dozen of them, males and females. They had a fire going, with a crude grate on top, and some sort of meat on that, they were charring it black. I started taking pictures, and they looked up, and...waved. Not hostile at all."

"Manda Dee, 23, is the pixie-like set designer on *The Savage Empire* and Bourbonnais' partner in set design. "We got to know the natives pretty well," she admits. "They're a wild bunch. They ride around in the backs of these huge, rusty metal chariots, and whoop it up. They drink this sort of weak fermented brew that really gives you a headache. The first natives we came across were having a ritual cookout.

"I got to help them with a religious ceremony, where they built this runaway with stones on an open plain—like the Nazca lines, you know; they wanted to entice their Sky Gods to visit. So we laid out this 900'-long runway in the shape of an armadillo." She considers a minute, then admits, "Well, actually, it was *my* idea, but they helped."

Jason Templeman, 23, is a script consultant to the film, and choreographer of the movie's extensive combat scenes; for the expedition, he was also pressed into service as team cook. "Those natives had some strange customs," he said. "They'd go swimming at different

places in the Hill Country. Once place, they'd go in naked. Another place, they had to wear a little scrap of clothing. I never could figure out why one place was different from the other, and they couldn't exactly tell me. So I'd just stand there, and stare, and stare, trying to figure out the difference, and that's when Keith Berdak would sneak up on me and drop a snake down my pants."

Surviving in the Wild

Keith Berdak, 35, is chief casting director for *The Savage Empire*. "Most of the faces in the movie are my choices," he admits, "except my partner Glen got to cast the 'babes.' Lucky stiff." Berdak admits that he wasn't originally keen on the idea of the expedition: "I have a problem with snake venom, I don't know why, but my instructor in anthropology and archaeology—Karen E. Bell, Ph.D.—persuaded me that I ought to go anyway. She was a technical consultant on *The Savage Empire*, too. I'm grateful to her for it. I got to see so many things, especially animal species, that I'd never be able to see in civilization."

Suddenly, he stoops, snatches something up off the ground, and waves a wriggling snake in the face of the startled correspondent. "Like this. Interesting snake. Looks a lot like an Australian tiger snake, which is a really deadly creature, but this one seems friendly enough. Ouch! Little beggar bit me."

Though Berdak was unable to complete his interview, camp medics report that he should recover fully.

Though the animal life may have been dangerous, starvation in the wild wasn't a hazard. The Fat Man—pseudonym for *The Savage Empire's* musical composer, a large bald man with a fuming cigar, an aggressive manner, and a curiously undersized head—explains it this way: "The food was the best part of this expedition. Those natives, they'll kill you with the stuff. Every day, cookouts, roasts, barbecues, I loved it."

He interrupts his explanation with a massive belch, and he smiles and tilts his head, savoring the musical purity of its tone. "Anyway, the food's the only reason I'd ever consider going on another of these things. Food and women. Only a woman could drive a man to take a safari to a godforsaken place like this. Yachting, that's my idea of exercise." He turns back to his previous

conversation: "So I says to the witch doctor, 'All I wanted was a small head—' 'Wait, I told it wrong...' "It was a strange, strange place," admits Denis Schubert, 33, artist of *The Savage Empire's* promotional poster. "There isn't a lot of good wood available here, so the natives built their tall, cliff-like homes out of these panes of glass."

"I thought it was great," says Marc Schaeffgen, 20, the movie's sound-effects specialist. "I'm ready to go on another safari. Not much went wrong, except us getting lost, and me arguing with the Fat Man about music all the time—I'm a guitarist—but sometimes I'd cook then he'd be nice to me, and then there was Steve Beeman always wandering around, going 'Sleep? Sleep for the weak! Onward!' Those parts weren't fun. Maybe those guys will stay home for the next safari."

The Way Back Home

"After we'd been there a few weeks," says Philip Brogden, 30, the film's dialogue consultant, "we heard from the natives that there was another party of explorers out there."

Bob Quinlan, 29, Beeman's executive assistant, disagrees: "That's not quite right. We heard from the natives that there were more explorers the natives wanted to invite to a party."

"Right, right," Brogden continues. "Beeman figures that this is our chance to get out—Johann's sort of 'gone native' by this time, so Beeman takes over completely, cracks the whip, threatens to fire everybody. The Fat Man *did* fire everybody, but fortunately we don't work for him...Anyway, Beeman got us all lost again."

Glen Johnson, Keith Berdak's casting co-director, continues: "It was a *real* shame, too. I'd like to cast some of those natives in our next picture. There were some real lookers—in the company's technical jargon, 'babes'—in the tribe."

Jeff Dee, a storyboard artist for the film and Manda Dee's husband, adds: "I was busy razzing Beeman. His parents were originally from this region, you know. He doesn't like admitting it because then he can't account for why he couldn't find his way back out. So I notice that John [Watson] is carefully mapping out every step we're taking, checking the sun, looking at a compass, all this sort of stuff. And I see that our base

camp and all our movements on the safari are on the map."

"Jeff asks me, 'How long have you been keeping that?' 'breaks in John Watson, who was responsible for some of the maps and other graphics appearing in *The Savage Empire* movie. "I say, 'Ever since we left home. I figured we could use it to illustrate our safari when we get home again.' Anyway, everybody comes over to look, and there is this noise like shouting, and I guess I black out about that time. When I wake up, I'm covered in bruises, especially on my head, and they're carrying me into our old base camp...and that's just where the rescue expedition is set up."

So the lost expedition is found, with all fifteen members alive and (except for the poisoned Berdak) physically well. By the time this account sees print, all members of the Wild Basin Expedition will be safe at home, working on their next movie...and considering the advisability their next safari.

Seven Cities of Gold™

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Installing the Game on a Hard Drive

1. Insert the CD in your CD-ROM drive, type **D:** (or your CD-ROM letter) and press **Enter**.
2. Change directory to 7CITIES. Type **CD\7CITIES** and press **Enter**.
3. Type **INSTALL** and press **Enter**.
4. Once the install program loads, the installation screen will appear.

There are a number of options listed at the bottom of the installation screen that are available prior to installation. Press the appropriate **FUNCTION** key to use an option:

F1 Help: This gives you EA's customer support phone number .

F2 Visit DOS: Go to a DOS shell. Type **EXIT** to return to the install program.

F3 System Summary: This will give you a hardware summary of your computer.

F9 Exit: Quit the installation program and return to DOS.

If you do not want to use any of the **FUNCTION** key options, you can begin to install 7COG onto your hard drive. The installation menu lists these three options:

Install Seven Cities of Gold – Commemorative Edition

Configure Sound

Exit

To leave the installation program and return to the DOS screen, highlight "Exit" and press **Enter**. To begin installation, highlight "Install Seven Cities of Gold – Commemorative Edition" and press **Enter**. You'll then be asked what subdirectory

you'd like to install the game to, and you'll see a list of available hard drive partitions. Highlight the drive you want and press **Enter**.

4. Next, enter a name for the 7COG subdirectory. The default name is 7CITIES. If you accept this name, press **Enter** to begin installing the game. If you want to rename the subdirectory, press backspace over the default name and type in a name of your choice. Remember to use a valid 8-character DOS name for the subdirectory.
5. Once the installation is complete, you can set up the game to run properly with your sound board.

Highlight CONFIGURE SOUND and press **Enter**. If you have the SET BLASTER variable in your AUTOEXEC.BAT file, the installation will detect this and prompt you that it has been found. You can then run a test to verify that the game will run properly with the current sound settings. If you hear the digitized sound effect when you run the test, then everything will be fine when you play Seven Cities.

If the SET BLASTER variable isn't set in your AUTOEXEC.BAT file, you will have to manually select and configure the game for your sound card, using the following steps:

- Highlight the sound board installed in your computer and press **Enter**.
- Enter the Digital Audio Port that your sound card is set to and press **Enter**. In most cases, this will be 220, the default setting. If you have changed this setting, please highlight and select the correct port address and press **Enter**.
- Enter the IRQ number that your sound card is set to and press **Enter**. Please highlight and select IRQ 5 for Sound Blaster and press **Enter**.
- Finally, you can test the settings you have selected. Press **Y** to execute the sound test. If you hear a digitized sound effect, then everything is set up correctly and the game will run properly with your sound card. If there is a problem, a message will be displayed. You should then re-enter the port and IRQ settings and run the test again. Refer to the manual that came with your sound card for assistance.

- 6) Once you have completed installation and sound configuration, the program will return to the main menu. You can now quit the installation and start a game. See the Starting A Game section of this manual (immediately following) for information.

Starting A Game

To run the game:

1. Type **C:** and press **Enter**. (This assumes that your hard drive letter is C. If it isn't, type the appropriate letter and press **Enter**.)
2. Type **CD\7CITIES** and press **Enter**. If you gave the subdirectory a name other than 7CITIES, type the directory name after **CD** and press **Enter**.
3. Type **7COG** and then press **Enter** to start playing Seven Cities of Gold.

Selecting Options

In most cases, you select Options as described below. Any exceptions to this are noted. (NOTE: There is no mouse support in Seven Cities of Gold.)

With the Keyboard

The **Ctrl** key is the main action key in the game.

Use the up/down arrow keys, or 8 and 2 keys on the numeric key pad to highlight Options. To select a highlighted option, press **Ctrl**.

Press **Alt** to execute the last Exploration option you selected. For instance, if you recently highlighted and selected See Map, press **Alt** to See Map again.

With the Joystick

Press the joystick up/down to highlight the Options. To select a highlighted Option, press joystick button 1.

Press joystick button 2 to execute the last Exploration option you selected. For instance, if you recently highlighted and selected See Map, press joystick button 2 to See Map again.

Getting Started: The Main Menu

There are five options from which to choose at the beginning of the game.

Start New Historical Game

Begins the historical Seven Cities scenario. This scenario takes place in North & South America.

Start New Random World Game

Sets up and begins a random game. Your computer will generate land masses, populate them with Natives, and stock them with Resources.

Restore Saved Game

Restarts a previously saved game. This option appears only if you have a saved game.

Use Joystick

Switch from keyboard controls to joystick controls. After you select this option, press button 1 on your joystick to activate it, or press **Esc** to cancel the option.

Use Keyboard

Toggle keyboard controls on/off. This selection will appear only if you select Use Joystick.

Quit to DOS

Return to the DOS screen and quit playing Seven Cities of Gold.

Object of the Game

The object of Seven Cities of Gold is to explore a New World, find and gather resources, trade with Native peoples, and establish Missions, Forts, and Settlements to spread the rule of the King & Queen you serve.

Game Levels

There are 3 difficulty levels in Seven Cities of Gold: Novice, Journeyman, and Expert. The Level Selection requester will appear immediately after you select the kind of game you want, Historical or Random. Select the Game Level you want at this time.

Game Level determines the amount of gold you have at the beginning of the game:

Novice	2500 gold
Journeyman	2000 gold
Expert	1500 gold

You need gold to buy and equip your ships at the beginning. The less gold you begin with, the more challenging it is to successfully begin the game. See the Harbor Master section of this manual for more information.

Winning The Game

To win Seven Cities of Gold, you must establish the following Settlements in the New World:

- 1 Colony
- 1 Mission
- 3 Forts

You have 10 voyages to establish these settlements. On your return visits to the Royal Court, you will be granted promotions based on your progress. If you establish the required settlements within the allotted time, you will be appointed Viceroy of the New World and are free to continue your explorations. If you do not meet the victory conditions within 10 voyages, you can continue to explore the New World for as long as you wish, but without royal patronage. You will no longer be granted audiences with the King & Queen and no longer be awarded promotions.

You can continue to explore the New World even after you've won — there is likely to be a lot of territory left to explore after you've made 10 voyages and established the required settlements.

The Game Options Menu

Press **Esc** to call up the Game Options Menu. You can use this menu while in Spain, at sea, or exploring the New World.

Use Joystick

Toggle joystick controls on/off.

Use Keyboard

Toggle keyboard controls on/off. This selection will appear only if you select Use Joystick.

Save Game

Save the current game. See the Saved Games section of this manual for more information.

Main Menu

Go to the Main Menu. A requester box offering the options Cancel or Main Menu will appear. Select cancel to leave the Game Options Menu, or select Main Menu if you are sure you want to go to the Main Menu. Note: Going to the Main Menu during gameplay will quit the current game *without* saving. Consider whether you want to Save your current game before going to the Main Menu.

Cancel

Leave the Game Options Menu and continue playing.

Saved Games

You can save up to five games in Seven Cities of Gold

Saving A Game

1. Press **Esc** to call up the Game Options Menu. Highlight and select Save Game.
2. Highlight & select the slot in which you want to save the game. (Remember, there are 5 Saved Game slots.)
3. When the name requester box appears, type in a name for the game you are saving. Default names for saved games are Game 1 through Game 5. If you are satisfied with these names, press **Enter** to save the game and return to gameplay. If you want to name the saved game something else, press **Back Space** until you have erased the default name, enter the name you want, and press **Enter**.

Loading A Saved Game

1. If you are loading a Saved Game immediately after Seven Cities of Gold starts, highlight and select Restore Saved Game from the Main Menu. Then highlight and select the game you want to load.
2. If you want to load a Saved Game while another game is in progress, press **Esc** to call up the Game Options Menu. Highlight and select Main Menu, and when the requester box appears, highlight and select Main Menu again. (Note: If you do not save a game in progress before going to the Main Menu, that game will be lost.) Select Restore Saved Game from the Main Menu; then highlight and select the game you want to load.
3. Note: If you have only one Saved Game, it will automatically load if you select Restore Saved Game.

In Spain Movement

Walking

Keyboard

When you're using the Keyboard, the Arrow Keys control where you walk. To walk faster, press the Arrow Keys and **Alt** at the same time.

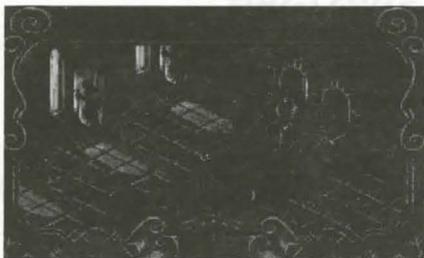
Joystick

Push the joystick in the direction you want to go. Press joystick button 2 at the same time to walk faster.

Opening Doors

To open a door, walk into it.

The King & Queen



THE KING AND QUEEN

Your voyage of discovery begins at the Spanish court. First, see the King & Queen. They will give you your general orders and ask your name. Press **Ctrl** to scroll through the King's message. When the name requester box appears, type in your name or the name of your adventurous sea captain, and then press **Enter**.

After you select a name, you will leave the royal presence and begin provisioning your expedition. (Note that you will not be granted another royal audience until you've made a voyage to the New World.)

The King & Queen are kept informed on the course of your expedition in the New World. If your progress has been especially great, they will bestow promotions upon you during audiences. These promotions are honorary titles, adding to your prestige but not to your wealth.

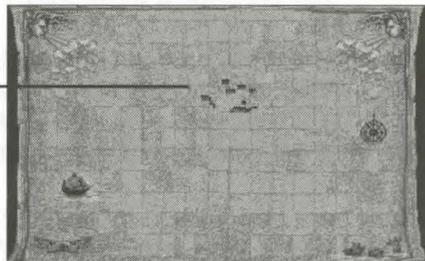
The Commissioner

Next, go see the Commissioner. He is the record keeper of your expedition. There are several options to choose from in his office :

Return to Harbor: Leave the Commissioner's office.

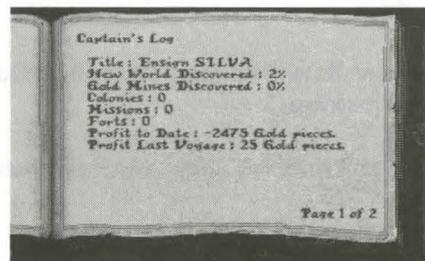
View New World: Look at the map of your discoveries in the New World. Before your first voyage, the map will be blank. Press **Ctrl** to leave this map.

*New World
Lands
Discovered*



CAPTAIN'S MAP

View Log Book: Look at a written record of your voyages, called the Captain's Log.



LOG BOOK

The first page of the Captain's Log contains an overall record of your journeys that includes:

Title: Your current rank and name, such as Captain Smith.

New World Discovered: The amount of the land mass of the New World you've discovered plus the ocean surface you've explored, given as a percentage.

Gold Mines Discovered: The number of gold mines you've discovered in the New World, given as a percentage.

Colonies: The number of Colonies you've established.

Missions: The number of Missions you've founded.

Forts: The number of Forts you've built.

Profit To Date: The total profits earned by all your expeditions, given in gold pieces. If you haven't earned more gold than you've spent, this will be given as a negative number.

Profit Last Voyage: The total profits earned on your last expedition, given in gold pieces. If you didn't earn more gold than you spent, this will be given as a negative number.

Each subsequent page in the Captain's Log gives information about a specific voyage. This information includes:

New World Discovered: The total land mass of the New World discovered during a voyage, given as a percentage.

Voyage Profit: The profit turned by a voyage, given in gold pieces.

Ships Sunk: The number of ships lost on your last voyage.

Men Lost: The number of Men lost on your last voyage from Native attacks, starvation, Ships lost, etc.

Forts, Colonies, Missions Established: The number of each of these you've established in the New World.

The Harbor Master

The Harbor Master is the man to see for Ships, Men, and Equipment; the first of three Provision menus will automatically appear when you walk up to the Master himself. The amount of gold you'll have to spend depends on the Game Level you chose.

There are three Provision Menus: Ships, Men, and Equipment. To page through them, highlight the category at the top of the screen and press the Left or Right Arrow Key or push the Joystick left/right to move or browse through them.

To buy something, highlight it and then press the left arrow key, or press the joystick left. If you change your mind, use the Right Arrow key or move the joystick right to take it out of your inventory. When buying, stock up on Food (or you'll starve) and Equipment (or you'll have nothing to trade with the Native Chiefs).

Keep an eye on the Ship Record in the upper left of the screen. This will tell you how full your ships are, how much gold you have left, and how many days of food you have.

Ships

Buy as many ships as you think you'll need for your Expedition. The more ships you have, the more Men & Equipment you be able to transport to the New World, and the more riches you'll be able to bring back to Europe.

Men



MEN

You need Men both to explore the New World and establish the settlements required to win the game. There are three types of Men available at the Harbor Master's: Explorers, Soldiers, and Clergy. Each type has their own purpose in the New World.

- **Explorers**

You can't explore effectively without Explorers. You can't map what you explore, nor can you even set sail for the New World, without at least one Explorer among your men.

- **Soldiers**

To build Forts, or bigger settlements, in the New World, you have to station Soldiers in the settlements you establish. They also give an edge in combat.

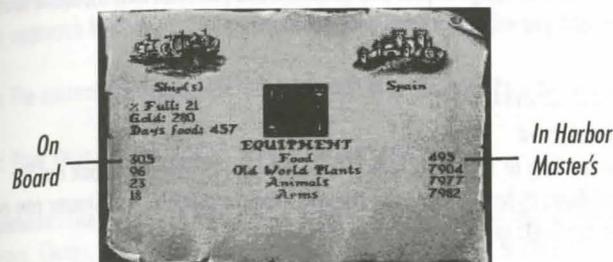
- **Clergy**

You need to put Clergy in New World settlements in order for the settlements to become Missions.

- **Horses**

Horses are not Men, of course, but they are almost as important, and you buy them at the same time you sign on Explorers, Soldiers, and Clergy. Horses can carry a great deal more equipment than Men can. And Men riding Horses consume food at a slower rate than Men on foot do.

Equipment



EQUIPMENT

- **Food**

The most necessary item is Food. Without Food, your men will starve and your expedition will fail. And you not only need to buy enough food to supply your Men while at sea, you must also adequately provision any settlements you establish. Expeditions that explore the lands of the New World can often find local Food during their explorations, but you should make sure they have enough food from your ship's stores as well. Food can also be used as trade goods.

- **Old World Plants**

Old World Plants are used to trade with Natives in the New World. It does not take the place of Food. If your Men have no Food but are well stocked with New World Plants, they'll still starve.

- **Animals**

Like Old World Plants, Animals are also used to trade with New World Natives and cannot be used as Food.

- **Arms**

If you are attacked by Natives, you'll need Arms to protect yourself. Arms can also be traded with Natives.

To leave the Harbor Master, press **Ctrl**.

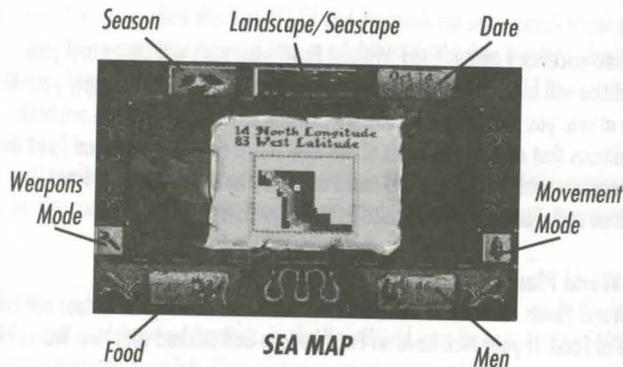
Shove Off

Once you're stocked up, go to your ship (walk left and you can't miss it), move toward the ladder, and you will embark and head out to sea.

Under Sail Movement

Use the Arrow Keys or Joystick to control the movement of your ship. Look out for Storms and Reefs as both will severely damage even the stoutest ship. Storms can occur anywhere, but Reefs are always near the shore.

The Overhead View



The Overhead View will always be on screen unless you call up the Sea Exploration Options Screen (see below). No matter how many ships you have, only one ship will appear on the Overhead Map. The Overhead View provides a great deal of vital information:

Season: The current season appears in a box in the upper left of the screen. The box changes as the seasons do: Snowflakes indicate winter, falling leaves indicate autumn, a field of flowers means spring, and a sunny pasture means summer.

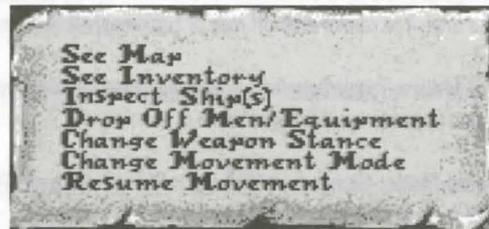
Landscape: The type of terrain you're in appears in a box at the top center of the screen. While you are at sea, this box will display only water, of course. But it will change as you approach land.

Date: The current date appears in the upper right of the screen.

Food: Your Days of Food appears in the lower left of the screen.

Manpower: The number of Men in your expedition is in the lower right of the screen. Explorers, Clergy, and Soldiers are combined in the upper number in this box; the number of Natives appears as the lower number.

The Sea Exploration Options Screen



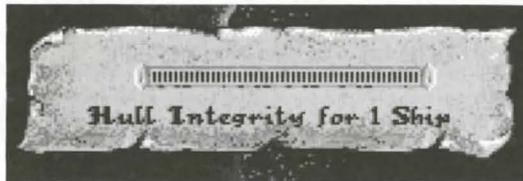
SEA EXPLORATION OPTIONS SCREEN

There are several options available while sailing. Press **Ctrl** to call up the Sailing Options screen. To use an Option, highlight it and press **Ctrl** or joystick button 1. To recall the last Option you used, press **Alt** or joystick button 2. To leave an option, press **Ctrl** or joystick button 2 again, or move your ship:

See Map: Look at the map of your explorations. This is a map of nearby areas, not an all-inclusive New World map.

See Inventory: Look at your current supply levels and number of Men.

Inspect Ship: Check the integrity of your ship's hull. Integrity is measured by a line of "ticks"—50 ticks indicates a perfect hull. As a ship's hull is damaged by storms and reefs, its integrity and its number of ticks decreases. When all a ship's ticks are gone, the ship will sink. You have 1 line of ticks for every ship in your fleet.



HULL INTEGRITY SCREEN

Drop Off Men/Equipment: Drop off some of your Men & Equipment when you reach land to explore the area. You cannot drop off Men or Equipment while at sea.

Change Weapon Stance: Toggle between weapons equipped and weapons unequipped. You don't need to use this option while at sea.

Change Movement Mode: Change from Walking to Riding Horseback. There must be at least one Horse for every Man in the expedition. Usable only on land.

Resume Movement: Leave the Options Screen and begin exploring again.

The New World

Land Exploration Landfall

To begin to explore the New World, you need to make landfall. When you land you want to explore, sail right up to it and press **Ctrl** to call up the Options Screen.

Overhead View

The Overhead View in the New World is identical to the Overhead View at sea. You see the short range surroundings of your Expedition in the middle of the screen; the Season, Landscape, and Date at the top of the screen; and your Days of food and Manpower at the bottom of the screen.

Overland Speed

Once you are ashore, your movement rate will be affected by the local terrain. You'll walk quickest over open plains, desert or beach; less quickly through forests/jungles; and most slowly when you're crossing mountains.

The Land Exploration Options Screen

See Map: Bring up the map of the immediate vicinity. Areas you have not explored will appear grayish-brown on the map. See the Mapping The New World section of this manual for more information.

See Inventory: Bring up an inventory of your Expedition's current personnel and equipment.

Drop Off Men/Equipment: Leave Men and Equipment to start a settlement, or leave Equipment only in a Cache. See the Settlements and Caches sections of this manual for more information.

Change Weapon Stance: Take out swords, or put them away. The Weapon Stance Indicator is on lower left side of the screen. When the indicator shows a sword, the Expedition has its weapons at the ready; when the indicator shows a sheathed sword, weapons are put away.

Change Movement Mode: Change back and forth from travel on foot to travel on horseback. The Movement Mode Indicator is on the lower right side of the screen. When the indicator shows a rider on horseback, the Expedition is riding; when it shows a standing man, the Expedition is on foot.

Resume Movement: Leave the Land Exploration Menu.

When you reach land in the New World, press **Ctrl** to call up the Exploration Menu. Then highlight and select Drop Off Men/Equipment to call up the Expedition Menus. Now you can begin to set up an Expedition. (To leave the Exploration Menus at any time, press **Ctrl** again.)

1. The Men Menu will appear first. Highlight the type of Men you want in your Expedition. Men aboard ship appear on the right side of the Menu, and Men in your Expedition appear on the left side.

Use the left/right arrow keys to transfer Men back and forth if you're using keyboard controls; if you're using a joystick, press the joystick left/right to transfer men. You also transfer Horses from this Menu, the same way you transfer men.

Highlight Men and press the right arrow key, or press the joystick right, to go to the Equipment Menu.

2. From the Equipment Menu, transfer Food, Old World Plants, Animals, and Arms from aboard ship to your Expedition the same way you transferred men. Make sure you take plenty of Food, especially if you plan to establish any settlements.

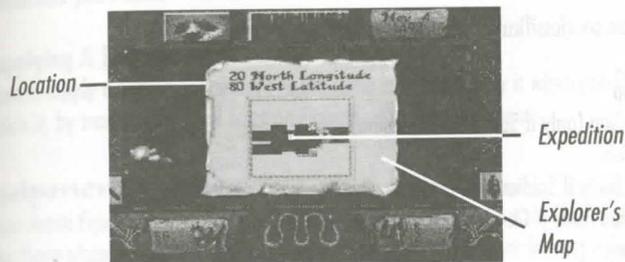
Keep an eye on "% Full" indicator in the upper left side of the screen. This shows how full your expedition is. An expedition is completely full and can carry nothing more when % Full reaches 100.

3. There is also a New World Items Menu among the Expedition Menus. You will not need to use the New World Items Menu to set up an Expedition.

If you plan to start a settlement, be sure to keep an eye on the Ship Record in the upper right and Party Record in the upper left to make sure everyone has enough Food. And remember, including Horses in your expedition can increase its carry capacity and overland speed.

After you've set out on land, keep an eye on your Days' supply of Food by the Food icon in the lower left hand side of the screen. If you run out of Food, your Men will immediately begin to starve.

Mapping



DETAIL MAP

Your Expedition will map the area they explore *if* there is at least one Explorer along. The Map will show all the different type of terrain and bodies of water you encounter, as well as your current latitude and longitude. It will also show Settlements, Native Villages, and other important locations. Each type of location will be marked by a specific icon:

Ships	Red and Gold flag with anchor
Settlements & Caches	Red and Gold flag
Native Villages	Red dot
Gold Mines	Red X

An Expedition will appear on the map as a flashing blue dot in a square white border.

NOTE: If, for some reason, all the Explorers in an expedition die, not only will you not be able to map more territory, you will not be able to see the territory previously mapped.

Settlements

There are several different kinds of settlement. The nature of a Settlement is determined by how many and what kind of Men you put there. Soldiers build Forts and Clergy found Missions; large numbers of any kind of Men turn a Fort or Mission into a Colony. You usually need some Explorers to round out most settlements.

There are six classifications of settlement:

- Camp
- Garrison (only if Soldiers are present)
- Station
- Fort (only if Soldiers are present)
- Mission (only if Clergy are present)
- Colony

To create a Settlement:

1. First create an Expedition (see previous section).
2. Include the sort of Men you want in the Expedition (depending on the sort of Settlement you want to start) and take a long a lot of Food.
3. Find a likely spot for the Settlement. The location of the Settlement is up to you. Things you might consider when selecting a Settlement site are proximity to the coast or the nearness of Gold Mines.
4. Press **Ctrl** to call up the Land Exploration Menu. Select Drop Off Men/Equipment.
5. When the Men and Equipment Menus appear, you can begin to transfer them to the Settlement you have created. Transfer Men & Equipment to the Settlement the same way you transfer them to and from Ships.

6. The upper right-hand side of the screen will show you the type of Settlement you've created and the Days of Food you've given it. Again, make sure you leave plenty of Food; settlers won't go out to forage the way Expeditions do.
7. Most importantly, make a careful note of the latitude and longitude of every settlement you create. It makes them much easier to find on return voyages.

Resupplying A Settlement

You can resupply a Settlement with Food the same way you supply it when you first establish it, by transferring Food from an Expedition to the Settlement.

Equipment Caches

You can leave Equipment behind in a Cache during your explorations on land and it will still be there when you return. There are several possible reasons for leaving a Cache, such as leaving behind less valuable items to pick up more valuable items, to establish landmarks in the wilderness, etc.

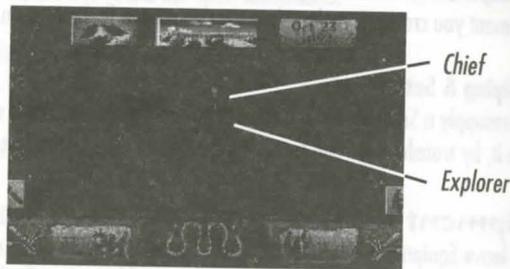
To create a Cache:

1. Press **Ctrl** to call up the Exploration Menu, highlight Drop Off Men/Equipment, and press **Ctrl** again. The Men and Equipment Menus will appear.
2. Transfer items from the Expedition to the cache in the usual way. If you are leaving Food, keep an eye on your Expedition's food indicator to make sure you don't leave too much. Caches don't have a maximum capacity, so you can leave as much in a Cache as you want to. (*Note: If you leave Men, you will create a Settlement and not a Cache.*)
3. To retrieve items from a Cache, walk or ride up to it. When the Men and Equipment Menus appear, transfer the items from the Cache back to your Expedition in the usual way.
4. On the Overhead View, Caches appear as rounded mounds of earth. On the map, they appear as flag Icons. When a Cache has been emptied, it will no longer appear on the Overhead View or Map.

Exploration & Trading

Native Villages

There are several different kinds of Native villages: Hunting, Farming, Warrior, Advanced, and Cultured. Each type of village has a distinct appearance on the map.



NATIVE VILLAGE

Walk into a village to make contact with its inhabitants. As soon as possible, find the village Chief (he has a spear and stands near the center of the settlement) and try to avoid bumping into anyone else since this sometimes makes them hostile.

Some settlements react in a hostile manner from the moment you enter: The inhabitants will attack you on sight. The flash of clashing weapons will tell you combat has begun. Other natives are curious and will gather around you to gawk. And some are actually friendly. But even friendly Natives don't like it if you bump into them repeatedly; it can even make them hostile. If you bump into them with your weapons drawn, they will become hostile even more quickly.

Native Encounter Menu

When you are in a Native Village, press **Ctrl** or joystick button 1 to call up the Native Encounter Menu. To select an option on this menu, use the up/down Arrow Keys or Joystick to highlight it, and press **Ctrl** or joystick button 1 to select it.

Change Weapon Stance: Toggle between weapons equipped and weapons unequipped. Equip your weapons if you're going to fight. Drawing your weapons after you've entered a Native Village can sometimes antagonize the inhabitants.

Drop Gift: Drop some equipment to distract or placate the hostiles. You can drop 1 of any equipment type you're carrying (1 Animal, 1 Arm, etc.) each time you use this option. So if you had 30 Animals and highlighted Animals when you chose Drop Gift, you'd have 29 left afterwards. An inventory list will appear when you select this option; use the up/down Arrow Keys or Joystick to highlight the type of equipment you want to drop and then press **Ctrl** or the Joystick button 1 to drop it.

Amaze the Natives: Use a scientific trick to amaze the Natives. This will make them scatter (usually).

Cancel: Leave the Native Encounter Menu.

Talking To A Chief

Walk up to the Chief to begin a conversation. Pay attention to the Chief's expression and the description of his attitude. These factors can be important clues about how to approach him.



TALKING TO A CHIEF

If the Chief feels like talking, you'll have several options:

Want Trade: Open Hand Icon. Offer to trade with the Chief. You will typically need to give a Chief gifts before you can Trade with him.

Threaten: Hand With Sword Icon. Try to intimidate the Chief. His reaction can be unpredictable: He may give in, he may threaten you in return, or he may angrily throw

you out of the village. (If a Chief decides to expel you, there is nothing you can do to stop it; you'll find yourself outside his village almost immediately.) If your Threat is successful, you can trade with the Chief.

Give Gift: Hand Holding Objects. Try to get on the Chief's good side by offering him gifts. Then choose what to give him by highlighting an item with the cursor keys or joystick, and press Ctrl or the joystick button 1. The goal is to make him agreeable to Trading. Different Chiefs want different things; something one Chief likes might disgust another. The type of village a Chief controls might give you a hint what to offer him. Experiment to find out what they want. Keep in mind that a Chief might not want to Trade with you no matter what you give him.

Amaze Chief: Hands Holding Fire. Astound, impress, and possibly intimidate the Chief with the wonders of 15th Century science. But keep in mind that some Chiefs are more sophisticated than others and may react angrily if they see through your trickery, or you might just bore them.

Beg: Clapsed Hands. Beg the Chief for help; he may feel sorry for you and offer you Food. Or he may not.

Leaving: Waving Hand. Leave encounter with Chief.

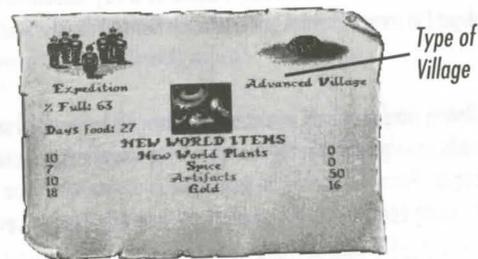
Trading With A Chief

Trading with a Chief is similar to acquiring goods from a Harbor Master. Different Chiefs have different trade goods available, depending on the type of village they control and their villages' relative wealth.

Once a Chief responds positively to a Want Trade command, press **Ctrl** or the Joystick button 1 to go to the Trading menu.

To move between the 3 categories — Men (Natives), Food, and New World Items — in the Chief's inventory, highlight the category and press the left/right Arrow Key or push the Joystick left/right.

To take something, use the Up/Down Arrow Keys or Joystick to highlight it; then Use the Left Arrow key or push the Joystick left to indicate the amount or number of that item you want to acquire. If you change your mind, use the Right Arrow key or move the Joystick right to take it out of your inventory. Note that New World Items — New World Plants, Spice, Artifacts, and Gold — can be very valuable (especially the Gold). Take as much of it as you can carry without stinting on food.



NEW WORLD ITEMS

When you are through trading, press **Ctrl** or the Joystick button 2 to leave the trading menu.

Native Guides

You can also get information from the Natives you have added to your party through Trading. They can give you important information about local points of interest, such as where there are food sources, mines, bison, etc. To get information from a Guide, call up the Exploration option screen by pressing **Ctrl** or the Joystick button 1 and select Talk to Native Guide. He will either say "I see nothing" if there's nothing around, or let you know if you're near or very near something. They can also warn you about places where you shouldn't go.

If you have Native Guides in your party, they will automatically help you forage for food. This will decrease your food consumption.

When you return to Europe with Natives, they will leave your party as soon as you land.

Ambushes

Sometimes you'll run into hostile natives away from settlements who will try to Ambush you. Again, flashing weapons will let you know you're in a fight. You can try to run in these situations, but that is not always possible. If you can't escape, press **Ctrl** or the Joystick button 1 to call up the Native Encounter Menu.

Gold

You can find gold in mines or creeks as well as in Native Villages.

Mines

Sometimes Native Guides will tell you about nearby gold mines, and sometimes you'll have to stumble upon gold mines on your own. They are always associated with mountain ranges. There will usually be some gold in a mine when you find it, and you can set up a mining operation to get more. (However, any mine will eventually run out of gold.)

When you find a mine, the Equipment Requester will come up. To pick up the gold in a mine, highlight Gold on the right side of the screen and transfer it to the Expedition with the left arrow key or by pressing your joystick left.

To work a mine, you must leave Men (Explorers, Soldiers, Clergy, or Native) there. Make sure you leave them plenty of food, too. To transfer Men to a mine, highlight them with the up/down arrow keys or joystick, and transfer them to the mine using the right arrow key or by pressing your joystick right. Mines don't have a maximum capacity for Men or Equipment so you can leave as many there as you want.

Rivers

You can also find gold in rivers. If your Native Guides tell you about "yellow rocks" nearby, they mean gold. When the Gold requester box appears on screen, eureka, you've struck it rich. To pick up this Gold, press the left Arrow key or push the Joystick left.

When you find gold in a certain spot in a river, that's it. You shouldn't post Men to "mine" for more, because they won't find any.

Burial Grounds

Burial Grounds are scattered throughout the New World. Native Guides will always give you strong warnings to stay away from these "Sacred Grounds". And local Natives will get very angry if you disturb nearby Burial Grounds and will thereafter usually attack you on sight. However, the Artifacts that Burial Mounds contain are quite valuable.

When you find a Burial Mound, you'll be asked if you want to examine it, Y/N? Select Y if you do want to examine it, or select N if you want to leave it alone. If you select N, you'll immediately leave the Burial Mound screen.

If you select Y, you can transfer Artifacts from the Burial Mound to your Expedition. Press the left arrow key, or press the joystick left, to pick up Burial Mound Artifacts.

Returning to the Ship

To re-embark, walk your party directly up to your Ship. The Men & Equipment Menus will automatically appear.

Transfer Men & Equipment back on board ship the same way you took them off: Highlight who or what you want to go back on ship and use the right arrow keys or press the joystick right to transfer them from the Expedition to the Ship. You can transfer all Men and Equipment back onboard ship and return to sea, or you can transfer trade goods you've acquired from the Natives from the Expedition

Keep in mind that Horses carry Equipment and Men. You'll need to transfer Equipment onto the ship first, and change your Men's movement mode from horseback to walking, before the Horses can go back on your ships.

At least one Explorer will remain on shore to supervise loading all Equipment and other Men. IT IS IMPORTANT that you don't forget to put him on board, too, after everything else is loaded.

Note About Food Consumption

Food Consumption varies. It is slower when you are on board ship than when you are traveling overland. Terrain and weather can also make it slower or faster.

Back To The Old World

When you return to Spain (sail East and you'll find it almost without trying), you must see the King & Queen first. They will assess your progress, decide if you deserve to be promoted to a higher rank, and give you suggestions about what you should do next.

Your goods are automatically cashed in when you return to Spain, so go see the Harbor Master to buy more stuff for your next voyage.

Problems With The Game

To free up additional memory refer to the Problems with the Game section at the end of this manual for information on creating a DOS boot disk. DOS 6.0 users can alternately set up a multi-boot configuration. Refer to your DOS manual for information.

When creating a DOS boot disk or a multi-boot setup, make sure the following lines appear in your CONFIG.SYS file:

```
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE NOEMS
DOS=HIGH,UMB
```

DOS 6.0 DoubleSpace users should also have the first two lines above, plus:

```
DOS=UMB
DEVICEHIGH=C:\DOS\DBLSPACE.SYS/MOVE
DOS=HIGH
```

Don't forget to include the SET SOUND= and SET BLASTER= lines in your AUTOEXEC.BAT file so you will hear sound while playing Seven Cities of Gold.

SHADOWCASTER™

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INSTALLATION

If you are running a disk cache such as *Smartdrive*, you will need to disable it prior to installing *Shadowcaster* to insure a clean installation. This only affects the installation, *Smartdrive* will work normally during gameplay.

1. Insert CD-ROM into CD-ROM drive.
2. Type the letter of your CD-ROM, a colon, then press **Enter**.
3. Type CD\SHADOW **Enter** then type INSTALL **Enter**.
4. The Main Menu appears:

```
INSTALL SHADOWCASTER
CONFIGURE SOUND
EXIT
```

To select a menu item, use **↑** and **↓** to highlight the option you want. Select Install Shadowcaster.

The highlighted option appears as blue text in a gray box.

Press **Enter** to select a highlighted option.

Other options on the screen:

```
F1  HELP
F2  VISIT DOS (for small tasks)
F3  SYSTEM SUMMARY
F9  TO QUIT
```

5. You must install *Shadowcaster* on a hard drive. The installation program detects which drives have enough free space and lists them. Use **↑** and **↓** or type the letter of the drive on which you want to install Shadowcaster.

*Note: DoubleSpace drives will prompt a warning message. Select **Y** and continue. Shadowcaster has been fully tested with the DoubleSpace disk compression utility that shipped with MS-DOS version 6.0. We cannot guarantee the compatibility of our games with other disk compression utilities.*

6. Press **Enter** to select the default directory, or choose another by typing the directory name and pressing **Enter**. The default directory will be SHADOW, unless there is already a SHADOW directory on your chosen hard drive. In that case, the default will be CASTER.

7. Once the program begins installing files on your hard disk, you may abort installation by pressing any key.
8. When you return to the Main Menu after installation, the CONFIGURE SOUND option is highlighted. Press **Enter** to configure sound. Your options:

SOUND BLASTER PLUS GENERAL MIDI DEVICE (Sound Blaster plays your sound effects and General MIDI plays the music.)
SOUND BLASTER ONLY (Sound Blaster plays both your sound effects and music.)

GENERAL MIDI DEVICE ONLY (General MIDI plays music, and you will have no sound effects.)

NONE (You will have neither sound effects nor music.)

Once the digitized sound configuration information is available, this next screen appears.

```
SHALL I PERFORM A SOUND EFFECTS TEST USING PORT XXX
AND IRQ X, AND DMA CHANNEL X?
```

Press **Y** to hear the sound effects test, press **N** to skip it, or press **Ctrl X** to exit the installation program. If you press **Y**, you will hear a "shimmery" sound effect.

If you chose either option involving General MIDI, you will be presented with screens asking you for the correct port and IRQ for your General MIDI device. Then the following box appears.

```
SHALL I PERFORM A MUSIC TEST USING PORT XXX AND IRQX?
```

Press **Y** to hear the music test, press **N** to return to the Main Menu, or press **Ctrl X** to exit the installation program. If you press **Y**, you will hear a brief fanfare. You are then returned to the Main Screen.

*If you do not hear either the music or sound effect, consult **Troubleshooting** and/or **General MIDI**.*

9. When installation is complete, select EXIT to return to DOS. You will be in the directory in which you installed the game. To play, type SHADOW.

10. If you have never played *Shadowcaster* before, consult the TUTORIAL WALKTHROUGH that explains everything you need to know to get started. If you encounter any difficulties, consult the Troubleshooting section. If problems persist, call ORIGIN Product Support.

CHANGING YOUR CONFIGURATION

If you ever add a sound card (or change from one sound card to another) you will need to reconfigure your sound system.

Simply return to the drive and directory where you installed the game and type INSTALL. This allows you to change the selections you made when you originally installed *Shadowcaster*. Select CONFIGURE SOUND from the menu and follow Step 8 from **Installation**.

OPTIMIZING YOUR SYSTEM

If you are experiencing problems running *Shadowcaster* or do not have the appropriate amount of memory, it might help to create a separate boot disk or decrease the number of memory-resident programs (TSRs) you have loaded.

Do not delete your AUTOEXEC.BAT or CONFIG.SYS files completely—without them, your computer will not function.

CREATING A BOOT DISK

To create a separate boot disk, insert a blank high density disk in your A: drive. From the DOS prompt, type:

```
FORMAT A:/S 
```

Once you have completed the instructions below (in this section) and are ready to use your new boot disk, turn your computer off, insert your new boot disk in your A: drive and turn your computer back on. The boot disk should run and automatically take you into *Shadowcaster*.

Modifying CONFIG.SYS

To modify the CONFIG.SYS on your boot disk, when the format is complete and the DOS prompt returns, type:

```
EDIT A:\CONFIG.SYS 
```

When the new screen appears, determine which memory management system you are using (if any) from those listed below, and type the appropriate commands:

CONFIG.SYS using QEMM

```
FILES=15  
BUFFERS=15  
DEVICE=C:\QEMM\QEMM386.SYS RAM  
DOS=HIGH  
SHELL=C:\DOS\COMMAND.COM C:\DOS\ /P
```

CONFIG.SYS using DOS 5's EMM386.EXE

```
FILES=15  
BUFFERS=15  
DEVICE=C:\DOS\HIMEM.SYS RAM  
DEVICE=C:\DOS\EMM386.EXE 3072 RAM  
DOS=HIGH,UMB  
SHELL=C:\DOS\COMMAND.COM C:\DOS\ /P
```

CONFIG.SYS using DOS 6's EMM386.EXE

```
FILES=15  
BUFFERS=15  
DEVICE=C:\DOS\HIMEM.SYS  
DEVICE=C:\DOS\EMM386.EXE 3072 RAM  
DOS=UMB  
DOS=HIGH  
SHELL=C:\DOS\COMMAND.COM C:\DOS\ /P
```

CONFIG.SYS using DOS 6's EMM386.EXE and DOUBLESPEACE

```
FILES=15  
BUFFERS=15  
DEVICE=C:\DOS\HIMEM.SYS  
DEVICE=C:\DOS\EMM386.EXE 3072 /I=B000-B7FF RAM  
DOS=UMB  
DOS=HIGH  
DEVICEHIGH=C:\DOS\DBLSPACE.SYS/MOVE  
SHELL=C:\DOS\COMMAND.COM C:\DOS\ /P
```

CONFIG.SYS using XMS

```
FILES=15  
BUFFERS=15  
DEVICE=C:\DOS\HIMEM.SYS  
DOS=HIGH  
SHELL=C:\DOS\COMMAND.COM C:\DOS\ /P
```

Exiting CONFIG.SYS and Modifying AUTOEXEC.BAT

After typing these lines, you should exit and save your file:

Alt F

X

Y

Next you need an AUTOEXEC.BAT file on your boot disk:

```
EDIT A:\AUTOEXEC.BAT Enter
```

Type at the new screen:

```
PATH=C:\DOS
```

```
PROMPT $P$G
```

```
(Shadowcaster drive):
```

```
CD \ (Shadowcaster directory)
```

```
SHADOW
```

(The AUTOEXEC.BAT file does not vary with different memory drivers.)

“Shadowcaster drive” and “Shadowcaster directory” should be the drive and directory in which you installed Shadowcaster—if you installed the game in the default directory we suggested, the fourth line you typed would read:

```
CD \SHADOW
```

To exit and save this file:

Alt F

X

Y

Disk Cache Set-Up

Before installing *Shadowcaster*, temporarily disable your disk cache. This is easily done by typing **REM** **Spacebar** before the C:\DOS\SMARTDRV 1024 line in your AUTOEXEC.BAT file. This will cause the computer to skip that line when it reads the AUTOEXEC.BAT. To enable your disk cache after installation, delete the addition.

If you have more than 4 megabytes of RAM on your machine you can install SMARTDRV.EXE (a disk caching program). We recommend you using the SMARTDRV versions from Windows 3.1 or DOS 6.0. If you decide to install SMARTDRV, you need to add the following line to the beginning of your AUTOEXEC.BAT file:

```
C:\DOS\SMARTDRV.EXE 1024
```

Mouse Set-Up

Be sure that you are using a 100% Microsoft-compatible mouse driver—a Microsoft version 7.0 or higher mouse driver is preferable. If you are using a boot disk, this driver must be loaded within your boot disk configuration. Since the command line may differ from mouse to mouse, consult your hard drive's AUTOEXEC.BAT or your mouse user's guide.

One example:

```
C:\MOUSE\MOUSE.COM
```

Be sure to include your specific mouse driver line in the AUTOEXEC.BAT file of your boot disk. When you want to play Shadowcaster, insert this boot disk in the A: drive and start or restart your computer.

Expanded Memory

Expanded memory is not crucial to play *Shadowcaster*—once running there is not difference between base RAM, EMS and XMS. But an upper memory manager such as Quarterdeck's QEMM386.SYS and Microsoft's HIMEM.SYS is required. These memory managers are installed by adding the device line to the CONFIG.SYS file on your computer.

Do not change EMS or XMS configuration once you've started playing Shadowcaster. There is a possibility that mid-game reconfiguration may prevent you from continuing the game.

REFERENCE SHEET

WALKING, RUNNING, SWIMMING. Press and hold left mouse button while cursor is in View Window. The farther from the center of the window your cursor is, the faster you move. The shape of the arrow determines direction.

JUMPING. Press the right mouse button while jump icon is selected and the cursor is in the View Window. Your speed determines how far you jump.

COMBAT. Left-click on a hand, foot or other attack icon to activate it, then right-click on your target.

PICKING UP AND DROPPING OBJECTS. Right-click on object to pick it up. Right-click near bottom of View Window to drop object.

USING THINGS. Activate icon or hand-with-object by left-clicking, then right-click cursor over target.

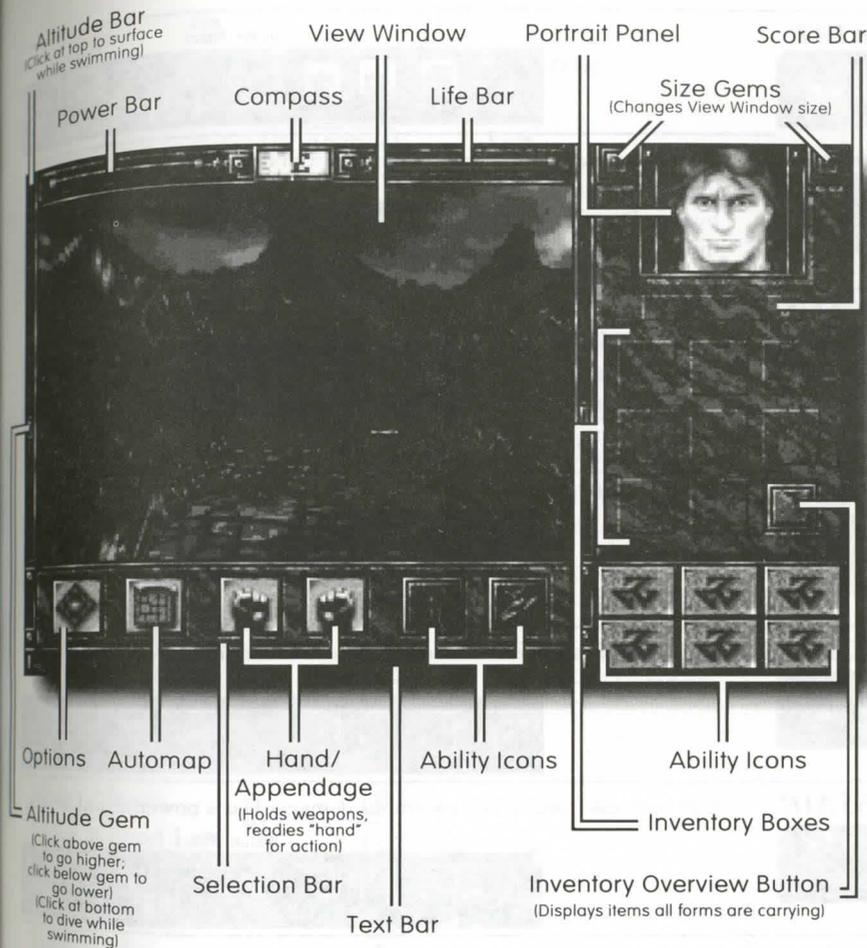
OPENING AND CLOSING. Right-click on object.

CURSORS. *White Arrow* inside View Window. No option is currently selected.

- *Black and Red Crosses.* Hand/appendage is selected.
- *Orange and Black Circles.* Ability is selected.
- *Glowing Blue Cross.* Ability is selected.

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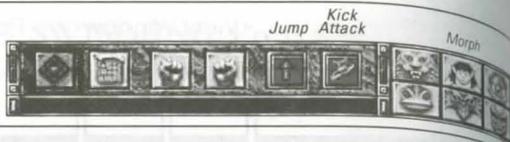
MAIN GAME SCREEN



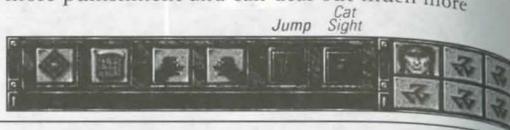
KIRT AND HIS METAMORPHS

Abilities in **bold face** type do **not** use Power.

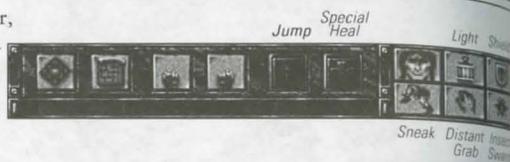
KIRT



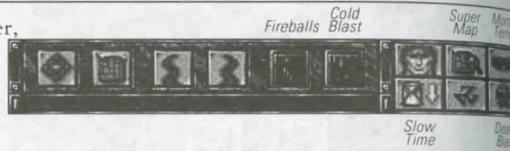
MAORIN Faster, can stand more punishment and can deal out much more damage than a human. Drowns quickly.



CAUN Ineffective fighter, but heals approximately 10 times as quickly as a human.



OPSIS Ineffective fighter, powerful spellcaster.



KAHPA Surprisingly tough, can breathe underwater. Good in hand-to-flipper combat.



SSAIR Can both take and inflict enormous damage. Has a powerful tail attack.



GROST Can punch through some stone walls. Almost impervious to physical attacks. Can survive extremely hot environments.



KEYBOARD CONTROLS

Use of the mouse may be supplemented by the following keyboard commands

Mouse

Left Click
Right Click

Enter

Spacebar

Game System

Toggle between Normal mode and Mega mode

Tab

Options

F1

Sound

F7

Music

F8

Movement

Fly/Swim Down

-

Fly/Swim Up

+

Move Ahead

↑

Turn Left

←

Turn Right

→

Back Up

↓

(Keypad)

Move Ahead

8

Move Ahead Left

7

Move Ahead Right

9

Turn Left

4

Turn Right

6

Sidestep Left

1

Sidestep Right

3

Back Up

2

Selection

Up

E

Left

S

Right

D

Down

X

Open/Close

O

Pick Up/Put Down

O

Automap

F2

Left "Hand"

F3

Right "Hand"

F4

First Ability

F5

Second Ability

F6

HISTORY

Kirt is a descendent of a magical race which calls itself The People. The People enjoyed a special relationship with both the gods and the dwellers of other planes; they were permitted to take the shapes of these distant beings for short durations, as they permitted the others to take on human form.

This exchange worked for the benefit of both The People and the fantastic creatures from the other planes. The People used it to accomplish tasks that were otherwise beyond their powers, while the fantastic creatures used it to do things only the human form permitted and to use one shape's strengths to compensate for another's weaknesses.

The gods gave the gift of morphing to the most worthy of The People. Enjoying as they did the gods' favor and the special powers this entailed, The People built a magnificent civilization and enjoyed a great and peaceful time under their rulers. Trusting the wisdom of the gods to select the most worthy individuals, those who had the greatest morphing abilities were chosen to lead The People.

Not all of The People appreciated this arrangement. Most notable among these were those to whom the gods had declined to give the gift of morphing in any form. These formed a subcaste and were generally regarded (and treated) as less than People.

To these, Malkor, the outcast god, appeared and promised power and riches if they would worship him and follow his ways. Members of the subcaste eagerly followed Malkor, who provided a different and evil variation on the gift of morphing.

Followers of Malkor would capture animals, People, and the fantastic creatures and slay them in horrific, painful rites. Through these rites, they acquired the power to change into the shape of those they destroyed.

Flaunting their new powers, the most powerful of Malkor's minions were given positions of power over The People. The manner of the gods' choosing had always been a private affair — the fact someone had been deemed worthy was evidenced by the shapes they received and not any divine announcement. As the Evil One's followers grew in number and power, slowly The People came under the control of their least worthy and most evil members.

At a great feast to honor the gods, Riodyn, the great holy man, revealed the practice of the evil rites — and named the ones who were following Malkor. At this feast, Veste, leader of the evil People, killed Riodyn, and the Kin Murders began.

In the course of the civil wars that followed, the morphing powers were used to destroy The People, their city and the civilization they had created. In the final battle, the followers of Good drove Veste and his servants into a temple some distance from the city. There Veste mocked them and vowed to return to bring final doom to The People. He then closed the temple doors so that none could enter.

The forces of Good had won, but at what cost? The People were virtually destroyed and their great city turned into a haunted ruin. The gods, appalled by the slaughter, turned their backs on The People. The gift of morphing was intended to be used for the benefit of all, but The People had instead used it to establish a class of rulers and servants. In this, they had gone against the will of the gods.

One god, *Tovason*, did not entirely abandon *The People*. If they kept watch against evil, he promised, they would eventually return to their former greatness. *The People* built a village around the temple and kept guard against *Veste's* return. Through the years they mingled with other tribes and the gift of morphing slowly faded away. Eventually, only two of *The People* carried this gift. They were wed and bore a child they named *Kirt*.

At his birth, the old gods gathered. *Malkor* had been growing in power, and down every path the gods could see lay their ruin and destruction — *Malkor* triumphant and all the lands enslaved. But, down the path *Kirt* would travel, the gods could see nothing. It was as if he cast a shadow over the future of the worlds.

Kirt was given the name *Shadowcaster*. In him resided the hope of *The People* and the ancient gods. But *Malkor* and his followers learned of this hope. One moonless night the doors of the temple flew open and *Veste*, somehow alive centuries after he had fled, raided the village. He attacked the house where *Kirt* lay sleeping and slew his mother and father.

But *Tovason* had been watching the child. Just before *Veste* and his beasts entered the child's room, *Kirt*, under the care of the last *Holy One*, was sent to a far-away land where magic was little known and less respected. There *Kirt* grew into maturity under the guidance of a man he called *Grandfather*.

Grandfather kept close watch over *Kirt*, for he knew the *Evil Ones* were searching everywhere for him. One night a storm arose in which *Grandfather* recognized the power of *Malkor*. On that night, *Grandfather* told *Kirt* of his heritage and sent him back to *The People*, just ahead of the rending claws of *Malkor's* slaves.

Kirt, with little knowledge of this new world, acquires the power to change shape by touching an obelisk that puts him in contact with the gods. He fights his way through the ruined, cursed city of *The People* to cleanse it of a great evil, and discovers a way to the temple at the center of *The People's* village.

By the time he gets there, *Veste*, warned of *Kirt's* escape from the world *Earth*, has struck again. He has carried off the last remaining *People*, and has left *Kirt* a trail to follow through a series of dangerous worlds where evil creatures wait to destroy him.

The trail is clear, but can *Kirt* defeat the successively more powerful servants of *Malkor* — and defeat *Veste* in a showdown of *Virtue* versus *Despair* to restore *The People* to the favor of the gods?

STARTING THE GAME

1. First, install *Shadowcaster* on your hard disk.
2. Select the drive on which the game is installed. (For example, if you installed the game on your C drive, type C: **[Enter]**.)
3. Select your *Shadowcaster* directory. (If you used our default directory, type CD\SHADOW **[Enter]**.)
4. Start the game (by typing SHADOW **[Enter]**).

An introductory sequence begins with *ORIGIN PRESENTS — RAVEN SOFTWARE GAME*. If you haven't played the game before (or have never "saved" your previous adventures), the game proceeds to the Introduction. This provides background information you need to complete your adventure. If you have not already saved a game, immediately following the Introduction you begin a new game. (If you have already seen the Introduction, you can press **[Spacebar]** or **[Esc]** to bring on the following screen.)

OPTION SCREEN

The left side of the screen holds up to four small **Saved Game View Windows** for saved games. The middle of the screen holds the **options**. The upper right of the screen holds a larger **View Window** for the current game or the currently selected saved game. Below this is a **Score Bar** that contains your total current score, and below the Score Bar is the **Text Box**. The Text Box holds text showing either the first line for each saved game (when no saved game has been selected), or the text you entered for the currently selected saved game when you saved it. The lower right of the screen contains the **Text Bar**. When you select **OPTIONS**, prompts may appear here to tell you what to do next.

NEW. Starts over at the beginning of a game.

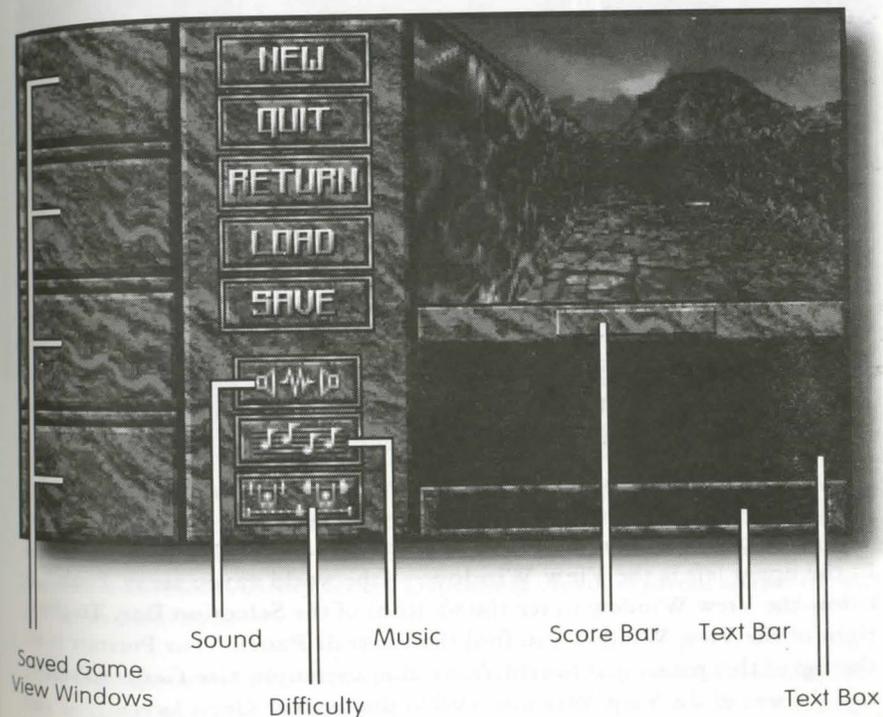
QUIT. Returns you to DOS without saving your current game.

RETURN. Sends you back to the game you were playing when you chose to enter the Option Screen. (This option is grayed out and cannot be selected when you do not enter the Option Screen from a game in progress.)

LOAD. Returns you to a previously saved game:

Select a saved game by clicking on its Saved Game View Window. This causes a larger version of this View Window to appear in the top right of the screen and the additional information you entered about the game to appear in the Text Box at the bottom right. Once you have selected the game you want to load, click on **LOAD**.

SAVE. Stores the current game. Select **SAVE**, choose a Saved Game View Window by clicking on it, and enter up to eight lines of text (Save Info Text) about the game being saved. When you have finished entering this information, press **[Esc]** to complete the save. The Save Info Text helps identify the saved game. You may then click on **RETURN** to continue.



After saving a game, one of the four boxes on the left of the screen displays a small View Window for that game, and the first line of each Save Info Text is shown in the Text Box. (The save option is grayed out and cannot be selected when you do not enter the Option Screen from a game in progress.)

SOUND. (Speakers Icon) Toggles sound effects off and on. When sound is on, the icon has a red border.

MUSIC. (Musical Notes Icon) Toggles music off and on. When music is on, the icon has a red border.

DIFFICULTY. (Weight Lifter Icon) Adjusts the difficulty of the game. There are five different difficulty levels; the game is preset to the third level. When you select this option, a screen appears that allows you to set the difficulty level from wimp (easiest) to hero (hardest). The amount of points you are awarded is tied to the difficulty level. The game is much easier to get through at the wimp level than at the hero level, but if you can make it through the game at hero, your score is much higher.

You select an option by moving the cursor over it and left-clicking.

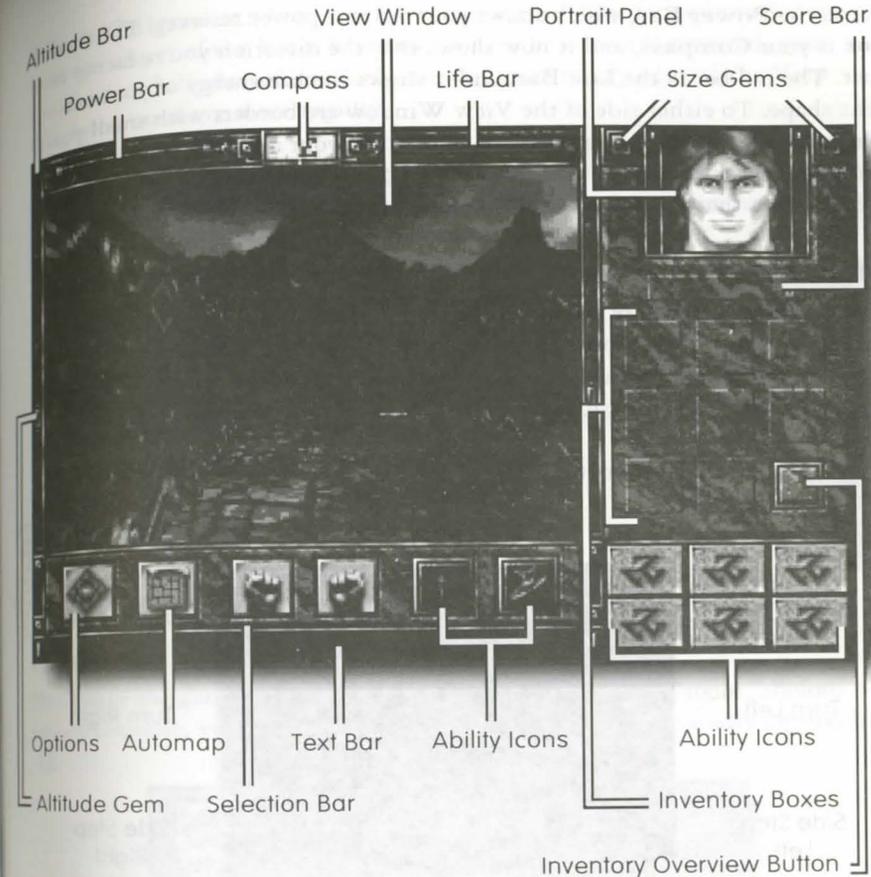
TUTORIAL WALKTHROUGH

NOTE: If you would like to use keyboard commands to supplement the mouse commands we give here, see the Reference Sheet. The first time you play the game you are placed in the situation described below (after the Introduction).

Since the game starts with you being attacked by a slobbering beast, you may want to read the **Main Game Screen**, **Movement** and **Combat** sections of this tutorial before you actually begin play.

MAIN GAME SCREEN

The game begins in Normal Mode — the screen you see most of the time. In the upper left is the **View Window** — the world as you see it. Look below the View Window to see the six icons of the **Selection Bar**. To the right of the View Window you find the **Portrait Panel**. Your Portrait is at the top of this panel, and to either side of it are purple **Size Gems** to control the size of the View Window. (We'll discuss Size Gems later)



Look below the Portrait — the horizontal gray bar is the **Score Bar**. Eight **Inventory Boxes** are just below the Score Bar. The ninth, gold-outlined box is the **Inventory Overview Button**. Finally, at the very bottom of the right side are more **Ability Icons**. Depending on your current shape, there are up to six of these.

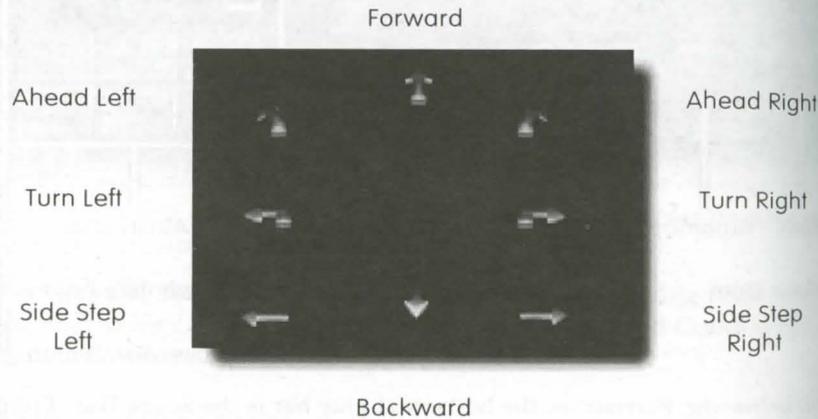
Now look above the View Window. There is a blue bar on the left, a small box in the center showing the letter E, and a red bar on the right. The blue

bar is the **Power Bar**, which shows your current power reserves. The small box is your **Compass**, and it now shows that the direction you're facing is east. The red bar is the **Life Bar**, and it shows the life energy of your current shape. To either side of the View Window are borders with small purple **Altitude Gems** in them. These gems show your altitude — an important feature when you are swimming or flying. Beneath the Selection Bar is a blank area that displays text throughout the game — the **Text Bar**.

MOVEMENT

Try moving your mouse around the screen — but don't press any buttons yet. As you move the mouse in the View Window, the mouse cursor assumes arrow shapes corresponding to its position in the window. When you move the cursor outside the View Window, it becomes gray cross-hairs.

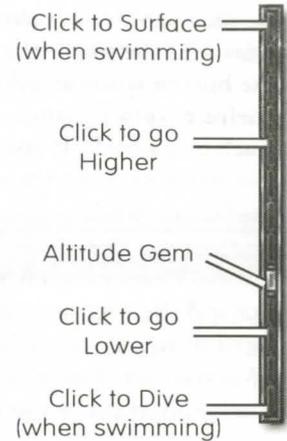
Two rules govern movement:



Rule 1. While your cursor is inside the View Window, its position determines the direction in which you move if you left-click-and-hold the mouse button. When the cursor is an arrow, its shape indicates direction. When it points right, you travel to the right; when it points upward, you travel forward, and so forth.

Rule 2. The speed at which you move depends on how far your cursor is from the center of the View Window. When the cursor is centered, you don't move at all. As you move the cursor closer to any edge of the View Window, you move more rapidly.

During the course of the game, you gain the ability to morph into the forms of other races. You get their abilities and their weaknesses, as well as their method of movement. Some of your metaforms can fly, others can swim. To change altitude while flying, floating or swimming, click on either of the Altitude Bars — the two thin columns to either side of the View Window with the purple gems. To dive, click at the very bottom of an Altitude Bar; to surface, click at the very top. To go higher, click above one of the small gems. To go lower, click below one.



COMBAT

You begin the game in human form, locked in an outdoor "room." Before you can explore, you have to dispose of the monster that is rapidly approaching.



In the Selection Bar (below the View Window) are six icons. Two of these look like hands and one looks like a foot. To hit the monster, left-click on one of the HAND icons. This is now outlined in white to show that it is active. Move the cursor back into the View Window until it is over the monster. Now right-click. Note that the cursor changed to a red cross when you selected the hand. This red cross appears whenever a hand (or appropriate appendage) is selected, except when an object is cursor-grabbed.

When you hit the monster, a small star appears where you hit the creature and you hear the sound of an impact. When a monster hits you, you are pushed back (unless you are against a wall), you make a grunting sound and your Life Bar decreases.

If you are unable to hit the monster, you are probably too far from it. Place the cursor at the top of the screen above the monster and hold down the left mouse button while attacking. This keeps moving you toward the monster and helps to offset changes in distance caused by you and the monster pushing each other back. If you have difficulty holding down the left mouse button while clicking the right mouse button, try holding down the left mouse button while pressing **[Spacebar]** to attack (instead of right-clicking).

To use the kick attack, click on the FOOT icon. The HAND icon loses its white border and the FOOT icon gets a white border. (Note that the cursor has changed to an orange circle. This cursor appears whenever one of the first two Abilities are chosen.) Attack the same way you did for the hand — place the cursor on or above the monster, and right-click or press **[Spacebar]**.

When you defeat the monster, it collapses into a small shape on the floor. Look at your Score Bar — you see that it is no longer 0. Winning a combat increases your score.

LIFE BAR



Being hit by a monster decreases your Life Bar. Click on the Life Bar to find out exactly how much life energy you have left. A message in the Text Bar appears, giving both your current Life and potential maximum Life.

Later in the game, when you acquire additional metaforms, notice that while the amount of current and maximum Life varies from one metaform to another, the percentage of current Life remains constant. For example, if the Caun (with a maximum possible Life of 20) has a current Life of 5, then

the Grost (with a maximum Life of 200) has a current Life of 50 — Life is at 25% of maximum in both instances.

Don't worry too much about losing Life, though. There are three ways for you to regain Life. Given time, in human form, you slowly heal on your own. Also, a metaform that you acquire later in the game — the Caun — heals very rapidly. The Caun also have an Ability to turn Power into Life. A third way to regain Life is to drink a healing potion.

POWER BAR



Power is tracked across metaforms as a single number. If one form has a current Power of 30 and a maximum Power of 50, then all forms have a current Power of 30 and a maximum Power of 50. Only as a human can you naturally regain Power. If a metaform runs out of Power you will morph back to human *no matter where you are or what you are doing*. The maximum amount of Power that you can generate depends on your score. In addition to the score you earn while as a human, your human form gets a percentage of the scores earned by the non-human forms.

Power is used to morph to metaforms, and also to use certain metaform Abilities.

PICKING THINGS UP

Now take a stroll around the courtyard, explore a little, and notice the objects on the ground. One of these is a vial containing a red-colored liquid. To pick up the vial, approach until you are close to the vial (the vial is visible at the bottom of the screen).

Move the cursor over the red vial and right-click (or press **[Spacebar]**). If you are close enough to the vial, you can pick it up. See how the cursor becomes the vial. If this does not pick up the vial, you are too far away.



Move closer to the vial until right-clicking picks it up. Note that you don't have to hold the mouse button down to move the vial. You can also "grab" items that are in a hand or inventory box by moving the cursor over them and right-clicking.

PUTTING THINGS DOWN

Go ahead and right-click again to put the vial down. If you still have a hand or a foot selected, you might make an attack-like movement. In that case, left-click on the selected icon (the one with the white border) to deselect it. If your cursor is near the ground (at the bottom of the View Window), right-clicking drops the vial. You could also drop the vial into a hand or an inventory box by moving it over the hand or inventory box and right-clicking. If the hand or inventory box already contains an item, you "cursor-grab" that item when you "cursor-drop" the item you are currently holding — a simultaneous exchange.

You can only put things down by right-clicking *if no other option is selected* (no icon is bordered in white).

Now is a good time to practice. Right-click on the vial to pick it up. Move it over an empty inventory box and right-click again to put it in the box.

USING THINGS

Look around until you find a wand with a green tip. Pick it up and place it in an inventory box.



To use most things, you need to be actively holding them. In other words, a "cursor-grab" is not enough — they must be in a hand (or appropriate appendage) and that hand (or appendage) must be selected.

Now pick up the wand from the inventory box and move it over a hand. Right-click to put it in the hand, and then activate it by left-clicking on that hand. (A quicker method is to left-click on the object in your inventory — it appears, selected, in the right hand.) Now move the cursor to a far wall and right-click. You see a blazing fireball come out of the wand and hit the wall. Don't do this too often — you have a limited number of fireballs.

Manipulating objects is an important skill to master. Try right-clicking on an empty inventory box. The wand appears in that box. The hand which held the wand is now empty, but it is still active (has a white border). Left-click on the hand to deselect it (white border goes away). Now left-click on the wand. The wand appears in the right hand and the hand is selected. Now left-click on the red vial. The red vial appears in the hand which remains selected. The wand is now in the inventory box which had held the vial. Now left-click on an empty inventory box, and the vial appears in that box. The hand is again empty, but remains selected. Deselect it (left-click).

There are a number of different items in the game. Things such as armor provide benefits to your metaforms as soon as they are placed in your inventory. Some items can only be used by particular forms. To use a weapon, put it in a selected hand/appendage, then click on what you want to attack in the View Window.

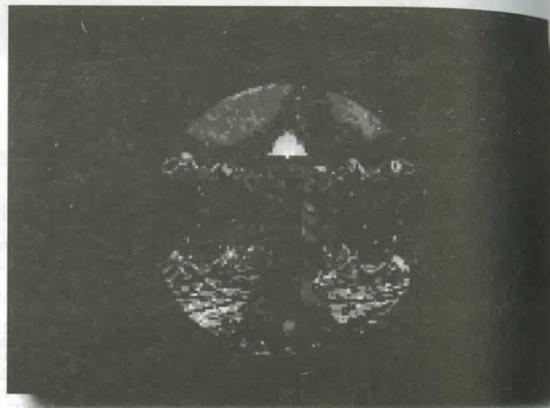
EATING AND DRINKING

Right-clicking with an item on your Portrait is how you consume things. The only reason for you to eat or drink is to heal or get special powers. You don't get hungry or thirsty during this game.

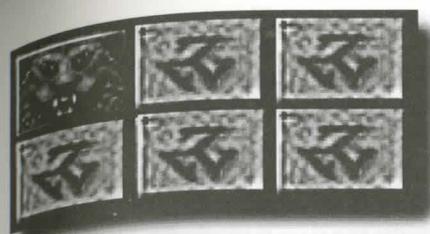
One more thing. Pick up the red vial, move it over your Portrait and right-click. If you were hit in combat, some or all of your missing Life is restored.

MORPHING

In the center of the room is a green obelisk with a red tip — you can't have missed it. In the course of the game, when you find an obelisk like this one and right-click on it, you are granted a new metaform as the obelisk disappears. Click on it now.



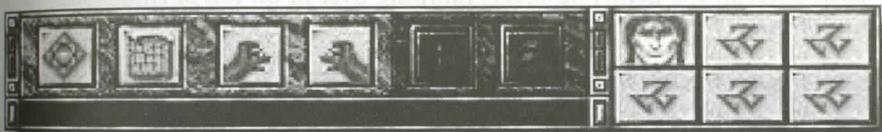
The metaform you have just been granted is for the Maorin — a six-legged cat. You can now see the icon for the Maorin shape in the Ability icon area in the lower right of the screen. Select this icon. The Portrait Panel is briefly taken over by an animated sequence showing the transformation from human to Maorin. When the transformation is complete, the side panel goes back to its original state, with the new Maorin portrait.



Look at your Power Bar, and notice that it has decreased somewhat. This is because it costs Power to morph into a non-human form — as well as to maintain that form once you have assumed it. If you run out of Power while a non-human, you automatically morph back to human. If you happen to be at the bottom of a lake or flying over quicksand at the time, this spells certain death. So be careful with your Power — when you need it, you don't want to be running low.

Click on the Life and Power Bars and watch the Text Bar. Now click on the HUMAN icon in the lower right of the screen. You see the animation morph in reverse. When you click on the Life and Power Bars, you should notice that the Power remains unchanged, but the Life is different between human and Maorin.

Once again, click on the MAORIN icon.



ABILITIES

When you look at the Selection Bar, notice that some of the icons have changed. The HAND icons are now PAW icons. (If you select one of these and right-click in the View Window, you see the Maorin's double-pawed claw attack.) Also, the FOOT icon has been replaced with an EYE icon.

Each metaform has at least two abilities (the rightmost icons of the Selection Bar). For the Maorin these abilities are Jump and Cat Sight. Selecting an icon turns its border white. Select the CAT SIGHT icon. Right-click in the View Window; a number of things happen. The border for the icon turns red — telling you that an Effect has begun. The red border

remains around the icon until the effect goes away. You now have Cat Sight; Maorin can sometimes see infra-red. When you use Cat Sight, the View Window takes on a reddish cast and sometimes items which were hidden can be seen — Cat Sight can be used to find hidden symbols and traps. It works for a limited amount of time, and then your sight returns to normal. If you were watching the Power Bar when you right-clicked, you saw it decrease. This is because Cat Sight costs Power.

Other metaforms in the game give you other Abilities, either in the Selection Bar or under the Inventory Area. Use them the same as you did Cat Sight — select them and then apply them by right-clicking in the View Window. Some of these abilities cost you Power and some do not. If the Ability is an attack, you must right-click over the target for that attack, the same as you would if you were using any other weapon.

Select the JUMP icon and right-click in the View Window. The screen image dips as you jump up and forward. Now try moving ahead and simultaneously right-clicking in the View Window to leap farther.

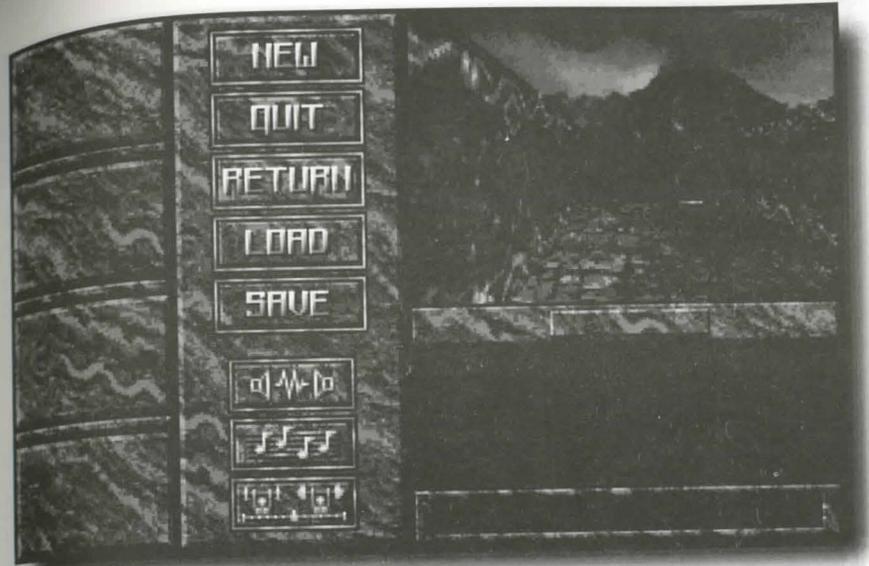
Because you are in a confined place, it is difficult to use the Jump Ability now. Later in the game, however, jumping over or on top of things may be important.



OPTION SCREEN

The leftmost icon on the Selection Bar is for the Option Screen. Select this icon (left-click on it) to bring up the Option Screen.

Going into the Option Screen pauses the game.



You saw this screen when you started the game. This is where you:

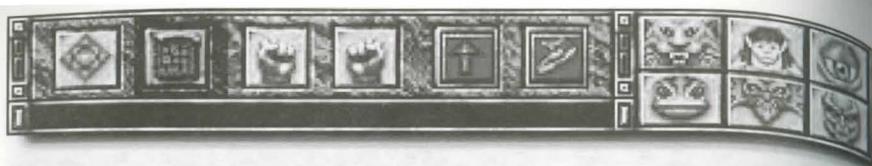
- SAVE a game,
- QUIT your current game,
- RETURN to an existing game,
- LOAD a saved game,
- toggle SOUND off or on,
- toggle MUSIC off or on, and
- set your DIFFICULTY level.

Refer to **Starting the Game** for more information on how these work. Select the RETURN option to continue your game.

INVENTORY OVERVIEW

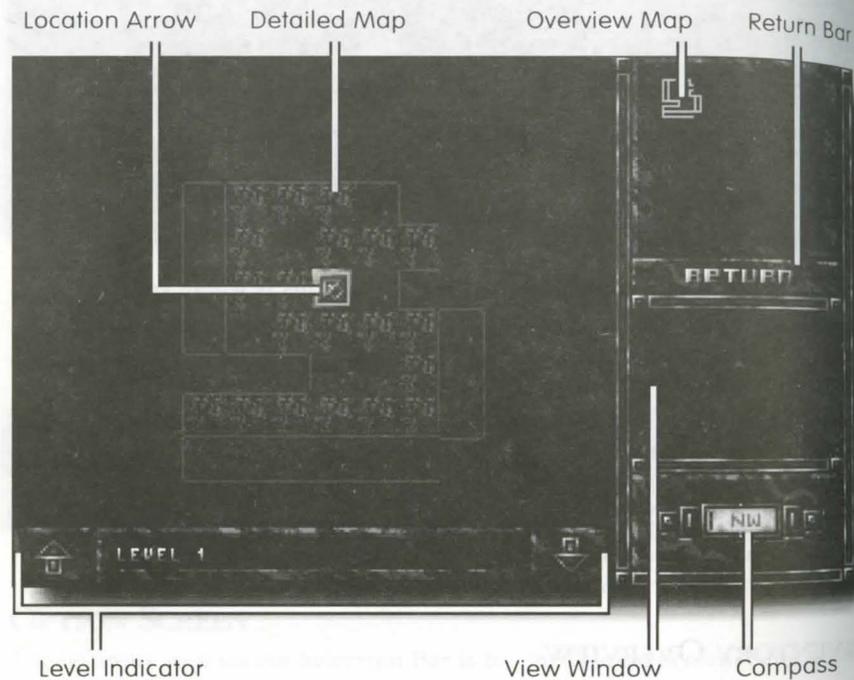
You can see all your available forms and what they have in their inventory and hands (etc.) by clicking on the gold-outlined Inventory Overview Button (at the bottom right of the inventory boxes). This causes the Inventory Overview Screen to appear. The red line under the Maorin's icon on this screen shows that he is the currently active form.

Click anywhere to resume the game.



AUTOMAP SCREEN

Between the **OPTION SCREEN** icon and the **LEFT PAW** icon there is a button that looks like a piece of parchment — the **AUTOMAP** icon. When this is selected, the Automap Screen appears. Left-click on this icon.



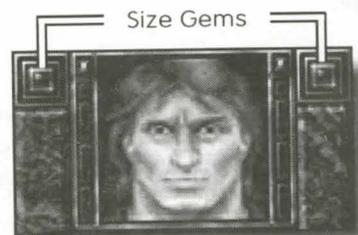
The **Location Arrow** in the **Detailed Map** shows where you are and what general direction you are facing. The upper right of the map shows an **Overview Map** that represents a larger, less detailed area. By left-clicking different areas on the Overview Map, you change what the Detailed Map is

showing. *The automap only shows where you have actually been and not necessarily what you have only seen.* At this point, that's not much. You can get an idea of your relative position in the larger area by looking at the map in the upper right. The blinking red dot shows where you are located.

Below the smaller map is the **Return Bar**. Below this is a small **View Window** of what you saw when you entered the map. Still lower is a **Compass** that shows the direction you were facing when you selected the automap — it is more precise than the **Location Arrow**. Once you've mapped multiple levels, clicking the **Level Indicator** arrows will change maps. Select the Return Bar to return to your game.

VIEW WINDOW SIZE

You have a fair amount of control over the **View Window**. Try clicking on the **Size Gem** to the left of the **Portrait**. The size of the **View Window** shrinks. Click on this gem several times until the **View Window** reaches its minimum size.



Shrinking the size of the **View Window** speeds up the frame rate in the game, making things move more smoothly. This option is recommended for people who have 386 systems.

Now click on the **Size Gem** to the right of the **Portrait**. As you might have guessed, this causes the **View Window** to get bigger. When the **View Window** has reached its apparent maximum size, click one more time. This puts the game into **Mega Mode**. **Mega Mode** slows the frame rate and is only recommended for people using 486 (or faster) systems.

In **Mega Mode**, the left side of the screen from top to bottom becomes the **View Window** and takes up approximately 80 percent of the screen. The **Text Bar** only appears when there is a text message.

Obviously, in Mega Mode there is not room for all icons, etc. to be on the screen at once, so there are two side panels. To toggle between the two side panels, left-click on the Portrait. In Mega Mode, the Life and Power Bar appear to either side of the Portrait. When you morph, the change is shown in the Portrait window only.

There is only one View Window border in Mega Mode — between the View Window and the side panel. At the top of the border is a small gem. Click on this gem now to return the game to Normal mode.



OPENING AND CLOSING

When you clicked on the obelisk, you unlocked the door on the east wall. Save the game and then open the door (right-click on it) and embark on your adventure. Right-clicking opens and closes doors and other barriers (if they aren't locked).

CURSORS

There are four different types of cursor in the game to help you remember what is currently selected:

- *White Arrow* inside View Window. No icon is currently selected and you can pick up/put down items or open/close things by right-clicking.
- *Black and Red Crosses*. A hand appendage is selected.
- *Orange and Black Circles*. One of your two Abilities from the Selection Bar is selected.
- *Glowing Blue Cross*. One of your Abilities from under the inventory boxes is selected.

CONTINUING TO PLAY

This walkthrough should have provided enough information to get you started. At some point you should read the rest of this document, which includes information about the metaforms you eventually acquire and other useful information.

Some things to keep in mind:

- When you see a black sparkling floor, step on it to teleport.
- You are strong enough to take out almost any individual evil creature you might encounter (unless you have been damaged already).
- Evil creatures like to attack in groups. Very evil creatures like to attack just after some other evil group.
- Conserve your Power.

DEATH

Unfortunately, sometimes the Life Bar decreases to zero. When your Life is gone, you die and the Option Screen appears. At this point you can load a saved game or start a new game. You cannot return to the game you were just playing, since that game ended with your death. It is a good idea to save whenever you have acquired something valuable or accomplished something important (four save game slots are provided for this purpose). Otherwise, you risk losing all you've achieved in an untimely, unexpected demise.

YOUR CHARACTER

Your character is either in human form or one of six non-human forms. Each metaform has different abilities. In some metaforms, you can select one or more Abilities from the icons under the inventory area. When an Ability such as the Caun's Light is selected, the blue cross cursor appears.

Forms also have different amounts of Life depending on what type of creature they are and how high their score is. Score is tracked separately for each. Because of this, it is possible to concentrate on a metaform and make it disproportionately powerful.



KIRT

Kirt is a seemingly normal human who was raised in a large, modern American city. In reality, though, he is one of the few survivors of a race of shape morphers. Kirt has studied the martial arts and has recently been sent back to his native world to save his people.

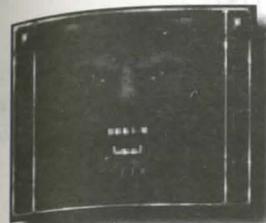
Kirt has the ability to morph his shape. He gains the power to assume more metaforms as he progresses through the game.

Morphing costs Power, and so does maintaining a metaform. Also, using most of the Abilities of different metaforms depletes your Power. When he runs out of Power, Kirt reverts back to human form. Only in his human shape can he regain Power.

Kirt has the Ability to jump, as well as a superior Kick Ability. Selecting any metaform's icon morphs him to that form.



MAORIN



The Maorin are a six-foot tall, six-limbed cat race. In his Maorin form, Kirt weighs 400 pounds, runs faster, can stand more punishment and can deal out much more damage than a human can.

Maorin have the Ability to see things normally hidden to human sight. They also have the Ability to jump.

Maorin dislike water and drown quickly.





CAUN

Caun are a two-foot tall, approximately 40-pound humanoid race with pointed ears. As fighters they are fairly ineffective, but Caun heal much more quickly than a human.

Caun have the Ability to jump. They also have a Heal Ability, but this costs Power. Caun can create light, create a special shield which makes it difficult for enemies to harm them, and can make it difficult for enemies to locate them. Caun have the Ability to reach out and grab things that are some distance away. This includes grabbing things that are on the other side of bars.



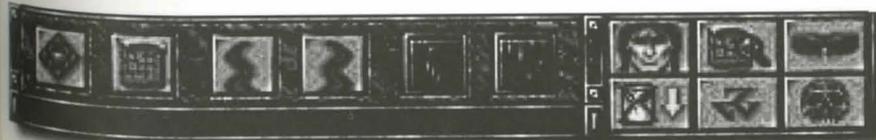
Lastly, Caun can cause a number of small creatures to swarm over their enemies in a stinging cloud.

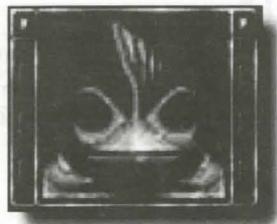


OPSIS

Opsi are large, floating orbs with tentacles. They are not built for physical combat, but have a number of other abilities.

Opsi can throw cold blasts, cause their enemies to flee in fear or make them move in slow motion, plus create missiles and fire them at enemies. They can also kill foes outright. Moreover, Opsi can increase the range of the automap. Normally you can only map where you actually have been, but when a Opsi is using his automap power, things that were not actually seen in the View Window are mapped. As you might guess, this often provides very useful information.

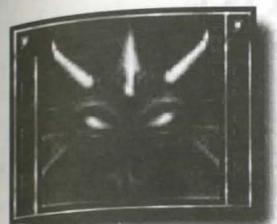




KAHPA

Kahpa look like large, green frog-people. They are surprisingly tough, can breathe underwater and are good in hand-to-flipper combat.

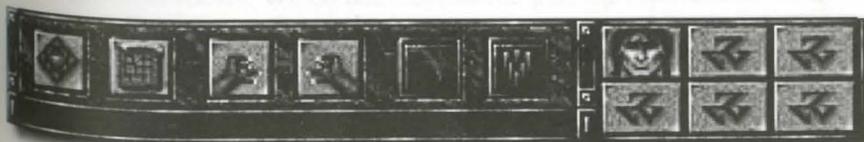
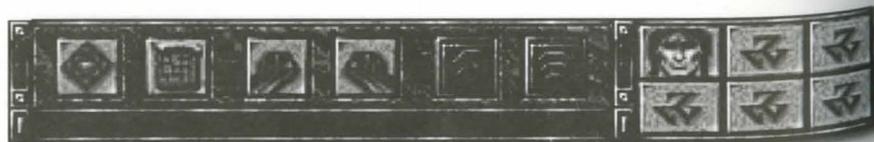
Kahpa can create an electrical shock (extra damaging when used in water) and a sonic attack (also extra damaging in water).



SSAIR

Ssair have no legs and a pointed tail. They can both take and inflict enormous damage, and look like flying red dragons.

Their tail attack is very powerful. They can also breathe fire, at the cost of Power.

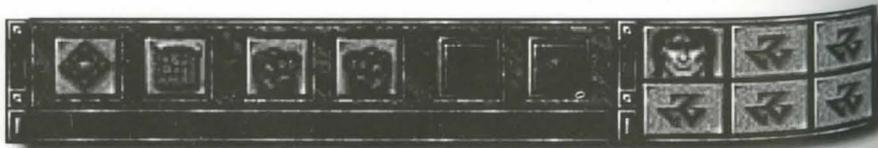




GROST

Grost look like stone giants. They can punch through some stone walls, are almost impervious to physical attacks and can survive in extremely hot environments.

Grost can stamp their feet to cause earthquakes, and can paralyze with a touch.



TROUBLESHOOTING

Q: My mouse is not working with Shadowcaster. My mouse works with all of my other software applications; why not with Shadowcaster?

A: If your mouse is not working with *Shadowcaster*, you should make sure your mouse has been loaded in DOS (in your AUTOEXEC.BAT file) or onto the boot disk you are using to play the game. *Windows* and many other "multi-tasking" environments load their own built-in mouse driver. These mouse drivers will not operate outside of their shell environment. Loading a mouse driver into the DOS environment can be as simple as typing MOUSE at the command prompts. For example:

```
C:\>MOUSE 
```

This command can differ from mouse driver software to mouse driver software. Please consult your mouse user's guide and **Mouse Set-Up** for further details.

Q: My game runs slowly and occasionally locks up.

A: As you may be loading other software that is not compatible with *Shadowcaster*. First, try running your game from a system boot disk. Refer to **Optimizing Your System** to create a boot disk. *Shadowcaster* is only compatible with Microsoft DOS 5.0 or higher. Also, it is not compatible with 286 PCs. You must use a 386-33, 486 or faster PC.

Q: Why does my game crash when I try to play *Shadowcaster* while I am logged into our LAN (local area network)?

A: LAN software often tries to take over the same system resources that *Shadowcaster* uses. Often the two can coexist, but occasionally they can't. If you have strange problems with *Shadowcaster* while your LAN drivers are loaded, try booting from a clean boot disk that does not load your LAN drivers. Please refer to **Optimizing Your System**.

Q: Why does the game crash when I try to play *Shadowcaster* through Microsoft Windows (Windows NT, IBM OS/2, Desqview, etc.)?

A: "Multi-taking environments"—*Windows*, *Desqview*, *IBM OS/2*, and so forth—often conflict in their use of memory and other system resources with *Shadowcaster*. We do not recommend playing *Shadowcaster* under these circumstance. Even if you do run the game under a multi-tasker, do not swap to another application while playing. In general, we recommend that you exit *Windows* (or similar applications) and play from the DOS prompt.

Q: During installation, an error message reported that I have a "DOS Error—CRC Data Error reading drive x:"

A: This error message indicates that you have a bad or corrupted CD. Review the warranty information listed in the back of the manual and call Creative Labs Customer Service.

Q: I have a 100% compatible sound card, but I'm not getting any speech or sound. Why not?

A: Your sound card may have to be put into "SB" (Sound Blaster) emulation through its software or a switch setting on the card. Consult your sound card manual or its manufacturer.

A: It's also possible that you specified incorrect values during sound configuration. Please recheck your sound card documentation for the proper values and try reconfiguring sound.

A: Your General MIDI soundcard may not support the MPU-401 instruction set. See **General MIDI** below.

Q: Shadowcaster still doesn't work after I made a boot disk and/or modified my CONFIG.SYS and AUTOEXEC.BAT files.

A: Copy down the error code and information the computer displayed when it exited to DOS. Then see **ORIGIN Product Support** in the back of this manual.

GENERAL MIDI

Shadowcaster has joined the next generation of sound quality with its support of the General MIDI standard as defined by the MPU-401 instruction set. At the time of publishing, only a few cards support MPU-401. These cards include the Roland SCC-1, Roland RAP-10, and the Creative Labs Sound Blaster 16 with the attached Wave Blaster daughterboard. Other manufacturers have already or are planning to release sound cards that utilize the MPU-401 instruction set. However, sound cards that use a memory-resident program (TSR) to emulate MPU-401 *may not* work with this software.

Note: some General MIDI sound cards offer digitized speech or sound effect capabilities. However, in the case of sound cards like the Roland RAP-10, customers will need to use a second sound card such as a Sound Blaster, Sound Blaster Pro or 100% compatible sound card for digitized speech and effects. Review your sound card documentation or contact the manufacturer if you have any questions.

Space Hulk™

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Loading Instructions

Before playing Space Hulk™ you need to install the program on your computer's hard drive. The hard drive must have 8.5 Megabytes of free space.

1. Boot the computer with DOS (any version above 3.3).
2. Insert CD-ROM into your CD-ROM drive.
3. Type the appropriate drive letter and press **<ENTER>**.
4. Type **cd\hulk** and press **<ENTER>**.
5. Type **install d: c:** and press **<ENTER>**. Substitute the appropriate drive letters for your CD-ROM and hard drive.

Starting the Game

To play Space Hulk, your computer needs at least 580k of free base memory and a minimum of 260K of EMS. Configuring more EMS gives you more sound effects and makes the game run faster. For more information on configuring Expanded Memory (such as EMM386), see your DOS manual.

1. Type **c:** and press **<ENTER>**. (If Space Hulk was not installed on the C drive, enter the correct letter.)
2. Type **cd\hulk** and press **<ENTER>**.
3. Type **hulk** and press **<ENTER>**.
4. The introduction sequence begins. To skip the intro press the **left** mouse button.

Overview

For millennia the Terminator squads of the Imperium have patrolled Imperial space, seeking out invading alien life-forms and eradicating them before they gain a stronghold. In recent years the Terminators have been battling a menace which, if left alone, would surely destroy human existence.

The Genestealers™ came in drifting Hulks of derelict space craft. The remnants of these once proud ships served as the battle-ground on which the monstrous Genestealers would stalk the humans sent to exterminate them. Deafening clangs from the Terminator suits hitting steel flooring, offset by the screech of chitin-like claws on bulkheads, filled the dark, cavernous Hulks. And in the center of the fire and fury stood the armor clad men prepared to send the Evil to their doom.

Time after time Terminator squads enter Hulks only to find themselves surrounded and outnumbered. But they survive. The mystique of these men who don suits of armor and go forth into battle has gone some way to earning the squads their elite status. This status is not based purely on fighting prowess. Although an exemplary fighting force the Terminators also remain true to the values of their brotherhood. The honor of battle is one thing—the honor of defending the lives of their fellow Terminators is another.

While playing Space Hulk™, remember that the Terminators you control are proud individuals. Imagine their souls are joined together as one fighting spirit. They are not simply men with weapons. Behind the battered armor is a Space Marine™ who wants two things—the destruction of evil and the deliverance of this fellow brothers from the menace that haunts them.

Essential Information

This computer adaptation of Space Hulk contains a number of very different features which you have not seen in other games. The following section details everything you need to know about the characters you control and the processes that act upon them.

Space Hulks

The Hulks of today are the space craft of yesterday. Scarred by the cold and debris of deep space they resemble giant monoliths of twisted metal, rock and ice, blended together by an eternity of warp travel.

It is these drifting relics which aid the Genestealers in their striving for destruction. The Space Hulks hold colonies of Genestealers, waiting until the gravity of a nearby planet draws the craft in. The discovery of a Space Hulk signifies the beginning of the destruction of any rival life forms.

For more information, see the *Mission Descriptions* section.

Terminators

First there were the Space Marines. Superbly powerful, bio-engineered warriors whose vigilance defended the Imperium from any menace that chose to disrupt the peace. When the Genestealers were first discovered the Space Marines met their match and many a squad were overwhelmed and destroyed as they searched through the cavernous depths of the Space Hulks.

The elite Terminators were called upon to purge the foe from the face of the Imperium. Their immense armored suits gave them defense against the claws and teeth of the Genestealers. The Storm Bolters™ at their side robbed the enemy of life and their Lightning Claws™ were a

match for the close combat effectiveness of the Genestealers failing limbs.

For a detailed description of the Terminators, see the *Mission Descriptions* section.

Genestealers

The Genestealers. Even the thought of them invoked a fear of the unknown, a fear of the process which had earned them the name. Their claws could rip through steel with ease, and their tough hides were capable of deflecting the hardest projectiles. It seems they were controlled by some hideous higher power, coordinating their attacks through some psychic link to strike again and again at the weakest points in any attacker's defenses. In combat they were unbeatable—until now.

For a detailed description of the Genestealers, see the *Mission Descriptions* section.

Your Role in the Game

In this computer adaptation of *Space Hulk*, you assume the role of an Imperial Captain of the Dark Angel Chapter of Space Marines. From the circling Space Marine warship, you view and control the movements of the Terminator squad. Cocooned in the control room you view the action through cameras mounted on the armor of each Terminator. Watch the View Screens as your men face threats in Real Time. Evaluate the situation and use the Planning Screen and the Freeze Time option to plan and transmit the orders to your squad. If any of the Terminators come under pressure you are able to give them direct instructions in Real Time. This enables you to, in effect, take control and manipulate his moving and shooting actions as if you were the Terminator.

For more details, see the *Planning Screen*, *Terminator View Screens* & *giving Orders*.

Overwatch

Controlling an elite squad of five battle-hardened Terminators would be even harder if it wasn't for the Overwatch mode.

Overwatch translates as "being aware of the surroundings!"

Imagine a Terminator moving through a corridor while in Overwatch. He is aware of anything in his path. If the Terminator senses that a threat is nearby he stops, waits for the menace to show itself and fires until the Genestealer has been destroyed, then continues to his destination. Imagine the same Terminator moving without Overwatch. A Genestealer shows itself for an instant but possibly due to the poor light appears to dissolve into the shadows. The Terminator does not react, continues on his route and stands a greater chance of being killed. Overwatch is the default mode for moving. This means that every order you construct is in Overwatch unless you choose otherwise. Terminators in Overwatch mode only react to threat within their line of sight.

For further information, see *Giving Orders*, *Planning Screen* & *Terminator View Screens*.

Freeze Time

In *Space Hulk* you can move between Real Time and Freeze Time with the press of a button. Freeze Time gives you the chance to pull everything together and take a breath. Switch to Freeze Time and then go to the Planning screen to take a look around the map, identify potential problem areas and respond by giving orders. Freeze Time is *not* a pause. At the start of every mission you are given a limited amount. As soon as Freeze Time is activated the amount begins to decrease. When you switch back to Real time your Freeze Time amount *increases*.

The amount you have is displayed on the Freeze Time Allocation bar.
For more information, see *Giving Orders, Planning Screen & Terminator View Screen*.

Quick Start

The Quick Start guides you through the first basic tutorial. It enables you to gain a basic understanding of how to make a Terminator move and fire. To gain a further understanding of the game you need to read *Giving Orders and Game Tactics*.

1. Load Space Hulk by following the instructions at the beginning of this manual. When the Mission Selection screen appears, **left-click** on Mission Training.

Note: At any time during the mission selection and preparation process a previous screen can be accessed by **right-clicking**.

2. Now **left-click** on Start Basic Tutorial. This takes you into the briefing phase.
3. The Imperial Commander welcomes you and explains the basic mission plan. **Left-click** after every sentence and then move to the detailed mission briefing. Using the map of the Hulk that appears on the left of the screen, the Commander goes through the initial points of deployment, objectives and pick-up areas for the victorious squad. **Left-click** to end the briefing. You are now transported to the Space Hulk.
4. Only one of the View Screens is active. The display gives you a view from Terminator number 1 (note the number in the top left of the display). The letters next to the Terminator number tell you what

weapons he is carrying. The Terminator in this mission carries a Storm Bolter (SB) and a Power Glove™ (PG).

For a list of the abbreviations see *Weapon Descriptions*

Left-click on the Freeze Time On/Off button to bring the game out of Freeze Time and into Real Time. When the game is in Real time everything happens at its normal speed.

Example: A Genestealer that becomes "frozen" by the use of Freeze Time can start to thunder down the corridor towards you during Real Time.

5. Control the Terminator by using the mouse or **cursor keys**. As you move the mouse pointer to the edges of the View Screen it changes into a directional arrow indicating the possible command—to move in that direction **left-click**. Using the mouse control, move the Terminator down the corridor to the door. As you move watch the Scanner. The green blip is the Primary Terminator. As you move, the Scanner follows your progress through the Hulk.
6. Press the UP cursor once to open the door. Practice turns and walking backwards to get the feel of the controls. Notice the scanner in the left of the screen moves as you do.
7. Move the mouse pointer *into* the center of the View Screen. The arrow changes to a cross-hair. **Left-click** and watch a bolt from your Storm Bolter shoot off down the corridor and explode against the wall. Move your Terminator back to the original starting position. **Left-click** the Freeze Time button.
8. **Right-click** on the scanner to go to the Planning Screen. **Left-click** on the Move icon and **left-click** again at the end of the corridor you're in. The program decides the quickest route, red arrows show the movement you have constructed.

Left-click at the end of the corridor near the two doors. The Planning Screen should now show a route from the starting point down to the furthest door.

Finally **left-click** in the grey square at the bottom right of the map. This is the pick-up square that the Imperial Commander mentioned in the detailed briefing.

9. **Right-click** on the Overhead Map to return to the Viewer Screen.

Left-click the Freeze Time button to exit into Real Time play, and watch the Terminator follow the route you have set out.

10. When he enters the rescue square the tutorial ends and you receive the Mission Debriefing.

Here endeth the lesson.

Mission Preparation

Mission Briefing

At the beginning of every mission you receive the basic scenario from the Imperial Commander

Left-click to go to the next line of information. **Right-click** to bypass the whole section and go to the detailed mission briefing. In the detailed mission briefing you are given starting points, entry areas for Genestealers, and any target areas.

Left-click to go to the next line, **right-click** to bypass the whole section.

Choosing a Squad

If you choose to play one of the tutorials or Space Hulk missions, then your squad is automatically equipped and ready to roll. If you selected the Deathwing campaign the honor of choosing your squad and weapons may fall to you.

The five Terminator sergeants have squads capable of different missions. However, you can choose a squad and equip them in such a way as to change their capabilities. Once you have used a sergeant and his squad, they become more experienced, increasing their shooting and close-combat capabilities. The experience is portrayed by feathers underneath the skull—the more feathers, the more experience.

Losing a sergeant—If your squad is killed during a mission the sergeant is not selectable for the remainder of the campaign.

Left-click on any sergeant to have his squad information displayed. The box that appears contains the Sergeants name, the squads experience and the kind of mission that the squad are best suited to. **Left-click** on Select or Dismiss.

See the *Mission Descriptions* section for more information on the available squads.

Arming your squad

Select weapons that are suited to the mission. If you have a Hulk that is made up of tight, twisting passages, Lightning Claws are more effective than Assault Cannons.™ Conversely if you have a large Hulk with free-ways for corridors, a squad equipped with Assault Cannons gets further than a squad with thunder Hammers and Storm Shields

The arches on the rear wall of the armory hide Tech Priests. Each Priest bestows upon a Terminator a different weapons.

Left-click on the archway to reveal the Tech Priest. The available weapon is displayed.

Left-click on the Terminator you want to give the weapon to. If you do not want the weapon simply **left-click** on another archway. In a two squad mission moving the mouse arrow over the left wall brings up a 'Switch Squad' panel—at this point **left-clicking** switches your view to the second squad.

To exit the armory and begin the mission: Move the mouse cursor over the right wall to bring up an 'Exit' panel—**left-click** to finish the weapon selection and begin the mission.

For information on the available weapons see *Weapon Descriptions*.

Moving between screens

On any of the pre-game screens: **left-click** to advance to the next screen, **right-click** to move back to the previous screen.

Abandoning a mission

To quit from a mission, press **T**. Quitting from a Deathwing mission results in the Sergeant being killed—any accrued experience is lost. Reset or continue a Deathwing campaign by **left-clicking** on either RESET CAMPAIGN or CONTINUE CAMPAIGN. After confirming the choice to reset the campaign, **left-click** on CONTINUE CAMPAIGN to begin the first Deathwing mission.

Pausing the game

When playing a mission press **P** to pause the action—the pause screen appears. To return to the game press any key on the keyboard.

Terminator View Screen

This screen allows you to see at first hand where you've sent your Terminators. You can fire at Genestealers, move your squad of Terminators around and see all the gore. It's a far cry from the tranquil setting of the Planning Screen.

View Monitors

Gives you a "Terminators-eye" view of the action. Each Terminator in the squad is marked with a number that corresponds to the numbers on

the overhead maps and the Terminator roster at the Planning Screen. The white letters (eg. SB,PG) on the right of the Terminator number are abbreviations of the weapons that the Terminator is carrying. For a list of the abbreviations see *Weapon Descriptions*.

If he is carrying a weapon that uses limited ammunition (such a a Flamer) the remaining ammo and any reloads are indicated by two numbers next to the weapon type. If a Terminator is carrying a full Flamer with no reloads the numbers on the screen would be 6 and 0. **Left-clicking** on any of these screens fires the Terminator's weapon—but only in a straight line at waist level. If you want your aim to be more accurate then use the Primary Terminator Monitor. **Right-clicking** on the Scanner gives you the Planning screen.

Orders Indicator

There are five boxes below every view monitor. If you have used the Planning Screen to construct a movement, the relevant command icons appear in the five boxes. This system becomes useful when using the Primary Terminator. At a glance you know what the other guys are doing.

Timer

In some missions you have a time limit. An hourglass appears below the Primary Terminator's Monitor.

Primary Terminator Monitor

The Primary Terminator is the one under your direct control—you can move, shoot and pick up items using the Terminator. To select another Primary Terminator **right-click** on any of the small View Monitors, or press the corresponding **Function Key** (eg. for Terminator 3 press **F3**).

Moving and firing with the Primary Terminator

To move the Primary Terminator use the **cursor keys** or **left-click** on the UP, DOWN, LEFT and RIGHT arrows on the right side of the screen. Alternatively you can move the mouse to the outer edges of the primary terminator monitor—the cursor changes to a directional arrow—and **left-click** to move in that direction.

To fire the Terminator's weapon move the cursor into the Primary Terminator Monitor (the cursor changes into a crosshair) and **left-click** on the area or target you want to fire at. Alternatively you can **left-click** on the button in the center of the directional arrows. Pressing both the **left** and **right** mouse buttons simultaneously, or in some cases pressing and holding the **left** button, activates a weapon's special effect.

For details of weapon effects see *Weapon Descriptions*.

Opening and Closing Doors

To open or close a door **right-click** on either side of the door frame or press UP when you are in front of the door. Some doors are locked or jammed and need to be blasted open with a suitable weapon

Note: A Terminator moving in Overwatch sees a closed door as a threat. He stops and shoots until the door is blasted open.

Picking up Objects

Terminators equipped with Power Gloves are the only members of a squad who can pick objects up. To pick up an item or a weapon reload move into the adjacent square. Face the object and **right-click**. The item is displayed in the large box below the Primary Terminator Screen. Conversely, to drop an item that is being carried, **right-click**.

Note: Objects are often dropped in the heat of close combat.

Freeze Time

Left-click on the FREEZE button to switch the game between Real Time and Freeze Time.

Freeze Time Allocation

The Freeze Time Allocation bar shows you how much of this precious planning time you have remaining. If you use it all up you are thrown back into real-time before you can shout "aaaargh"! When you are in real-time your Freeze Time Allocation starts to *increase*, so when you return to the Planning Screen you should have enough Freeze Time to implement another round of orders.

Switch Squads

When playing a scenario with two squads of Terminators **left-click** on the Switch Squad button (#) to switch between the squads. This button flashes when the squad not currently displayed is experiencing some action.

Scanner

Enables you to see a small area around the Primary Terminator. The current Terminator is depicted as a green blip, Genestealers as red blips. The other Terminators in your squad show up as their respective numbers (ie. the red number in the view monitor).

Left-clicking on a Terminator's number makes him the Primary Terminator.

Left-clicking on the Scanner fires the Primary Terminator's weapon to that area, this is particularly useful when firing Flamers at long range targets.

Planning Screen

Command Icons

The command icons allow you to construct a series of movements for any of your Terminators. For details on giving orders and moving see *Giving Orders*.

Move—the default mode of movement is *with* Overwatch. As part of an order, **left-click** on this to choose movement *without* Overwatch, **Right-click** on this icon to reselect Overwatch.

Turn—As part of an order, **left-click** on the left turn arrow to turn 90 degrees left. **Right-click** on the right turn arrow to turn 90 degrees to the right.

Fire Weapon—As part of an order, **left-click** on the weapon 1 icon to select weapon 1. **Right-click** on the weapon 2 icon to select weapon 2.

Open/Close Door—As part of an order, **left-click** on the open/close icon to open a specified door. **Right-click** on this icon to close a specified door.

Number of shots—Used in conjunction with the Fire Weapon command. After selecting a weapon choose how many shots you want to subject an area to.

Squad List—The numbers on this list correspond to the Terminators in your squad. The letters next to each number inform you of the weapons carried by the Terminator. For abbreviations and details of these weapons see *Weapon Descriptions*.

Squad List is useful when giving orders. Select a Terminator by **left-clicking** on his number in the list, or pressing the appropriate Function key (for example: Terminator 3 would be chosen by pressing **F3**).

Right-clicking on the squad list selects the Terminator without moving the Planning Map to his location.

Order Phases—5 Phases. The boxes show an icon for every command you have asked the selected Terminator to perform.

Range of Fire—There are times when you need to know the fire range of the Primary Terminator's weapon. **Left-click** the range icon. The red shading covers every square you can shoot.

Switch Squads—When playing a scenario with two squads of Terminators, left-click on the switch squads button (**!**) to switch between the squads. The button flashes when the other squad is in danger.

Cancel Previous Command—**Left-click** to delete your last command.

Go Command—After constructing a movement in Real Time **left-click** on the GO icon to get the Terminator moving. When playing in Freeze Time, clicking on this icon concludes a movement plan.

Freeze Time/Real Time—**Left-click** on the FREEZE icon to switch between Freeze Time and Real Time.

Freeze Time Allocation—The Freeze Time Allocation bar shows you how much of this precious planning time you have remaining.

For more information see *Freeze Time* in the *Essential Information* section.

Strategic Map

This is the only map that shows the Hulk in its entirety. The map is useful when planning ahead because it gives the whole picture.

Terminators show up as grey and Genestealers as red. In some missions the Hulk may not have been scanned correctly. A full layout of the Hulk is not displayed on the Strategic or Planning Map. As the Terminators explore the corridors more of the Hulk becomes visible on the maps.

Right-click on the map to go to the View Screens.

Planning Map

This is where you construct and plan all your commands. Because the map gives you the ability to see what's around corners it is a tool you should often use.

Your Terminators are represented by their images and a number on a plan view of the Hulk. All the Hulk's features are represented. Doors, teleport squares, target areas for flaming and Genestealers—or blips. To scroll around the map **left-click** on the borders around the map or use the **cursor keys**. Alternatively if you want to see a specific area **left-click** the area on the Strategic Map.

Right-click on the map to go to the View Screens. You may also view a specific area within the Hulk by holding down the left mouse button and dragging the purple box.

Blips

The Detail Map is really a scan of the Hulk. Because the scan is being performed from outside the hull of the ship it is inaccurate and is only able to display a blip where a Genestealer has been detected. A blip is the radar image of a detected life-form.

A single blip can hide 1 to 6 Genestealers. They should be approached with caution. Only when you are close does the blip reveal what is has been hiding.

Giving Orders

To effectively play Space Hulk you need to give orders at the Planning screen. Because of the speed of the game it is near impossible to control a whole squad of Terminators, in real time, using the View Monitors. The Planning Screen gives you the ability to assign movement orders to your squad.

An order usually follows this process:

Choose Terminator—Choose Command—Choose Destination

Moving a Terminator

To select a Terminator **left-click** on the Terminator's symbol on the Planning Map or line in the Squad Roster. Alternatively you can press the corresponding **function key** on the keyboard. For instance, Terminator 3 would be chosen by pressing **F3**. The Terminator's symbol flashes.

The default movement type is *with* Overwatch. If you want to select movement *without* Overwatch then **left-click** on the Move icon. It is important to note that a Terminator who has not been moved, defaults into Overwatch. Also, a Terminator who is in Overwatch and facing a wall, turns to face an open space.

Now **left-click** on the square you want the Terminator to move to. A line of red arrows appears marking out the shortest route from the Primary Terminator to the destination you have chosen.

Note: When selecting a destination there may be a Terminator in the square you wish to choose. If you find that clicking with the mouse results in the Terminator being selected, use the **TAB** key.

Alternatively you can mark out a desired route by **left-clicking** along the path you want the Terminator to follow. If you do this it is best to

left-click at the end of every corridor section you want to go down.

Note: Be careful when using this method as every click of the mouse uses up one of the five order phases.

After planning a move you can finish the process by **left-clicking** on the 'Go' Command icon, selecting another Terminator or switching to Real Time.

Duplicating an Order

There are times when you want more than one Terminator to carry out the same order. Select a Terminator. Be sure he is at the front of the group you want to move.

Hold down the **Shift** key and click on the other Terminator's number in the squad Roster or press **F1** to **F10** on the keyboard (if he is Terminator 3 you would press **F3**).

In the squad roster an arrow appears next to the Terminators you have selected. Use the Command Icons to plan an order. The selected Terminators all follow the route. You can order all the Terminators in one squad to follow the same movement.

Turning

Because the program automatically adds a turn when you select a route that includes a corner it is not always necessary to add them to the command.

The Turn command is used in situations when you need to face a Genestealer or can't handle turning the Terminator yourself in the View Screen.

Depending on the direction you want to turn, **left-click** or **right-click** on the Turn icon. The command is then added to the Order Phases.

Using Weapons

The Terminators usually carry two weapons. A long-range weapon such as a Storm Bolter, and a Close Range weapon such as a Power Glove. Close Range weapons are used against Genestealers when they are face to face with the Terminator. You have no control over their use. If a close combat situation arises the program determines whether or not to use the Close Range weapon.

The Planning Screen lets you fire weapons at a *specific* square. To find out what squares you can target use the Range of Fire icon at the Planning Screen.

To fire weapon 1, **left-click** on the Fire Weapon icon. **Left-click** the area on the Planning Map that you want to use the weapon on (you must have line of sight to that area). A cross-hair symbol appears on the map and the Fire Weapon icon appears in the Order Phases. Some weapons have special effects which are classed as weapon 2. To use a special feature just **right-click** on the Fire Weapon icon.

For more information on weapon special effects, see *Weapon Descriptions*.

Opening/Closing Doors

The program automatically opens a door when you select a route that passes through one. Use the Open/Close door command in situations when you need to pause outside a door before opening it, demanding a separate Open command.

To open, **left-click** on the Open/Close icon and then **left-click** on a door.

To close, **right-click** on the Open/Close icon and then **left-click** on a door.

Remember that Terminators moving in Overwatch see closed doors as threats. They stop moving and shoot the door until it is destroyed.

Note: Sometimes your point of departure is a teleport square. To activate the teleport device the door must be closed. **Right-click** on the door frame to close the door.

For a list of controls that can be entered using the Keyboard, see *Keyboard Commands*.

Game Tactics

Lesson number 1 – Genestealers move faster than Terminators. Stay hidden until you're sure you can destroy your target. Before committing your squad to an order look at the distances involved. If there are blips near the point of destination or in an adjoining room, the chances are a Genestealer is upon you before you know what's happening.

Lesson number 2 – Genestealers aren't stupid. Genestealers have the habit of finding the lone Terminator you've sent off to find something. It's always a good move to have all Genestealer entrances covered before going ahead with the mission. This prevents single Genestealers going off in search of prey.

Lesson number 3 – Don't hang around. Staying in one place for too long gets you into trouble. The Genestealers start to arrive in large numbers and very soon you are over-run. Concentrate on your mission objectives and get the job done.

Lesson number 4 – Do not rely on Overwatch. Having all of your Terminators standing in Overwatch waiting for the next Genestealer to arrive does not guarantee you success. Terminators often find their shells ricochet off the hard Genestealer's skin—there is no substitute for you taking control of one (as the Primary Terminator) and firing the shots yourself.

Lesson number 5 – Stay close.

Because the Genestealers usually outnumber your squad it is best to remain in a group. Provide cover to any movements of your squad. Genestealers are intelligent enough to hide behind corners if a stream of Bolter shells are shooting down the corridor—use this to your advantage.

Lesson number 6 – Protect your assets.

A number of the mission objectives rely on you having a specific weapon to finish the job with. In missions like this it is vital that you guard any Terminators that carry important weapons or items.

Lesson number 7 – Inspiration grows from the barrel of a gun.

Weapon Descriptions

Weapon Abbreviations

Power Glove	PG
Assault Cannon	AC
Storm Bolter	SB
Heavy Flamer™	FL
Lightning Claws	LC
Thunder Hammer™	TH
Storm Shield™	SS
Power Sword™	PS
Chain Fist™	CF

Close Combat Weapons

Lightning Claws

Lightning Claws are bladed gloves which have been designed purely with destruction in mind. Bristling with power from an onboard generator they can make short work of even the toughest Genestealers. As the Claw's mechanism covers much of both arms, Terminators carrying Lightning Claws have no secondary weapon.

Power Glove

The outer shielding of the Power Glove hides a complex hydraulic power unit which enables the glove to break through the toughest door—or Genestealer skull.

Chain Fist

Used to rip doors and bulkheads apart the Chain Fist can also be used to good effect on Genestealers—reducing them to a bloody pulp in a short time. The arm attachment is basically a Power Glove with a built-in heavy chainsword. The energy that drives the chain comes from a power field within the glove and is so great that the chain can be used to rip through bulk heads.

Although heavy and unwieldy the Chain Fist can be used in such a way that it becomes a force to be reckoned with in close combat.

Thunder Hammer & Storm Shield

This is a huge war-hammer with the ability to create a surge of energy so great it could cause solid objects to explode.

Constructed around a power generator, the Thunder Hammer can also, at the Terminators command, self-destruct. The generator surges with energy and explodes, causing everything in the adjacent area to

vaporize—including the Terminator. A Terminator who is equipped with a Thunder Hammer always has Storm Shield as weapon two.

Simultaneously clicking the left and right mouse buttons results in the thunder Hammer's generator exploding, causing vast damage to the surrounding area. Using this effect kills the Terminator equipped with the weapon and any others in range.

The Storm Shield rests on the left arm and draws its defensive energy from the generators within the Terminator suit. Shaped like a cross, it glows as the power sheaths the metal surface. Although the Shield has no offensive capabilities a Terminator equipped with such a device stands a far better chance of surviving a Genestealer hand attack.

Power Sword

Power Swords are extremely effective close combat weapons. The energy field which covers the blade allows the sword to cut through most armor. The sword is particularly adept at slicing through the chitinous skin of Genestealers.

Long Range Weapons

Storm Bolter

The main armament of the Terminator is the Storm Bolter. The bolter shells fired by the weapon are large rocket propelled shells that explode *after* entering the target. The Storm Bolter has unlimited ammunition. However, in heated engagements it has a tendency to jam.

Assault Cannon

The Assault Cannon is a multi-barreled gun which fires explosive tipped ammunition in 50 round bursts. Because of its awesome fire rate it is an invaluable weapon when fending off ravaging Genestealer

attacks. The Cannon's ability to rarely miss is best used when exploring long corridors, providing cover and valuable "Genestealer free" time to the movements of your squad.

Ammunition is the only limiting factor—you are only given enough for ten bursts. In some missions ammunition reloads can be found. If you come across some lost ammunition move into the adjacent square and **right-click** to pick it up.

Pressing and holding the **left** mouse button results in the Assault Cannon discharging all its ammunition in one destructive burst.

Heavy Flamer

A large proportion of the Space Hulks you encounter are infested with the Genestealer brood. The fiery inferno caused by a Heavy Flamer is one of the best methods of eliminating their foul kind.

Used as an offensive weapon, the Flamer can be very effective at providing cover. This is due to its long range and the area of destruction which can be achieved if targeted correctly. The area of effect is based on the size of the room. The Flamer is capable of covering a 3 by 3 square area, but this area may be reduced if the flame is dropped in a narrow corridor.

The Flamer has enough fuel for six shots. Simultaneously clicking the **left** and **right** mouse buttons results in the Flamer exploding and burning a large area. Using this effect kills the Terminator equipped with the weapon and any others in range.

Keyboard Commands

F1-F10

Select Terminator

F

Switch between Freeze Time & Real time

Cursor Keys

Scroll view or control Primary Terminator

P

Pause

SHIFT (hold down)

Link/Duplicates orders. Select Terminators while holding SHIFT key

T

Quit Mission

SHIFT-Q (only in pre-mission screens)

Quit to DOS

SPACE BAR

Swap squads (two squad mission only)

Problems With The Game?

If you are having a problem installing or playing the game, we want to help. First, please make sure you have read the installation and start-up section of the manual thoroughly, and make sure you have at least 8.5 megabytes free on your hard drive. If you have followed the directions in the documentation, and are still having trouble installing or operating the software, refer to the **Problems With The Game** section at the end of this manual. Before attempting any of the suggestions, please make sure you are familiar with the DOS commands being used. Consult your DOS manual for more information.

Mission Descriptions: The Imperium

The Imperium of man has existed for 10,000 years, but its foundation can be attributed to a single invention: the *warp drive*.

A phenomenal breakthrough, the warp drive allowed spacecraft to travel astronomical distances in short periods of time. The importance of this invention in human imperialism cannot be exaggerated.

Whereas it once took centuries for human spacecraft to travel to Sol's closest neighboring star, the same distance could suddenly be covered in just few hours.

The ability to cover enormous distances in negligible amounts of time led directly to a massive program of exploration that came to be known as the great expansion. Free from the limitations of time in interstellar travel, humanity began to explore the vast universe with great determination. It wasn't long before humans found rich new worlds—worlds suitable for human habitation.

Large-scale colonization of planets was just one of the predictable results of man's drive towards the stars. The other was war. As quickly as humans discovered habitable planets, they also encountered aliens—many of whom had imperialistic designs of their own. With grim inevitability, the first of many Alien Wars flared up between human and non-human empires. The pattern for galactic strife was set.

The Dark Age of Technology

The Great Expansion brought new wealth, new ideas and new arrogance. The machines of travel and conquest achieved incredible levels of sophistication and were, to the masses of people who benefited

from them, nothing short of awe inspiring. Science, gravely misunderstood by the ignorant, came to be revered as God.

The end of this Age of Technology was heralded by the sudden appearance of psykers—humans with psionic powers such as telekinesis. What caused certain individuals to suddenly develop psionic powers has never been precisely determined, but within a few centuries psykers were recorded on almost every planet populated by man. At first, public reaction to the psyker phenomenon was mixed. On many planets, psykers were persecuted as abominations or freaks of nature—those unfortunate enough to be caught by fearful and ignorant masses were burned at the stake in what were modern-day witch hunts.

On more civilized planets, psykers were protected. Some governments even attempted to nurture the understanding and development of psyker powers. In a series of bold attempts to harness the powers of the mind, psykers on openly tolerant worlds were allowed to explore and experiment with their new found skills.

The uncontrolled experimentation with psyker powers proved to man's greatest folly. Ignorant of the forces with which they meddled, novice psykers opened the galaxy to invasion by extra-dimensional creatures. Daemons—fell creatures of the warp, born of Chaos—swept into the galaxy through the unprotected minds of the psykers. Soon monsters of every description were walking the surface of thousands of worlds, senselessly destroying cities and civilization. Hostile alien empires took advantage of man's crises and attacked savagely, attempting to regain lost territories and resources. The Age of Strife was born.

The Age of Strife & The Rebirth of Man

For more than 5,000 years, humanity was wracked with war as nation battled nation and planet fought planet. Men fought bitterly with

Daemons, aliens, and with each other. Only the worlds where psykers were rigorously suppressed survived intact.

Fortunately, great heroes often arise in the moments of greatest peril. The Age of Strife brought forth one such man—the man who would eventually become Emperor of Human Space. A shrewd diplomat, he gathered the loose fragments of humanity into a single empire. He conquered those who would not join forces with him and reclaimed whole worlds lost to aliens. He's also the strongest psyker that galaxy has ever seen—it was the Emperor himself that finally drove the Daemons back into the warp.

The Emperor

The Emperor still reigns after 10,000 years. As an immortal, he has ruled millennia, ordering the lives of men, protecting humanity from the great threats of the universe, and sacrificing himself for the future of the race. Only the Emperor's strength, will, and intelligence have held the Imperium intact and allowed it to flourish through the centuries of strife and discord—it is to the Emperor that humanity owes its existence.

Space Hulks

The largest and most advanced human civilization ever, the Imperium encompasses millions of stars and planets. Each human colony in this vast galactic realm is an island in a sea of emptiness, separated from its neighbors by thousands of light-years of space and connected to the Imperium only by fleets of spacecraft.

The vessels that form the infrastructure of the Imperium use *warp space*, a separate and complete universe that exists alongside our own 'real'

space. The two universes—real space and warp space—are intimately connected. For every point in our space, there's a corresponding location in warp space. Warp space, however, is not an exact duplicate of our universe. Two points that, in our reality, are tens of thousands of light years apart might be separated by a few miles in warp space. Thus it's possible for a suitably equipped ship to enter warp space through a warp gate, travel for a few hours, and re-emerge in our space millions of miles from the ship's departure point.

Warp space allows a spacecraft to travel hundred of thousands of light years in only a few hours. The Imperium would not exist without this alternative universe—protecting and administering such a colossal empire would be impossible if ships could only travel through real space at sub-light speed. But warp travel is not without its dangers. Warp space is filled with cross-currents, eddies and whirlpools of power. Some ships disappear without a trace, only to emerge centuries later or millions of miles from their intended destination.

Some vessels become locked in strange currents of the warp, emerging in real space from time to time, only to be helplessly sucked back into the void. They have no control over their destination and may travel in the warp for centuries. Often these ships are still manned with living crew—lost beings, prisoners of the void. Often these beings will scavenge the wrecks of other spacecraft, joining the remains to their own vessel in order to increase living space or fashion an escape vessel. These shoddy conglomerations of space junk can become, after centuries of accumulation, monstrosities—several miles long as well as wide.

Humans call these lumbering ships *space Hulks* and regard them with self-deserved suspicion. For a space Hulk can be a derelict ship with priceless treasures from the past—or it can be a harbinger of evil, the home of treacherous alien beings.

The Genestealers™

Savage eyes burning in the dark. Four arm-like appendages to grasp and tear. A horror of teeth and claws. The Genestealer is a biological perfection—an intelligent, ruthless killing machine that knows neither the tingle of fear nor the pain of remorse.

Like all living organisms, the Genestealers have simple goals—to survive and multiply—but the means by which they further their race is totally unique among known lifeforms. What sets these horrific creatures apart from other highly evolved organisms?

Reproduction

The most conspicuous characteristic of Genestealers is their means of reproduction. Genestealers don't mate—there are no males or females among their numbers. Instead, Genestealers reproduce by infecting other races with their genetic material.

Using a powerful hypnotic gaze, a Genestealer paralyzes its victim in much the same way that a snake terrifies its prey into immobility. Once the victim is psychologically dominated, the Genestealer deposits an egg in the victim via a long, supple tongue lined with oviposers, or egg-layers. The Genestealer inserts its tongue into the victim's oral cavity in a hideous parody of a kiss, piercing the victim's tissue and depositing an egg. After the victim is infected, he or she is released.

Whether as a result of the Genestealer's hypnotic gaze or as a by-product of the egg's hormonal secretion, the victim has no memory of the implantation—the entire episode is remembered only as a nightmare of fear and burning eyes. A subtle psychic link is established between the Genestealer and the victim. The Genestealer can influence the victim's thoughts and actions without the victim's knowledge.

The Genestealer uses this power to give its victim one overwhelming desire: the mate and have children.

Driven by powerful subconscious urges, the victim proceeds to reproduce with his or her own kind. Because of the damage to the victim's genetic material, the children will be hybrids: part victim race, part Genestealer. Until the fourth generation, the hybrids are sterile, procreating only by the Genestealer method.

The first generation hybrid closely resembles a purestrain Genestealer. From birth—if not before—it has the Genestealer's strong psychic ability. The offspring's psychological influence, together with the parents' innate paternal/maternal instincts, blinds the parents to the child's true monstrosity. They nurture and cherish the young hybrid, and will go to great lengths to protect it from harm.

When the first generation hybrid matures, it seeks to infect others, who in turn produce second generation hybrids. With each passing generation, the hybrids look more and more like their parent race, and less and less like Genestealers. By about the fourth generation, they are all but indistinguishable from purestrain members of the victim race, to the extent that they are able to mate in the same fashion as uninfected members of their species. Some of their children will be hybrids, some purestrain members of the victim race, and other purestrain Genestealers. All of the descendants of a purestrain Genestealer tend to naturally band together into an extended 'family,' usually under the control of the original Genestealer itself.

Genestealers & Technology

Despite being equipped with hands, purestrain Genestealers are not tool-users—they build nothing for themselves. Their sophisticated and subtle brains, which allow them to infiltrate and psychically dominate

other species, are quite incapable of understanding the complexities of the lever or wheel—or the spear or gun, for that matter. When they fight, they fight as animals, using their bare teeth and claws to tear their opponents to bits.

The hybrid generations are different. While first generation Genestealers are almost as limited technologically as their forebears, later generations are capable of understanding and using technology. A third or fourth generation of Genestealer can build and operate sophisticated equipment, and it can wield weapons. But even the later hybrids are not technological innovators—they are limited by the capabilities of the host parents. If their parents lack sophisticated manipulatory digits, so will the hybrids; if the victim race never achieved spaceflight, the hybrids are unlikely to do so.

The Conquest of Planets

Ill-equipped to build and operate their own spacecraft, the Genestealers travel aimlessly in massive space Hulks, waiting to be 'discovered' by humans or aliens. Genestealers are incredibly hardy and extraordinarily long-lived—they can endure centuries of isolation in warp space, patiently waiting for a single encounter with an unwary victim species. Once an individual Genestealer infects a victim, they establish a coven on the host's home world. There they increase their numbers, taking great pains to avoid detection. After fourth generation hybrids have matured, they leave the planet as merchants, diplomats, traders and even soldiers in the Imperium. Thus they spread their covens to new planets.

The Legion Astartes

200 years after the Age of Strife the forces of Earth had carved out an Empire that stretched almost half way across the galaxy. This vast broadening of the Imperium was known as The First Crusade.

The Legion Astartes (Space Marines) are attributed with being largely responsible for the victorious wars that put the Imperium on the Galactic map during the time of The First Crusade.

The millennium directly prior to the beginning of the Crusade saw a vast research and development project start. During the volatile warp storms that had plagued Earth in the Age of Strife, superbly equipped laboratories were constructed under the surface of the planet. These laboratories, once finished, were turned over to the Adeptus Mechanicus who had orders from the Emperor to bioengineer a fighting force so deadly that nothing could be its equal—an elite group of soldiers who's strength and loyalty were unflinching. These new warriors were organized into their own units, known as Chapters.

In the beginning, the recruits were implanted with nineteen cultured organs. These organs allowed the Space Marines to perform acts an ordinary human would find difficult—even life threatening. For example, the phase seven implant is an organ known as the Preomnor. Having operated through the rib cage the preomnor is placed in the chest cavity and connected to the Marine's dietary tracts. Once in place the organ acts as an advanced pre-digestive stomach, annulling any poisons or toxins that the Marine eats. The result being that a Space Marine's body can gain sustenance from almost any material without admitting harmful substances in to the blood.

The Chapters continue through the collection of a product known only as gene seed. Without gene seed a Chapter has no future. The progenoid gland (phase 18 implant) exists solely for this purpose. After implantation the organ absorbs hormonal stimuli and genetic materials from the other implants. When mature, each gland contains a single gene seed for each organ that has been added to recipient Marine. The glands can be removed any time after maturity. The progenoid must then be carefully prepared and the gene seeds stored. When the need arises the gene seeds are cultured and form a new, specialized implant. And so the cycle continues.

The whole ethos that surrounds the Space Marines stem from the Chapters in which they are organized. Distinctive names, armor and insignia abound, fellow Space Marines are known as Brothers and loyalty to the honor of the Chapter is of the utmost importance. The whole unit operates with a kind of religious zeal. Chaplains instruct Marines in the way of the Chapter, ceremonies and rituals are a regular occurrence, the idea being that the Space Marines must immerse themselves in the ancient teachings of the Chapter.

This loyalty is displayed in combat, where the one million warriors of the Legion Astartes (regardless of Chapter) fight for and on behalf of the Emperor. In many battles since their founding the Space Marines have saved the Imperium from certain defeat. In the far reaches of the Imperium companies of Space Marines hold back the forces of chaos from humanity—their courage and strength upholding the peace of civilization.

The Terminators

In the years following the introduction of Space Marines into active duty a number of scenarios appeared where the Imperial forces were defeated. When the performance of the Marines was questioned a study indicated that the environments in which the battle took place

caused some problems to the armor worn by the Space Marines, resulting in loss of movement or even death.

The Adeptus Mechanicus were commissioned by the Emperor to research and develop a new breed of body protection to be used in lethal situations such as the interior casings of plasma reactor shields or the highly corrosive, vacuum filled corridors of Space Hulks. Also known as Tactical Dreadnought Armor, Terminator exoarmor is a development of the sealed environment suits used by spaceship crews. When suitably enhanced by the Adeptus Mechanicus, Terminator armor can remain virtually unscathed after a direct hit by most weapons.

Almost all Space Marine Chapters have Terminator suits. They are usually old, having been passed down through the ages, and are covered in scars and insignia depicting past battles. The suits are treated with the kind of respect given to ancient relics and although their outward appearance may be one of mistreatment, they are kept in perfect working condition—the Marines who wear them are of the thinking that to clean the outer layer of the armor would be to wipe away the memory of the victorious battles they were part of.

Only the Chapter's best Marines are bestowed the honor of using Terminator armor. Along with the honor comes added training, for the Terminator suits are a technology that must be used correctly to be effective.

All suits contain their own independent power supply and enclosed life-supporter systems. The inner casing of the armor holds teleport homers, bio-scanners, energy scanners, auto-senses, suspensors, targeters and communication devices. The communicators carried in the suits are specially designed to carry visual as well as auditory signals. This means that any member of a Terminator squad can see the view from

any of his fellow Terminator suits. This technology can also be adapted so the signal can be broadcast away from the squad to a commander not in the field of battle.

The Terminators greatest menace, has come in the form of the Genestealers. Among the peoples of the Imperium the Terminators are best remembered for their acts of heroism on vast Space Hulks hurtling towards tranquil worlds.

They are, to many, the vanquishers of Evil—the embodiment of all that is just true.

The Basic Tutorials

The five basic tutorials have been designed as a series that will teach you all the basics of operating in a Space Hulk. Each one demands, a different task from you, the Space Marine Captain, in the troop ship circling the Space Hulk.

Tutorial 1

The first tutorial is covered in the *Quickstart* section of the Game Manual. It covers basic movement, giving orders and firing.

Squad selected by the Emperor: 1 Terminator with Power Glove™ & Storm Bolter™

Tutorial 2

This tutorial gives you the opportunity to use a Heavy Flamer.™ Try using the Planning Screen to give all the movement orders and then the final fire order to flame the red target area.

Squad selected by the Emperor: 1 Terminator with Power Glove & Heavy Flamer.

Tutorial 3

Many Space Hulks contain items of historical or technical importance. In this tutorial you must locate the artifact and then return to the safe rescue area. Sometimes the items can be in the most well-guarded corners of a Space Hulk, so it is important to search every location.

Squad selected by the Emperor: 1 Terminator with Power Glove & Storm Bolter.

Tutorial 4

Tutorial 4 provides you with your first alien contact. Guide the Terminator through the Space Hulk to the teleporter. The Genestealers are out to destroy you, so use the Planning Screen to identify potential threats and co-ordinate a strategy. If you are confident that your controlling of the Terminator is good, then try playing the whole mission from the Viewing Screens.

Squad selected by the Emperor: 1 Terminator with Power Glove & Storm Bolter.

Tutorial 5

In this tutorial you control two Terminators. The Space Hulk is quite tight with a good many passages of Genestealers to get down. Attempt to move the Terminators into an area where they cover each others backs. In missions where the objective is to kill a certain number of the Genestealers, the most effective strategy is sitting tight in a secure area and waiting for the enemy to come at you.

Squad selected by the Emperor: 2 Terminators with Power Gloves & Storm Bolters.

The Advanced Tutorials

The Advanced tutorials are a large step from the five basic missions included in the Basic tutorials. All of them involve a minimum of one squad of Terminators. You will have to plan and give orders more often—there will also be times when taking control of a Terminator will be the only way out of a heated engagement with the Genestealers.

Think out every command you commit your Terminators to.

Tutorial 1

This is the first instance of the scanners failing to give an accurate display of the Space Hulk. The Planning Map will display any corridors in the vicinity of your squad. As you move around the Hulk more areas will be displayed. You have to find an artifact, whilst remaining alert to any signs of Genestealers. Use the Planning Screen to move the Terminators short distances—moving long distances in Hulks where the scan has been incomplete is very dangerous.

Squad selected by the Emperor: 3 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers.

Tutorial 2

Your squad is trapped. The marauding Genestealers sense your position. This is an all out fight. To be sure of reaching the rescue area you must give accurate commands and constantly monitor the views of each Terminator. Move as often as possible—do not get cornered into one area.

Squad selected by the Emperor: 5 Terminators with Power Gloves & Storm Bolters.

Tutorial 3

Use your squad's Heavy Flamers to destroy a genebank on the Hulk's lower side. This Space Hulk is heavily infested by Genestealers. Their movements are restricted by strong doors that only Terminators can operate. Use the doors to your advantage or you may fail.

Squad selected by the Emperor: 2 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers. 1 Terminator with Assault Cannon™ & Power Glove.

Tutorial 4

Your squad holds a defensive position. If the Genestealers breach through into the rest of the Hulk you will be held responsible for the inevitable carnage. Your squad must hold their position and kill thirty Genestealers. Stay alert and monitor the views from your Terminator's helmet cameras.

Squad selected by the Emperor: 4 Terminators with Power Gloves & Storm Bolters. 1 Terminator with Power Gloves & Heavy Flamer.

Tutorial 5

This mission will give you control of two squads. One of them should provide cover for the other as they make their way to the central computer room. The Hulk's interior is made up of narrow, twisting passages. Move with caution, having spaces in-between squad members is important, as it gives a necessary reaction time.

Squads selected by the Emperor: 4 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers. 2 Terminators with Lightning Claws™.

Tutorial 6

Your squad is trapped in the depths of a hostile Hulk. The thick shielding on the hull is preventing your distress signals from being heard. Die with honor, kill a minimum of 30 Genestealers. Move to secure areas and wait for the foul spawn to come to you.

Squad selected by the Emperor: 5 Terminators with Power Gloves & Storm Bolters.

Tutorial 7

You will need to build a strategy for this mission. Your squad must flame a room in the upper area of the Hulk. Providing cover with Heavy Flamers is very hard, due to their lack of ammunition and quick burn time. Use the Planning Map to assess the chosen route. Heavy Flamers have a tendency to pin a squad down, so use them as early as possible by targeting threats on the Planning Map.

Squad selected by the Emperor: 5 Terminators with Power Gloves & Heavy Flamers.

Tutorial 8

Flame the two infested areas using the trapped squad's weapons. Getting to the squad is easy, but once both squads are together the Genestealers will be alerted to your presence and will stop at nothing. Protect the Terminators equipped with Heavy Flamers. Do not take risks, there is too much at stake.

Squads selected by the Emperor:

Squad One: 5 Terminator with Power Glove & Storm Bolter

Squad Two: 2 Terminators with Power Gloves & Assault Cannons.

1 Terminator with Power Glove & Heavy Flamer. 1 Terminator with Thunder Hammer & Storm Shield. 1 Terminator with Chain Fist™ & Storm Bolter.

Space Hulk

Tutorial 9

Another Terminator squad is in action deeper in the Hulk. They are relying on your squad to keep the Genestealers from pouring into the fray. You must prevent no more than ten Genestealers entering the other areas of the Hulk. Move the squad to a position where they provide cover for themselves and are able to view every passage. Monitor the View Screens for signs of activity and intervene if necessary. Destroy a minimum of 60 Genestealers.

Squad selected by the Emperor: 5 Terminators with Power Gloves & Storm Bolters.

Space Hulk Original Missions

The Hulk showed up momentarily against the blackness of deep space. The command to fire the boarding torpedoes was echoed through the warp barges.

Light, emitted from a hundred jettison explosions, momentarily escaped into the darkness. As the torpedoes sped towards the drifting mass of metal, rock and ice the Terminators within them prayed for their deliverance.

The grinding of metal on metal signified contact with the alien craft—in a brief moment the Terminators of the Imperium were out of the transportation capsules and in the Hulk.

A previous scan of the Hulk showed large numbers of hibernating Genestealers. The only hope lay in that fact that the majority of the alien forces would take some time to awaken.

It was decided to launch a first wave to disable the Cryogenics or introduce lethal toxins into the lower reaches of the Hulk.

Suicide Mission

As the first wave of Terminators roam through the dark passages of the Hulk, the Genestealers attempt to leave the ship in escape pods. By flaming the Launch Control Room your squad will alleviate any threat of the Genestealers escaping and contain them—ready for destruction.

The Genestealers will begin to awaken as soon as you set foot in the Hulk. Your squad only has one Heavy Flamer, guard it well for without it your mission will fail. Move swiftly and cover entry areas.

Squad selected by the Emperor: 4 Terminators with Power Gloves & Storm Bolters. 1 Terminator with Power Glove & Heavy Flamer.

Exterminate

Following the success of the first mission it was decided to establish a beachhead at a junction in the Hulk. The squad moved to the area and started a sweep of the nearby rooms, it was finished with seconds to spare. By the time the Terminators reported the area secure, several hundred Genestealers were converging on their position.

You must establish a force that covers all entry areas leading into your position. Move to positions of utmost defensive capability and destroy thirty Genestealers. Be sure to give every Terminator a clear line of sight for firing.

Squad selected by the Emperor: 4 Terminators with Power Gloves & Storm Bolters. 1 Terminator with Power Glove & Heavy Flamer.

Rescue

The Cyber Altered Task (CAT) unit which entered the Hulk to perform detailed scans of the command systems has completed it's retrieval and is now attempting to reach the exit. the CAT has invaluable information stored in its memory banks. Two Terminator squads were sent in to re-

cover the CAT. On reaching the device a large concentration of Genestealers began advancing towards the area.

Use the second squad to create a diversion and prevent more enemy entering the area where the CAT rescue squad are retreating from. If the Terminator carrying the CAT is killed, another member of one of the squads will have to pick it up and continue to the rescue site.

Squads selected by the Emperor: 8 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers.

Cleanse and Burn

When the Genestealers launched the attack on the Terminator's defense perimeter, all hell broke loose. The battle was bloody and violent, with both sides taking heavy casualties. Due to ammunition shortages and weapon lock-ups the Imperial forces took 50% casualties. As the attack subsided it was noticed that a group of Techmarines with minimal life signs were moving away from the perimeter. Rather than allow the Chapters gene seed to fall into alien hands it was decided to sacrifice the Techmarines.

Your squads must make their way through the Hulk, to the rooms where the Techmarines are being held. One Heavy Flamer shot will put the captives out of the inevitable misery they will face at the mercy of the Genestealers.

As with all two squad missions, you have enough Terminators to give cover as you make the journey to the target. Proceed with caution, protecting the Heavy Flamers from enemy attacks.

Squads selected by the Emperor: 8 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers.

Decoy

The data collected from the CAT showed the commanders that the Terminator offensive had only destroyed a fifth of the total Genestealer population aboard the Hulk. With the Terminator's resources stretched to bare minimum and scanners showing that another wave of the Evil were awakening from their slumber, it was decided to hit directly at a nearby cryogenics cluster. This action will also draw the enemy away from a mission that is taking place in another region of the Hulk.

Protect the Heavy Flamers. Use the two squads to punch through the Genestealers defenses. Moving fast with no hesitation, locate the clusters, flame the rooms and fight your way to the rescue site in the lower reaches of this area.

Squads selected by the Emperor: 8 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers.

Defend

The previous mission had drawn the Genestealers away from an important area of the Hulk where the ducting could be used. The decision to pump lethal toxins through the ducting into the cryogenic clusters was taken. If this was effective the remaining Genestealers would be wiped out, leaving the Hulk free of infestation.

Use the squads to defend the ducting from attack. Position the Terminators in key positions where they can cover the passageways approaching the area. When the Terminators become established at their defensive positions the Genestealers will find it very hard to break through. Victory will be ours.

Squads selected by the Emperor: 8 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers.

One Squad Missions

Purify

This Hulk has a severe viral infection in one of its lower sectors. The four areas of contamination must be flamed. The arrival of your squad on the Hulk alerted the Genestealers hibernating on the other levels and they are now pouring into the very region you must get to. Use the three Storm Bolter Terminators to make their way to each target site, providing cover for the Heavy Flamers. The passages around the contaminated rooms allow Genestealers to ambush from behind, be wary of them attempting this.

Squad selected by the Emperor: 3 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers.

Blockade

A Cyber Altered Task (CAT) unit has completed a scan of the command centers. A member of your squad has retrieved the CAT and must now travel to the teleportation zone, where the CAT can be transported back to the Imperial Tech Priests. The remaining Terminators must prevent any Genestealers reached the lower corridor. If one does breakthrough your defenses it could endanger another mission in the upper regions of the Hulk.

Use one of the Terminators to provide cover and protect the back of the squad member carrying the CAT. Using the remaining Terminators, set up defensive positions in the large room, covering all three entrance areas.

Squad selected by the Emperor: 4 Terminators with Power Gloves & Storm Bolters. 1 Terminator with Power Glove & Heavy Flamer.

Stranded

Your squad has been split by a previous Genestealer attack. By regrouping you can coordinate an attack on the infested target area in the bottom of the Hulk. Position the Terminators at strategic points where they can cover any entry area. If you move the squad quickly and effectively the Heavy Flamer should be able to reach the target site with minimal resistance from the Genestealers.

Squad selected by the Emperor: 4 Terminators with Power Gloves & Storm Bolters. 1 Terminator with Power Glove & Heavy Flamer.

Lost Scrolls

Ancient pre-Imperial artifacts are often discovered on drifting Space Hulks. A CAT scan of the interior has shown what appears to be the scrolls of the prophet Venoxin, lying in one of the further regions of the Hulk. These scrolls will be an invaluable asset to the Imperium. Recover these items and you will have served the Emperor well.

Moving gradually, destroying any Genestealers you come across, make your way around the Hulk, searching every room. Enemy resistance will be considerable, so be on your guard. Do not give orders to move long distances without adequate cover, the Genestealers may have set ambushes.

Squad selected by Emperor: 5 Terminators with Power Gloves & Storm Bolters.

Advance

A long-range scan of this Hulk failed to give us an accurate display of the interior, this is due to the extremely thick hull—the result of eons spent in warp space.

As the Space Marine assault ship neared the stricken wreck a further scan detected Gene Banks on one of the Hulk's sub-levels.

Your squad must enter the Hulk and make its way to the Gene Banks where the justice of the flames must be used. Destroy any resistance you meet, for the mission to end you must kill ten of the foe. The Genestealers have prepared ambushes so be cautious when commanding the Terminators. Look to the Emperor for guidance and victory shall be yours.

Squad selected by the Emperor: 4 Terminators with Power Gloves & Storm Bolters. 1 Terminator with Power Glove & Heavy Flamer.

Swarm

Having entered the Hulk to provide cover for another mission, your squad is now faced with large numbers of Genestealers pouring into the area between you and the teleportation room.

You must study the entry areas of the Evil that are nearly upon you and then respond by giving precise movement orders. If these orders are executed precisely the mission outcome will be favorable. If your orders are too long or lack forethought then the squad will surely perish at the mercy of the Genestealers.

Squad selected by the Emperor: 5 Terminators with Power Gloves & Storm Bolters.

Two Squad Missions

Cleanse

The gene banks in this Hulk have been classified a menace to the Imperium. With two squads under your command, you must provide cover to the Terminators with Heavy Flamers. The Hulk is cavernous, with corridors stretching into infinity along both sides of this level. The foe enter from the opposite end of the ship, and could wreak havoc on

your mission if left to build up a sizable force. The Genestealers are able to travel fast, so when assigning orders do not overlook that they could be upon the squads in an instant. If at any time the foe break through your defenses, you must be ready to fend off their attack further up the corridor—be careless and you shall perish.

Squads selected by the Emperor: 8 Terminators with Power Gloves & Storm Bolters. 2 Terminators with Power Gloves & Heavy Flamers.

Fight to the Death

Having entered this vast Hulk on a CAT recovery mission your two squads have fallen foul of the Genestealer's menace. The Evil have broken through into the exterior passages and dislodged the recovery capsule from the hull of the Hulk. You are trapped, with no way off this infested monolith.

The two squads are positioned in the center of this sub-level. They are doomed, for even now the Genestealers have detected their presence and are converging on the area of the Hulk where your squads are trapped.

Using the central location of the squads to your advantage, move the Terminators into positions where each can watch over a corridor. If you move quickly and without hesitation then the Emperor's Will shall prevail and you may stand a chance of destroying ninety Genestealers.

Squads selected by the Emperor: 10 Terminators with Power Glove & Storm Bolter.

Covering Fire

A CAT scan of the Hulk has been completed. In order for an offensive to take place the data must be retrieved. One of your two squads is in possession of the CAT. To successfully travel the length of the Hulk you need to use every Terminator effectively.

In the first stages of the mission the Genestealers come from ahead of you, but as the squads progress through the ship so the menace begins to emerge from both sides. Be especially vigilant, for without the CAT data we may be unable to purge this Hulk in the future.

Squads selected by the Emperor: 1 Terminator with Power Glove & Storm Bolter. 4 Terminators with Chain Fist & Heavy Flamer. 3 Terminators with Chain Fist & Storm Bolter. 2 Terminators with Power Sword™ & Storm Bolter.

Rearguard

Once again the far reaching energy of the Genestealer's Hivemind has clouded our sensors. Proceed with caution for your goal rests far into this Hulk and to become surrounded by the menace would mean death.

Once the Magus has been destroyed move quickly to the teleporter. The Genestealers detect their terrible loss and evil drives them to acts of great vengeance. Provide adequate cover for the escaping Terminators.

This mission gives you the chance to choose the squads and the armaments you need. Due to the un-mapped nature of the Hulk you are unable to determine what weapons should be selected. Choose an array of close-combat weapons and Storm Bolters. Do not overlook the fact that the target needs to be flamed.

Deathwing Campaign

The Astropath's words hung in the air. Imperial Commander Lucerne Xavius III gave what could have been construed as a frown and slowly bowed his head. A broken distress call from a fellow Dark Angel

Space Marine had been detected—emanating from the planet Ma'Caellias in the Tolevi system. Every soul in the room knew of Ma'Caellias strong connections with the Chapters' history—and that the Death Wing had not flown in that zone for centuries.

Dark Angel Terminators last visited Ma'Caellia when a drifting Space Hulk carrying Genestealers threatened the peace of the region. The codex which records the Chapters history tells of a Captain Lithonius—a hero amongst his Terminator squads and a leader revered by the Chapter. Lithonius led a bitter attack against the hordes, first on the planet surface and then in the Sin of Damnation—the Hulk which had delivered the Evil to the area.

After a series of hard fought battles in the depths of the ship the giant monolith drifted back into the warp. The foe had been vanquished—along with the victors. All trace of Captain Lithonius and his Dark Angel Terminators disappeared with the Hulk.

Yet now, after many centuries had passed, a call was being made from the very location Lithonius had departed from. Could the Hulk have traveled through warp space and arrived back at its point of departure? The matter of the Hulk was irrelevant. The lives and souls of brother Space Marines hung in the balance. A force *must* be dispatched to discover the true source of the signal—once again the Death Wing would fly in the Tolevi system.

Menacing Images

Having landed on Ma'Caellia, a preliminary scan has detected what looks like a network of underground passages and caverns. Sensors have also detected some form of alien presence. The Death Wing Terminators must enter this complex and search for any signs of their lost

brothers. As the spear-head of this campaign your actions may dictate the future course of events. Be on your guard.

Squad selected by the Emperor: 5 Terminators with Power Glove & Storm Bolter.

Witch Hunt

The spearhead squad has returned—victorious. However, their spirits have been tarnished by the force of enemy Psykers operating from somewhere within the complex. Rather than risk further damage to our fellow brothers we are sending Inquisitor Sabathius to investigate the mystery. Sabathius's own psychic defenses will protect him from any foul mind powers thrown at him—as his Captain you must alert him to any nearby Evil. Guide the Inquisitor through the complex to the teleport area. His mind will search areas not seen by the eyes. Await his report.

Squad selected by the Emperor: 1 Terminator with Power Glove & Storm Bolter.

Baneful Icon of the Foe

Inquisitor Sabathius has detected a concentration of Evil somewhere near the top of the complex. The icon is imbued with the very essence of the Hivemind, emanating palpable waves of psychic evil throughout the Hulk. The power is still too great for Terminators to enter. Command Inquisitor Sabathius in the purging of the statue. The Genestealers will stop at nothing to destroy the solitary Terminator invading their sanctuary. After the target has been destroyed Sabathius must be guided out in the shortest possible time.

Squad selected by the Emperor: 1 Terminator with Power Glove & Storm Bolter.

Deliverance

Having purged the complex of the Psykic menace, Inquisitor Sabathius found the retaliating Genestealer force too overwhelming. After an intense fight the Inquisitor found himself in a room towards the top of this level. On examination of his armor he discovered serious damage had been inflicted by the Foe. His life support system is in danger—time is running out. By closing the doors of Genestealer entry, you will allow the Inquisitor's safe passage from the area to a point of rescue. Sabathius is the fifth member of your squad and can be used in an offensive capability. The Genestealer presence remains high. In the name of the Emperor—be vigilant.

Squad selected by the Emperor: 5 Terminators with Power Glove & Storm Bolter.

Extrication

The previous mission did not stem the onslaught of the Evil. The survivors of the Deliverance mission are secure but need to reach the haven of the rescue area. Clear the level so that a rescue can take place. One squad must provide cover against the Genestealer attacks, allowing the other squad of Terminators to make their way through the Hulk. Proceed with caution. Do not underestimate the evil of the foe sent to test us.

Squad selected by the Emperor: 5 Terminators with Power Glove & Storm Bolter + the survivors of Deliverance.

Purge

All hope has been lost. With the tide of Evil that flows against us we can offer only one form of resistance. A squad must enter the complex and flame the sub-level control room. With the systems damaged all levels below this will become shut off from the world—banishing the

Genestealer for eternity. Guard the Heavy Flamers well for the foe will detect the malice in your movements.

Squad selected by the Emperor: 2 Terminators with Power Glove & Storm Bolter. 3 Terminators with Power Glove & Heavy Flamers.

After flaming the control room, all Imperial units on Ma'Caellia were withdrawn to the orbiting Space Marine troop ship. On the command of the Emperor, Exterminatus was performed on the planet. The largest concentration of hits was on the complex where the search for Captain Lithonius began. In a five minute period, twenty virus bombs fell on the site—reducing the area and a large sub-area to ash. Never again would the evil of the Genestealers foul Ma'Caellia.

Far below, the explosions on the planet cast brief orange circles into the atmosphere. Imperial Commander Xavius stood on the bridge of the Manchiva looking out on the maelstrom being caused beneath him. The toil of battle had taken its toll on his remaining squads. Even now the Tech Priests were working to preserve the Chapter's gene seed.

So the Genestealers had re-entered the zone. But how? There was no sign of a Space Hulk or the elusive distress call that had brought the Death Wing to the Tolevi system. However, the sheer number of Genestealers on Ma'Caellia disproved any theories of a freak colony or settlement, the Evil was brought to the system—but on what?

At that instant a Hulk flashed out of warp space into the shadow of Ma'Caellia's dark side. Moments later Imperial Commander Xavius III gave the order to board the Hulk known only as the Sin of Damnation—the Death Wing's vengeance had begun.

Ante Chamber

Under your command, the first squad in this accursed Hulk must establish a beach-head. Fight your way to the control room. Flaming the correct

area will shut off any mechanisms controlling access points to lower levels. This is a vital mission, the fate of the campaign and Captain Lithonius is in your hands. Our sensors have detected flammable material in the corridor approaching the target. Do not use the Heavy Flamer until in the control room—to do otherwise will risk the lives of your squad members.

Squad selected by the Emperor: 4 Terminators with Power Glove & Storm Bolter. 1 Terminator with Power Glove & Heavy Flamer.

Perimeter

The previous mission served as a reminder that the Genestealers are more than just a menace—they are a worthy opponent. The sheer number of the Evil that were encountered have led us to abandon that area as an entry point. The Hulk has been scanned and another possible area found. Secure strategic points and establish an assault perimeter for your fellow brothers to enter by. Be on your guard, for the Genestealers know of our presence. Go forth and let your weapons preach terror to the Hell's foe.

Squad selected by the Emperor: 5 Terminators with Power Glove & Storm Bolter.

Funeral Pyre

This sub-level of the Hulk is being used to house the Genestealers brood. Four specific targets have been identified. Unfortunately the walls of this level are emitting some flammable gas into the passages—any Heavy Flamer hit will continue to burn. If used correctly this phenomenon could aid you in the mission—if a Heavy Flamer shot it used without thought your whole squad may become trapped. Exercise caution at all times. Only through your commands can the squad succeed—plan carefully. May the might of the Emperor go with you.

Squad selected by you.

Testament To Honor

Leaving the upper levels burning, the Imperial forces push deep into the dark depths of the Hulk. Here scanners are useless. Only the exploring movements of a squad can map out the level. Work through the area to the teleport location. The objective is simple—purge the Genestealers from this sector.

Squad selected by you.

Descent

Fight through this sector destroying any Genestealer that crosses the path of your weapons. We are currently delving into the very core of the Sin of Damnation. This is a most important time. If the Evil ones are allowed to break through all our efforts so far might have been in vain. Our sensors have detected large objects of metallic composition. These may be blast doors. If the information is correct then an Assault Cannon will be needed to gain entry.

Squad selected by the Emperor: 2 Terminators with Power Glove & Storm Bolter. 2 Terminators with Lightning Claws. 1 Terminator with Power Glove & Assault Cannon.

Web of Flames

One of the Terminator squads participating in the destruction of the sub-levels have discovered an area being used for gene bank storage. Take command of two squads—the layout of this level is such that careful, planned use of every Terminator is a necessity. Using the cleansing force of the Heavy Flamers, purge the Evil from its bed of spawning. Exit the area after completing the objectives.

Squads selected by you.

To the Emperor

We are nearing the inner sanctum of the Evil's domain. Our scanners indicate a Brood Brother resides within the confines of this sector. He can be found flaming one of the lower chambers. Seek and destroy this fiend. Until this point our campaign has been fruitless—even now the Emperor debates the idea of retreating. If your squads can eliminate the lieutenant of the Patriarch many words of glory shall be written in the Chapter's codex. If you fail the Emperor shall surely abandon the search for Captain Lithonius—and the Death Wing may taste the bitterness of defeat. This level is riddled with Evil. Careful strategy shall get you through—rash decisions will bring death.

Squad selected by the Emperor: 8 Terminators with Power Glove & Storm Bolter. 2 Terminators with Power Glove & Heavy Flamer.

Search for Evil

The Emperor has granted the Death Wing one final attempt at gaining a foothold. One squad has been deployed below the level of the Brood Brother, in the hope of finding some direction. The Imperial Commanders know that before Captain Lithonius boarded the Sin of Damnation, a CAT device was sent in to map the Hulk. If these blueprints can be found the campaign will benefit from the data. Squads entering the Hulk should study the area before embarking—leaving the Terminators free to get on with battling the menace of the Genestealers. As we near the area of the Hulk where the Patriarch resides, so the Evil's presence will be stronger and more desperate.

Squad selected by you.

Seed of the Enemy

The source of the Brood has been discovered! A vast complex of gene banks is being controlled from two rooms in the center of this sub-level.

If flamed correctly we could stop the flow of Evil spawning from this accursed place. The foe will try to stop your squads from entering this place of foulness. Only under your concise commands shall the squads prevail. Using Storm Bolters as cover, maneuver a Heavy Flamer into the passageway separating the target rooms—a strike to the very heart of the foe will weaken the enemy's grip on the Hulk and push us one step closer to victory.

Squad selected by you.

Tech Support

The righteous cleansing of our flames was not enough. The Evil lives on. Our Imperial Commanders have instructed Tech Marines to aid us in the destruction of the Genestealers. A squad of Tech Marines has assessed the target areas—their conclusion was that mines of destruction must be used. Unfortunately their armor does not allow them passage through the Hulk. Under your command a squad of Terminators must once again enter the level and place an explosive charge in each gene bank. With the destruction of this area we will seal the Genestealers' fate. Look to the Emperor for inspiration.

Squads selected by you.

Ultimate Firepower

We must seize the victory that is now in reach! Having left the smoldering remains of the Genestealers' legacy behind us, we now go in search of the source of the evil burning in the minds of the minions that combat us. Using the Assault Cannons as justice, your squad must seek out any sign of the foe and eliminate them from this level that once echoed to the sound of Captain Lithonius' squad. A battle was once fought here. Cases of ammunition lie scattered on the floor, their dull grey protection scratched by the rampaging Genestealers that once pre-

vailed on this level—use the ammunition well. The end is near brothers!

Squad selected by the Emperor: 8 Terminators with Power Glove & Assault Cannon. 2 Terminators with Power Glove & Storm Bolter.

The Echelon of Foul Spawn

Into the core of this Hulk you must travel. The Evil knows no bounds in these caverns of doom, only the just and true shall survive. We believe the insignia and crude fashionings on the walls are indicating the entrance to the realm of the Patriarch. Use the Heavy Flame to purge the corridor leading to the top of this level—there must be none of the foes behind us when we plunge into the center of the evil that awaits us. The cavern immediately after the entrance area contains heat vents from the reactor deep in the aft of the original vessel. Centuries ago the heat would have been in vapor form, now only flames spew forth from the nozzles, proceed with caution. Scanners indicate icons of demonic value to the Genestealers are situated within this level—destroy them.

Squad selected by you.

Honor on Trial

A scan from outside the Hulk indicates the Patriarch's presence is close. The Genestealer force has taken one final stand against the might of the Imperium. They can sense their own defeat. At the perimeter of the inner sanctum we must face them—crush the Evil now and Lithonius' honor may be saved, his signals are strong now. Command your squad well, storm through this level using all available force. A teleporter awaits on the far side of this area, move at least one Terminator to this area and our battle shall continue.

Squad selected by you.

Final Confrontation

Victory is in our grasp—do not allow it to slip through your hands. The Patriarch must be destroyed. Summon all your Terminators—let the Genestealers know the might of the Imperium. Within this maze of corridors hides the root of evil. The Death Wing shall know no finer moment than the cleansing of the Sin of Damnation. Go now—and let your Storm Bolters heal the gaping wound that is Evil.

Squad selected by you.

Avenged

With the Patriarch destroyed only remnants of the Genestealer force remain. The distress signal is stronger. At last our scanners can be taken into the depths of the Hulk and the source of the signal located. After a brief time the sensors indicate a cavernous area further below—a faint reading shows their to be a life-form within the catacombs of the cavern. Lone Terminators are dispatched to discover the truth behind the mysterious distress calls that brought the Death Wing to the Tivoli system.

Squad selected by the Emperor: 1 Terminator with Power Glove & Storm Bolter.

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Ultima[®] VII

THE BLACK GATE™

Installation

1. Insert the CD-ROM into your CD-ROM drive.
2. At the DOS prompt, type the letter of your CD-ROM drive then <Enter>.
3. Type CD\ULTIMA7 <Enter>.
4. Type INSTALL D: C: <Enter>. Substitute the correct drive letters for your CD-ROM and hard drives.
5. Once installation is complete, type ULTIMA7 <Enter> to play.

Voodoo

Ultima VII uses a special memory manager called "Voodoo." This manager, created by ORIGIN, comes with your Ultima VII game. Voodoo will run on any 386SX or higher IBM PC compatible computer. It uses extended memory, so it can co-exist with the HIMEM.SYS driver. However, HIMEM.SYS is not necessary for Voodoo memory to function.

Expanded Memory (e.g., QEMM, 386MAX or EMM386).

The other popular memory manager, called Expanded Memory (EMS), is not compatible with Voodoo. If you are using an expanded memory manager (such as QEMM, 386MAX or EMM386) you must remove it to run Ultima VII. If you do not know how to do this (and if the following instructions don't help you), please call ORIGIN Customer Service for assistance. If you are familiar with this process, disable the EMS memory manager. The acceptable minimum configuration is an empty AUTOEXEC.BAT and a CONFIG.SYS with the lines:

```
FILES=20
```

```
BUFFERS=25
```

```
DEVICE=C:\MOUSEMOUSE.SYS*
```

* Your mouse driver may be located on another path. Replace C:\MOUSE with the correct path if necessary.

If you wish to retain your original CONFIG.SYS file, refer to your DOS manual for how to copy it to another file name before making the changes.

HIMEM.SYS or XMM.

As mentioned above, an extended memory manager (XMM) such as HIMEM.SYS (which is compatible with MS-DOS 3.3 or higher) is compatible with Voodoo, and does not require disabling.

Disk Caches

If you have more than two megabytes of RAM, a disk cache will improve upon extended memory and increase the speed of the game. However, if you have a disk caching program that caches the floppy drive, we recommend that you disable the floppy caching before installing or running the game.

Available Memory

Your computer must have at least 640K of RAM plus one megabyte of extended memory to play ULTIMA VII The Black Gate. Regardless of the amount of RAM your computer possesses, there must be 524,000 bytes free to run the game. Sound and speech options can push this total to 561,144 bytes of DOS memory.

To find out how much free RAM your computer has before installation, run the DOS program, CHKDSK, by typing "CHKDSK" at the root directory prompt (e.g., C:\>CHKDSK). On some machines, CHKDSK may be located inside the \DOS directory. When you run the program, the last line of the information presented tells you how much free RAM there is. For example, the last line might tell you that the system has 565,239 bytes free.

If you have less than the required amount of free RAM, you will not be able to run the game until additional memory is freed. If you are not familiar with this process, please call ORIGIN Customer Service.

Freeing RAM

If you are familiar with this process, you can:

- Remove any TSRs and disk caches from your configuration.
- Use the DOS=HIGH command if you use DOS 5.0 or above.
- Remove from your AUTOEXEC.BAT and CONFIG.SYS files any memory-resident programs that are unnecessary for system usage. You can alter these files with the text editors included with MS-DOS. Consult your DOS manual for information on how to do any of these.
- Create a floppy boot disk (see the **Problems with the Game** section for how to do this). Be sure to include in your CONFIG.SYS file the information on page 1.

Never delete your AUTOEXEC.BAT or CONFIG.SYS files completely, for without them, your computer will not function as you expect it to.

Reinstalling

At some time you may want to reinstall the game (generally, to change or add a sound card, or to adjust the IRQ/DMA settings). Follow these directions. (You won't need to use the CD-ROM the program is on.)

1. Type the letter of the hard drive where you have installed Ultima VII.
2. Change directory to where the Ultima VII files are (e.g. type CD\ULTIMA7 <Enter>).
3. Type INSTALL <Enter>
4. Follow the instructions for changing any of the Ultima VII settings.

Troubleshooting

Listed here are a few common problems and their solutions.

Speech fails to work after playing for only a short while.

You may have chosen an incorrect IRQ setting for your sound card. Reinstall the game from your hard disk to change the IRQ.

Speech skips lines of dialogue.

You may have an IRQ conflict. This means that another card is operating on the same IRQ as your sound card.

Ultima VII fails to load or run properly.

You may not have enough free RAM. Run CHKDSK to determine your computer's available RAM. Free up RAM if necessary.

You may have a memory-resident TSR program that conflicts with the game. Boot the computer from a DOS system floppy disk or remove memory-resident programs before running the game. See Voodoo earlier in this manual and Making a Floppy Boot Disk at the end of this manual.

You may need to remove your expanded memory manager.

You may have filled all free space on the active disk drive.

The mouse pointer doesn't respond properly.

Ultima VII supports the Microsoft Mouse and Microsoft Mouse Driver, version 7.0. Some other mouse brands may not be compatible.

The game runs too slowly.

Your hard drive may be fragmented. Run an optimization program, such as DOS 6's DEFRAG.

You may be able to use a disk caching program. If you have 4+ megabytes on your machine, a disk caching program can speed up your game.

None of the suggestions seem to help.

Refer to ORIGIN Technical Support information at the end of this manual.

Getting Started

To load Ultima VII, go to the drive that contains your game, then go to the directory containing your game (e.g. CD\ULTIMA7). Type ULTIMA7 to start the game.

After the game loads, an introductory sequence automatically begins, but it may be skipped by pressing Escape. Then the main menu appears, listing four options:

VIEW INTRODUCTION

START NEW GAME

JOURNEY ONWARD, and

VIEW CREDITS

To select one of these options, single-click it with the mouse or use the arrow keys and press Enter. To exit the introduction, character creation or credits, press Escape.

View Introduction

The introduction reveals how and why the Avatar™ has returned to Britannia. Information presented here is very relevant to your quest. This scene is the same one that you see the first time you run the game.

Start New Game

This is where character creation takes place. It must be selected the first time you play the game. When you are asked to name your character, type the desired name (up to 14 letters) at the flashing cursor and press Enter. Next, you determine the gender of your character. With the mouse or space bar, select the gender of your choice and press Enter.

Journey Onward

After you first create a character, this option takes you to the beginning of the actual game. In future sessions, this option returns you to your last saved game.

View Credits

This option lists all of the many people who worked on Ultima VII.

Introductory Walkthrough

This section guides you through the first few minutes of Ultima VII. It doesn't reveal any deep secrets, but it does introduce you to all of the basic actions you may perform in the game. It assumes you are using a mouse, which is highly recommended by both Iolo and Lord British.

The scene opens as you, the Avatar, step out of a red Moongate into the Britannian town of Trinsic. Before you stand your old friend Iolo and the stable master, Petre.

Conversations. When Iolo addresses you, read each line of text and then click the left mouse button ("left-click"). Continue until Iolo has finished speaking, at which point he automatically joins your party.

Next, Mayor Finnigan approaches you. Again, left-click after each line of text. Finnigan asks you to investigate the Trinsic murder. Position your mouse cursor (represented by a green arrow) over the word "Yes" and left-click to answer him.

Finnigan asks if you've visited the stables. Put the cursor on the word "No" and left-click. He suggests that you visit the stables and you can begin moving around.

Moving. You (the Avatar) are always in the center of the screen. The stables are through the doorway to your north (i.e., toward the top of the screen). Position the cursor so that it points upward (northward) and right-click. You step to the north. Continue moving the cursor and right-clicking until you enter the building.

Examining Things. When you (the Avatar) enter the stables the roof disappears, allowing you (the player) to see inside. A horrible murder has occurred! You can look at each object in the stables by left-clicking on it. Place the cursor over the gold key (lying just west of the body) and left-click. The word "key" appears (to identify it, if you couldn't tell what it was).

Perhaps the key will provide a clue. Move the cursor to the left of the key and click the right mouse button twice ("double-right-click"). You walk to that location. *Notice that moving around is accomplished by right-clicking, and all other actions, like talking and examining objects, are accomplished by left-clicking.*

Using Things. You don't want to be disturbed during this investigation, so close the door by placing the cursor on it and double-left-clicking.

Taking Things. The key may be a clue. Place the cursor so that the tip of it overlaps the key. Click and hold down the left mouse button ("left-click-and-hold"). As you continue holding, move the cursor around. If the mouse was properly positioned, the key is attached to the cursor. Don't let go yet!

To give yourself the key, move the cursor (and key) over your character and release the left button. The key will vanish.

Examining Yourself (and other things). Find out if you have the key by double-left-clicking on your character. An image of your character appears (your Inventory Display), with blue lines indicating the locations of equipment and clothing. The key is in your right hand.

Put the cursor on the large red check mark and left-click-and-hold. This lets you move your inventory window; move it to the upper right corner of the screen by dragging it in that direction. Release the button when you are satisfied with the new position. You can remove your Inventory Display by left-clicking on the red check.

Talking to People. Perhaps your companion Iolo knows more about the murder. To speak with him, double-left-click on him. His portrait appears, along with speech. Responses you may select appear in the center of the screen. Left-click

“Murder” to discuss the murder with him.

When you are finished talking to Iolo, left-click on “Bye” to end the conversation.

Further Investigations. There are other things you might try while inspecting the stables. It’s a good idea to examine everything. Be sure to check out the dead gargoyle at the north of the stables, as well as the bag lying on the ground. You can see the bag’s contents by double-left-clicking on the bag. Try removing items from the bag, such as the torch. Once the torch is on the ground, you may double-left-click on it to light it. Double-left-click on it again to extinguish it. (Note that while the torch is lit you cannot move it into any container.) In general, open the inventory of everyone in your party and both single- and double-left-click on every object. You may discover all sorts of handy things.

When you’ve finished here, you’ll want to leave. You can walk continuously by right-click-and-holding. You always walk in the direction the cursor points. The farther the cursor is from the center of the screen, the faster you travel. Luck be with you as you journey onward!

Commands

Ultima VII is an entirely mouse-driven game. All action commands are controlled by the two mouse buttons. However, for those who do not have a mouse, all commands may also be performed from the keyboard.

Using the Mouse

The key point to using the mouse is knowing that the left button is used to perform actions involving the hands, and the right button is used to perform actions involving the feet. The mouse will generally appear in one of two forms: a green, straight arrow for normal activity or a red, jagged arrow for combat.

	Left Button	Right Button
Click	Look	Take One Pace
Double-Click	Use/Talk/Attack	Find a Path
Click-and-Drag	Move Items	Walk Continuously

Moving Your Character (Right-Clicking)

To make yourself walk, simply point the arrow in the direction you wish to travel and right-click-and-hold. The farther the arrow is from you, the longer it gets, and the faster you travel. To stop moving, release the right button.

When danger is near, your speed is limited in proportion to your dexterity.

Double-right-clicking on a point on the screen makes you walk to that location, providing no obstacles bar the way (e.g., a locked door).

Manipulating Objects (Left-Clicking)

The left mouse button is used to look, move, use or attack.

Look. To bring up a short description of an object, left-click on it.

Move. Many objects may be moved from one location to another. To move something that is portable, left-click-and-hold on the object. The cursor changes to a hand to indicate that you are holding an object. Move the cursor over the desired destination and release the mouse.

Releasing the item over a character places the item inside that character’s inventory. If his Inventory Display is open, dropping the item on a container within the display places the item inside of that container (see Inventory Display).

If a container is not in anyone’s inventory, it must be open (its display visible) to drop an item into it. If an object is too heavy or too large to fit inside a container, or if you can’t reach it, a message saying so appears in red above the object.

Use. To use an object, double-left-click on it. Each type of item functions uniquely when used. For example, using an unlit lamp will light it; using a lit lamp will extinguish it.

Some objects may be used on other objects (e.g., a bucket on a well). Double-left-clicking on such an item turns the cursor into green cross-hairs. Moving these to the target item and left-clicking uses the first item on the second.

Double-left-clicking on many usable objects brings up a display that provides more information about that object. For example, double-left-clicking on a chest brings up a display that reveals the contents of the chest. The contents may then be moved and manipulated like any other object within the world. The bodies of fallen foes are treated like chests for these purposes.

In addition, the displays themselves may be moved in the same manner as moving an object — left-click, drag, release. Single-clicking on the red check at the left side of the display or pressing Escape will close that display.

“Using” a person has several meanings. Double-clicking on a person while not in combat will initiate a conversation with that person. (For more information on how conversations work, see **Screen Display**.) However, doing so while in combat mode indicates that you wish to attack that person. If you are clicking on a member of your party while in combat mode or while your Inventory Display is up, that member’s Inventory Display will appear.

“Using” the Avatar will bring up your character’s inventory (see **Inventory Display**).

To use a cart, double-left-click on a chair in the cart. Once all of the characters are seated, move the cart as if you were moving the Avatar. A boat operates under the same principle, but you must double-left-click on the sails instead of a chair. To stop using a cart or boat, double-left-click again on the chair or the sails, respectively.

Attack. While in combat mode, double-left-clicking the cursor on another person who is not in your party or on an object initiates an attack on that person or object. If you are in combat mode, and in any attack mode other than Manual Mode (see **Combat**), you automatically attack any nearby hostile foes.

Using the Keyboard

Though using a mouse is highly recommended, the keyboard may be used as a substitute if you have no mouse installed.

Walking. The arrow keys may be pressed to walk one step in the desired direction. Holding the shift key down while pressing an arrow key will allow the Avatar to take three steps instead of one. If Numlock is on during play, every step will be a triple one.

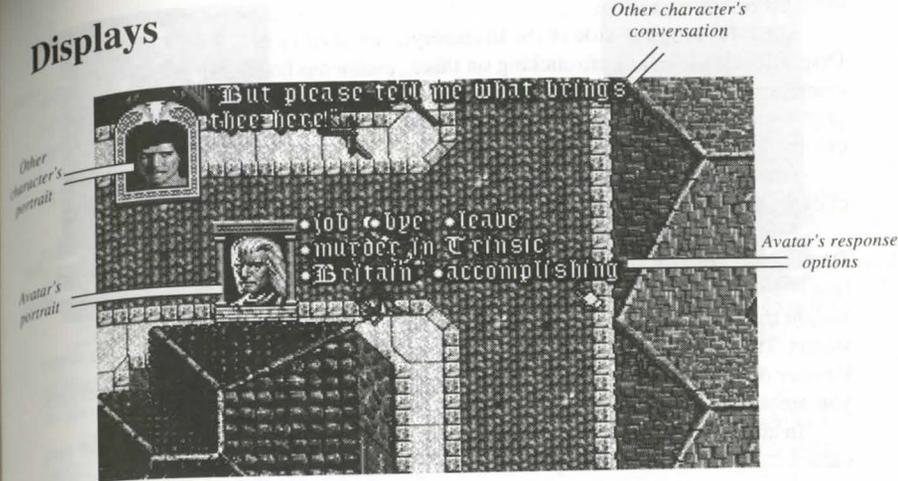
Manipulating Objects. Press Spacebar to make the hand cursor visible. Now the arrow keys will move the cursor instead of the Avatar. Holding down Shift will increase the rate at which the cursor travels.

Treat Control as if it were the left mouse button. For example, a single "click" identifies an object, while a "double-click" uses it.

If you are in any attack mode, there is no red cursor to remind you, but "double-clicking" still initiates an attack.

Key	Function	Mouse Equivalent
C	Turns combat mode on and off	Left-click on the Dove/Sword icon in the Avatar's Inventory Display.
I	Opens up the Inventory Display of each party member, beginning with the Avatar.	Double-left-click on each party member.
Z	Opens up the Statistics Display for each party member, beginning with the Avatar.	Left-click on the heart icon within the Inventory Display of each party member.
S	Opens up the Save/Load Window.	Left-click on the disk icon in the Avatar's Inventory Display.
A	Turns all audio effects on and off.	Left-click on both Sound Effects and Music in the Save/Load Window.
V	Displays a scroll showing the version number of your copy of Ultima VII	(None)
Alt-X	Exits Ultima VII and returns to DOS.	(None)
H	Changes the "handedness" of the mouse by swapping the functions of the left and right mouse buttons. The left button is now used to move around, and the right button to manipulate objects. This "H" toggle affects only the mouse, not keyboard commands.	(None)
Esc	Closes Save/Load window, if it is open. If Save/Load is not open, closes all open displays and windows.	Left-click on each large red check.

Displays



Screen Display

In Ultima VII, the entire screen is devoted to displaying the map. Any messages or other relevant information appear over the game map, at various places.

During conversations, a portrait of the character you are speaking to appears in the upper left corner of the screen, with all of his text appearing to the right of the portrait. If any other characters interject, their portraits appear in the lower left corner of the screen with their text just to the right of their portrait. During conversations, your portrait appears in the center of the screen, with your word options appearing to the right of your portrait. Selecting a word or phrase from your options initiates a response from the character you're talking to.

Text that identifies an object appears just above that object. Text that appears just above a character icon means that that particular character has spoken.

Inventory Display

When you double-left-click on yourself, your Inventory Display appears. This is also true of any character in your party, as long as you have first brought up your own Inventory Display.

Dove/Flaming Sword. At the left of the Inventory Display is either a dove (non-combat mode) or a flaming sword (combat mode) icon. Left-click on this icon to switch from one mode to the other. During play, the color of the cursor arrow indicates whether you are in non-combat mode (green) or combat mode (red).

Containers. Double-left-clicking on any container in your inventory reveals the

contents of that container.

Disk. On the right side of the Inventory Display is a disk icon. Left-clicking on this brings up a window that permits you to load or save a game, turn sound and music on and off, or exit the game.

Heart. Below the disk is a heart. Left-clicking on this icon reveals the Status Display.

Numbers. At the bottom of the Inventory Display is a number next to another number (e.g., "24/36"). The number on the left is the weight that the character is carrying expressed as stones. The number on the right is the maximum number of stones that the character can carry. When buying items from shopkeepers, you are told if an item is too heavy for you to carry.

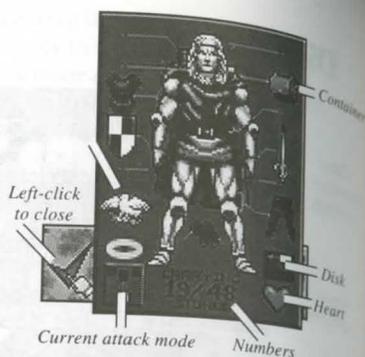
In addition to weight, items also have volume. Sometimes you are told that you cannot carry an item because your hands or your packs are full. By rearranging your equipment (e.g., putting a weapon in your pack or buying another backpack), you may be able to carry the new item.

Current Attack Mode and Protected Halo are described in **Combat**.

Spell Book

Double-left-clicking on the spell book in your Inventory Display brings up its display. To cast a spell, double-left-click on that spell's icon. To select a spell without casting it, left-click on its icon in the spell book. The buckle on the bookmark moves to that spell.

There are six spells (Fire Blast, Paralyze, Lightning, Explosion, Death Bolt and Sword Strike) that may be cast in combat by double-left-clicking on a target as if attacking it. If the spell book is in your hand and the book was closed while that spell was selected (the bookmark's buckle was on that spell), using the mouse to attack causes you to cast that specific spell (as long as you have the spell points and reagents necessary). Also, if you (the Avatar) are not in Manual Mode and have your spell book ready (in hand), you cast spells automatically.



Status Display

The Status Display lists a character's current attributes, both primary and secondary, and whether that character is unconscious, poisoned, charmed, hungry, protected, cursed or paralyzed.

Primary Attributes

Strength, Dexterity and Intelligence are the primary attributes, with values ranging from range from 1 to 30. The higher an attribute is, the better. The remaining attributes are secondary statistics.

Strength determines several things, including how much you can carry, how much (if any) additional damage you do with a hand-to-hand weapon, and how many Hits you can take before dying.

Dexterity affects such things as how fast you are and how well you pick locks. Faster characters can move and attack more often than slower ones. Dexterity determines your Combat skill.

Intelligence determines several things, including your Magic skill and how well you cast certain spells.

Secondary Attributes

Combat. Your base combat skill is derived directly from your dexterity. It determines how likely you are to hit in combat with normal weapons.

Magic. Your base magic skill is derived directly from your intelligence. It determines the maximum number of Mana points you can have.

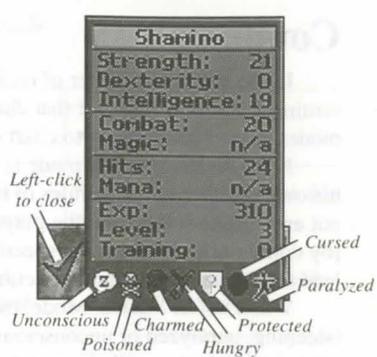
Hits are derived directly from your strength. They are reduced by damage, poison and hunger. When your Hits reach 0, you are unconscious.

Mana records the current number of Mana points you have at that moment. The less active you are, the greater the rate at which Mana points return.

Level indicates your overall prowess. As you gain experience (see below), your level increases. As your level increases, you have the opportunity to raise one or more of your primary attributes. In addition, Hits usually increase as your level does.

Experience points (Exp) are a measure of your accomplishments. Every time you solve a quest or slay a monster, each member of your party gains experience points. After earning the required number of points, a character's level increases.

Training points are accrued with experience points. To increase strength, dexterity, intelligence, combat or magic, you must find a trainer who teaches expertise in that specific attribute. If you pay the trainer's fee and "trade in" training points (representing your study and practice with the trainer), the attribute you are concentrating on increases.



Combat

In the lower left corner of each character's Inventory Display is an icon representing the attack mode for that character when he is in combat. The following attack modes are available (refer to chart on opposite page).

If the Avatar's attack mode is anything but Manual Mode, he selects targets on his own (according to the rules of his attack mode) and fights those opponents without any further input from the player. The player may override control at any time (by double-left-clicking on a specific target to attack it, right-click-and-holding to lead the Avatar in a certain direction, etc.).

When not in Manual Mode, the Avatar does not select fleeing or disabled (sleeping, paralyzed or unconscious) targets on his own, and breaks off an attack once any of these conditions are met. To make the Avatar pursue an enemy to the death, double-left-click on the opponent after it has already fled or been disabled.

Flee Mode

If a party member is seriously injured, he may flee. Neither the Avatar nor party members in Berserk Mode will ever flee. Normally, fleeing characters might drop some of their possessions. Party members who have been set to Flee Mode will make an orderly retreat and will not drop any of their possessions.

Protected "Mode" and Protect Mode

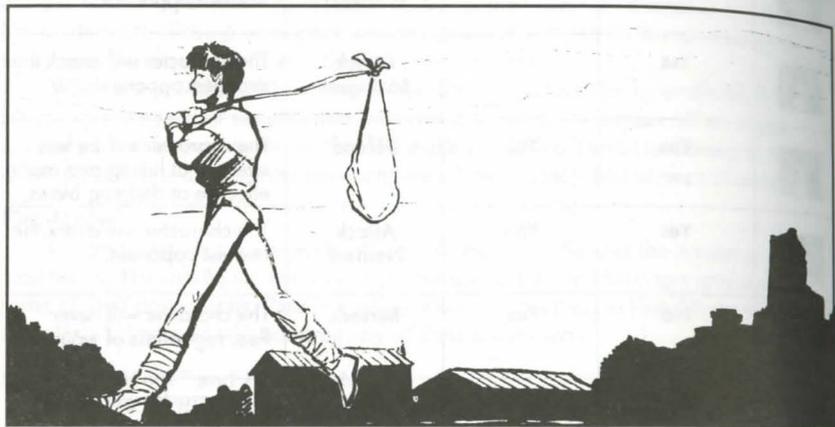
You may designate a party member to be protected by clicking on the "halo" just above that character's attack mode icon. It turns gold, indicating that this party member is to be protected. Only one person in the party may be protected at any one time.

Note that if you have not designated any party member to be protected ("turned his halo on"), an injured party member may turn his own halo on and call out to other party members for protection. Any party members that are in Protect Mode will follow this injured character around and attempt to protect him. Effectively, any protecting character's main concern is for the welfare of the protected individual, and he will fight anyone who attacks the protected character until there is no longer a threat.

Icon	Available to Avatar	Available to Other Party Members	Attack Mode	Description
	Yes	No	Manual	You may direct each combat action.
	Yes	Yes	Attack Weakest	The character will attack the weakest opponent.
	Yes	Yes	Attack Strongest	The character will attack the strongest opponent.
	Yes	Yes	Defend	The character will be less effective at hitting and more effective at dodging blows.
	Yes	Yes	Attack Nearest	The character will attack the nearest opponent.
	No	Yes	Berserk	The character will never flee, regardless of wounds.
	No	Yes	Flee	The character will retreat from any opponents in an orderly fashion.
	No	Yes	Random	The character will attack a random foe.
	No	Yes	Protect	The character will attempt to protect the party member in Protected Mode.
	No	Yes	Flank	The character will attempt to flank the enemy (to either side).

FELLOWSHIP

as written by Batlin of Britain



i. Salutations to the Traveller

Good morning to thee, gentle friend and traveller!

No matter what time of day it might be when thou art reading this — no matter what the hour of the clock — I say good morning to thee because this very moment brings to thee the coming of the dawn. The dawn, as everyone knows, is the moment when illumination comes. The dawn marks the end of the long dark night, and a new beginning. It is my humble hope that these words may be for thee a dawning, or at least, a type of awakening.

I call thee “traveller” no matter if thou hast never left thy home town, no matter if thou wilt never again leave thy room, because all of us are travellers. I call thee traveller for truly all of us travel a spiritual or philosophical path — even if it is simply by living the life that we choose to live, or by searching for a new life when our current one fails to satisfy our needs as thinking spiritual beings.

It is past time that I introduce myself to thee, gentle friend and traveller. My name is Batlin, and indeed I have been following this quest all of my life. It has been a long road, but the rewards have been beyond measure. If thou wouldst permit me, I would very much wish appreciate sharing these rewards with you.

ii. The Story of Batlin — Part the First



There is much that I have set out to tell thee in this book. Some small part of it involves my own personal story. As that is the least important part of this book, I shall quickly relate my tale first, gentle friend and traveller. In that way we shall soon have it over with and then be free to pass on to more important concerns!

I was born in the forests surrounding the city of Yew and educated in the traditions of the Druids. Having been raised in the city of Justice, I was taught to always strive for fairness in dealing with others, and these teachings left a lasting impression upon me. But while I found trees, birds and moons to be very beautiful, I determined to dedicate my life to the service of people. So it was I left to seek my fortune in the world.

This was a time when, over Lord British’s objections, unruly lords waged war against each other, so there was little else to do but become a fighter in the city of Jhelom. I regret killing, although much of what I did helped bring peace to our land once more. I learned well how to defend myself and to find the courage one must have to survive in battle. I also learned respect for those of valor who earn their wage by combat. Eventually those little wars ended, and I found myself penniless and without a trade in the capital city of Britain.

I became a Bard simply because a Bard was needed at the Blue Boar. There were none about, and I had the loudest voice. Never had I considered myself to be musically inclined, but it was a fair alternative to starvation. My voice was painful. My mandolin strings would break rather than let me stroke them. After much heckling and many a thrown bottle, my talents did slowly develop. As the years passed I began to feel the deep compassion that bards know when singing of heroic deeds. I discovered that sharing a spiritual rapport with my audience was very moving. Several of my ballads are still sung today (although by tradition, the player will no doubt take credit for composing them himself).

While in Britain, I met two remarkable individuals. They were twins, Elizabeth and Abraham. They were also well versed students of philosophy, and many were the hours we spent in discussion and debate. We did raise our voices on occasion, gentle friend and traveller, but that did not prevent us from becoming fast friends. Although I would never presume to intrude upon their privacy by revealing the many

fascinating details I learned about them and their lives, I will say that they play a truly significant role in the part of this book that is my story.

A mage from Moonglow who had heard me perform came to offer me employment as his assistant. Magic has always fascinated me, and so I became his apprentice. I will always remember his teaching that if I was to successfully commune with the invisible world without lapsing into madness, I must ever retain my honesty — if one is to live outside the laws of reality, one must first be honest. He taught me well. It was with great sadness that I ended my studies in the magical arts when my master, who was most elderly, passed away.

While drinking at the Blue Boar soon after his passing, Elizabeth, Abraham, and I each decided that we needed something to which to dedicate our lives. On a youthful whim, we made a pact that we would go our separate ways and spend the next decade travelling throughout the land to find adventure, and to find ourselves as well. We agreed to reunite at the Blue Boar in exactly ten years. Our departure was exciting yet melancholy, as my life began a new chapter.

iii. The Old Man and the Bandits



On the road leading out of Britain, I met a man bent with age, but still possessed of keen wit. As we walked he shared with me his tale, and I in turn shall share it with thee.

During a stroll through the woods one day, this man was kidnapped by a group of vicious bandits. The poor man had just left his nephew's family and had no one else in the world. Woe to them who have been kidnapped when they have no one to pay their ransom! The bandits soon began to loathe their captive and did make plans to kill him.

One wanted to hang him, while another wanted to stab him. Still another wanted to burn him at the stake while yet a fourth wanted to tie rocks about his waist and throw him in the river. So angry did they wax in their disagreement over what manner of violence to use, that they did break into an awful, bloody row.

And so it was that this old man did escape from the bandits, who were distracted with their brawling. Upon noticing their victim was gone, they continued to fight, this time over whose fault it had been, until all of them lay dead, murdered by each others' hand.

This old man was later reunited with his nephew's family and all were joyous of it. For as he had learned, Unity is essential for survival, and unlike those reckless bandits, he still wished to live for a good many years yet.

iv. The Story of Batlin — Part the Second



My travels took me to Trinsic, and there I encountered a group of men at arms with whom I became most impressed. Many fighters I have known were men of valorous heart on the battlefield, but off it little more than thugs. These men were not mere fighters, but Paladins. They were all skilled swordsmen and expert horsemen, as well as learned scholars and perfectly mannered gentleman. Above all, they were devoted to the preservation of honor. It was with eager gratitude that I accepted their invitation to join them. The following years were filled with excitement, as we journeyed through the land, righting wrongs and helping those in need!

During one of our adventures I was injured and forced to remain in Minoc while my companions rode on. A healer there told me that without the proper treatments (for which he charged outrageous prices) I would most probably die! I angrily sent him away. After a time I did mend. I had learned that the healing process takes place mostly in one's mind and have since placed no trust in healers who greedily prey upon the afflicted.

At that time, the town of Minoc was in need of a Tinker. As I healed, I supported myself by fixing, building and inventing things. I had never before realized how much a town is reliant upon its Tinker, nor how appreciative the local townspeople are to those who sacrifice themselves to continuously solving the problems of others. So welcome did they make me feel that I stayed for several years.

Then, filled with the urge to roam and longing for the outdoors once more, I joined a band of Rangers in Spiritwood. Rangers are a deeply spiritual people. Living with them reminded me very much of my druid childhood in Yew — with one big difference. These Rangers drank the most wonderful wine I have ever tasted! The bottles came from the old winery at Skara Brae, having survived the terrible fires which ravaged that island. Later I made a pilgrimage to the desolate ruins of Skara Brae and there I had a spiritual experience so profound that I have vowed never to relate it to anyone.

Leaving their band, I gave away all of my possessions and for months I wandered aimlessly. Eventually, I arrived at New Magincia where I sought employment as a Shepherd. Most of the following two years was spent in perfect solitude, living in complete humility. It was an experience that left me significantly changed. When I noticed that ten years had almost passed, I began the journey back to Britain.

v. The Two Brothers and the Trickster



On the road back to Britain I noticed a small mine being worked by two brothers. They greeted me suspiciously but eventually shared with me their tale, and I shall share it with thee.

Their father died and left them a map to some unclaimed land that contained valuable minerals. By law a claim can only be made in one name, and this led the brothers into conflict. One brother was the eldest, the other was more worldly — both wanted the claim. They became so fearful that the other would make the claim that each spent all his time spying on the other. No work was done.

One day, they met a stranger who said he was a mining engineer. They did not trust him at first, but he assured them that their claim was too small to be of interest. He was on the way to stake a much larger claim. The stranger turned their heads with

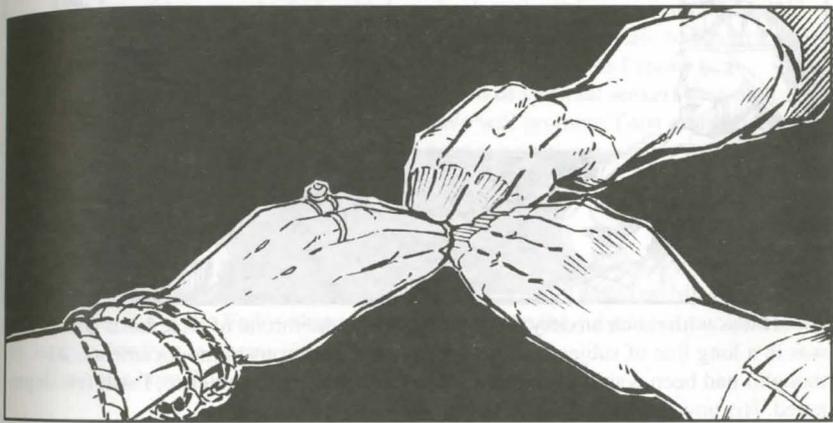
tales of the riches they could have, replacing their distrust with avarice.

The brothers asked the stranger to make their claim for them, and went back to working their mine. They worked without stopping for months, and afterward travelled to the mint to sell their ore.

At the mint they learned the stranger had staked their claim in his own name and then sold it outright for a fortune. As the brothers had taken ore from land they did not own, they were sent to the prison in Yew for many years.

Their sad fate taught them to be more trusting of each other, for a man who does not trust his brother is always vulnerable. After hearing their tale, I went to the mint, for I was curious which of the two brothers held the claim to their new mine. I had tried to guess and was quite surprised when I saw the answer. It was in the name of their father.

vi. The Creation of The Fellowship



I was overjoyed when Elizabeth and Abraham both arrived at the Blue Boar safe and sound. It was a splendid reunion. The tales they told me were truly astounding, gentle friend and traveller. But as I have mentioned, I do not wish this to come to be an intrusion upon their privacy.

Not all of our memories were pleasant ones. Most of the people of Britannia, it seemed, were more interested in helping themselves than in helping their fellow person. As travellers — strangers wherever we went — we had become used to the cold eye of suspicion upon us. Everywhere there were people who expected something for nothing, as if owed a debt by the world. Most of all, each of us had met many people who were fundamentally unhappy. Everywhere there were people who knew that they needed something in their lives, gentle friend and traveller, but that

they had not a hope of finding it.

The three of us had learned much of history. There was once a time when life was infinitely more fragile, but was cherished much more dearly. We yearned to recapture that aspect of Britannia's former glory. After much discussion, we decided to found a society called The Fellowship. At this time I was also conceiving what would become its philosophy, but that will be discussed further in another chapter. It was Abraham who suggested that I propose The Fellowship to Lord British. I agreed, little realizing the task I was undertaking.

vii. The Ratification of Wise Lord British



It was with much anxiety that I stood before the throne of wise Lord British. I was in a long line of subjects as our Liege made numerous pronouncements. Although I had been waiting for hours when I at last had my audience, I still felt unprepared. His unwavering glance fell upon me.

I said that I had a modest proposal. My colleagues and I sought to establish a philosophical society known as The Fellowship. Lord British asked me who would see the benefits of this Fellowship. I replied that no one would benefit from it, for it would not be run for profit. With a word I was dismissed. I found myself leaving the throne room before it had even sunk in that I had been refused.

By the look on my face Elizabeth and Abraham knew I was not the bearer of good news. In discussing the matter, Elizabeth suggested that Lord British had desired a tribute from us. If we could present an impressive enough tribute, he would grant his favor. After a time we raised a thousand gold pieces by selling nearly every possession we owned. With renewed confidence I returned to the castle.

This time there were several workmen with me to carry the chests of gold that were our tribute. As I reached the front of the line I spoke boldly. I said that I wished to discuss The Fellowship, but first wished to present Lord British with suitable tribute. With consternation I realized that I had spoken before Lord British had finished reading an important looking scroll placed before him by one of his advisors. He signed it as he spoke, not even bothering to look up at me. First he ordered my workmen to remove the boxes. Then he ordered the workmen to remove me as well!

Angrily I stormed from the throne room. Once more did I face my two friends. We were most disappointed. The dream we shared now seemed to have no hope of becoming reality. I spent days somberly brooding over my failure. One morning found me so completely lost in my thoughts that I did not hear the passing beggar approach. When at last I noticed him he spoke. "A coin for one denied the rewards of worthiness." The illumination was pure and instantaneous. He thought I had gone mad when I gave him my chest of gold. I ran back to the palace as fast as I could.

At first, Lord British would not see me, but I implored him. He looked me over, and seemed to see something different about me. He listened as I spoke.

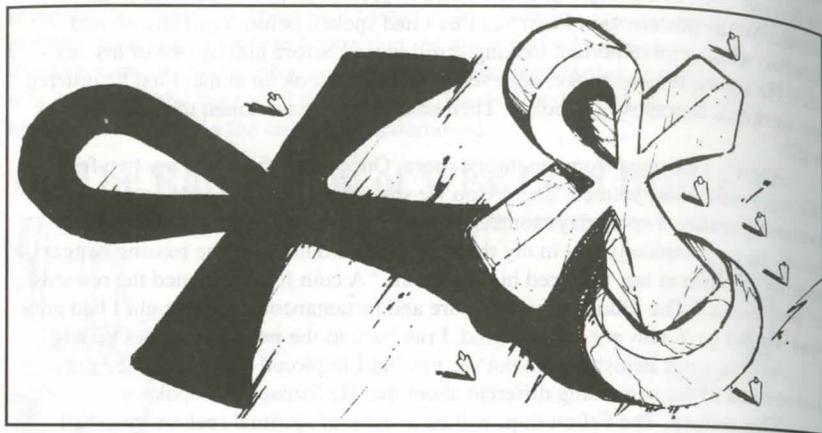
"Our society, The Fellowship, will be a union of spiritual seekers that shall strive to bring Unity to our fractured society. We will promote Trust and understanding among all the people of Britannia. With your approval our society will teach one to seek Worthiness, rather than mere personal reward. To that end, I seek your recognition of The Fellowship."

After a long moment, Lord British replied.

"Batlin, thou dost know the meaning of perseverance. I care not for what thy Fellowship dost wish of me and I care even less for what thy Fellowship would seek to do for me. But if thy Fellowship would seek to serve the subjects of my land then my support for thee is unequivocal."

Thus was born The Fellowship.

viii. The Value of Virtues and the Virtue of Values



In creating the Fellowship philosophy I had no intention of cobbling together a collection of platitudes that would be presumptuously intended as a replacement of the Eight Virtues of The Avatar. I knew there would be those who would accuse me of doing just that, no matter what philosophy I developed! I hereby wish to state that The Fellowship fully supports the Eight Virtues of the Avatar, and as one who has endeavored to follow their example I can personally assure thee of their immeasurable worth.

But as one who has followed the Eight Virtues, I know whereof I speak when I say that it is impossible to perfectly live up to them. Even the Avatar was unable to do so continuously and consistently. Can anyone say that they have been honest every moment of every day of their lives? Can anyone say that they are always compassionate, valorous, just, sacrificing, honorable, humble or spiritual at all times? The philosophy of the Eight Virtues does little more than emphasize our own personal deficiencies. I have met many adherents to the ways of the Virtues who are racked with guilt over what they perceive to be their spiritual failures, for that is what the Virtues are based upon. Having been shown our weaknesses, now is the time to strengthen them. The philosophy of The Fellowship has been created to eradicate the failures from one's life. It is a philosophy based upon success and it enhances everything that has come before it. The Fellowship philosophy can be expressed as three values derived from the personal experiences of my life. They are known as The Triad of Inner Strength.

ix. The Triad of Inner Strength

The Triad of Inner Strength is a rigorous mental discipline. It takes concentrated effort to apply this triad of values to thy life. But in doing so thou will see a change in thy life so significant that thou shalt no longer be able to look at the world in the same way again.

The first value of The Triad of Inner Strength is expressed as "Strive For Unity." People apply this value to their lives by working together to achieve that which shall benefit everyone in a state of mutual cooperation. We have seen by the parable of "The Old Man and the Bandits" how Unity is essential. If we are not working together then we are certainly working against each other.

The second value of The Triad of Inner Strength is expressed as "Trust Thy Brother." People apply this value to their lives by dealing with others without accusations or suspicions that limit others and themselves. We have seen by the parable of "The Two Brothers and the Trickster" just how vulnerable lack of Trust makes one. Without Trust we restrict ourselves from that which we wish to accomplish.

The third value of The Triad of Inner Strength is expressed as "Worthiness Precedes Reward." People apply this value to their lives by placing a greater emphasis on their accomplishments rather than on personal gain. We have seen by the parable of "The Ratification of Wise Lord British" that one must not expect something for nothing. Blindly chasing reward is a path that leads nowhere.

x. The Philosophy of The Fellowship



The scholarly name for the Fellowship philosophy — which I did not personally coin—is "sanguine cognition." This is merely an important-sounding way of saying

“cheerful knowledge,” and that is as accurate a description of The Fellowship philosophy as any I can imagine.

As long as one maintains his confidence and hopefulness one is continuously open to the opportunities that perpetually exist in life. I firmly believe that, gentle friend and traveller, and thou shouldst believe it as well.

Without confidence, one does not perceive the world correctly and hence one misses opportunities. This sad state of “fevered” reason currently holds the majority of the population in its icy grip.

Such “fevered” persons begin to adapt illusory notions to their thinking and entangle themselves in twisted, conflicting emotions which reinforce their failures. These sad people become afraid of themselves. They begin to believe that they will fail, and this belief can become a self-fulfilling prophecy.

Such a fevered person, whether he realizes it or not, desperately needs to recognize that the world is not a tangled knot of failure. The entire process of thought needs to be permanently fixed to a confident nature. Such a person needs to “find the best in himself,” and accept his basic worth. This is rarely an easy task. It requires a reflection upon one’s self that can be emotionally painful. But as we say in The Fellowship, “Sometimes one must face harm in order to find healing.” Upon achieving Recognition one will follow his own inner voice of reason that will guide him through life and help him avoid failure.

One of the most difficult things to accept is how reliant we are upon others. We fear the rejection, the real or imagined hidden motives, and the potential deceit of others. Accepting our inevitable reliance upon others as an integral part of our role in this world requires the courage to walk on fire.

To achieve the recognition necessary to break free of the fever, one must dedicate every fibre of being to accomplishing that end. We of The Fellowship travel that path, and I extend my invitation to thee, gentle friend and traveller, to join us. Together we shall reach our destination.

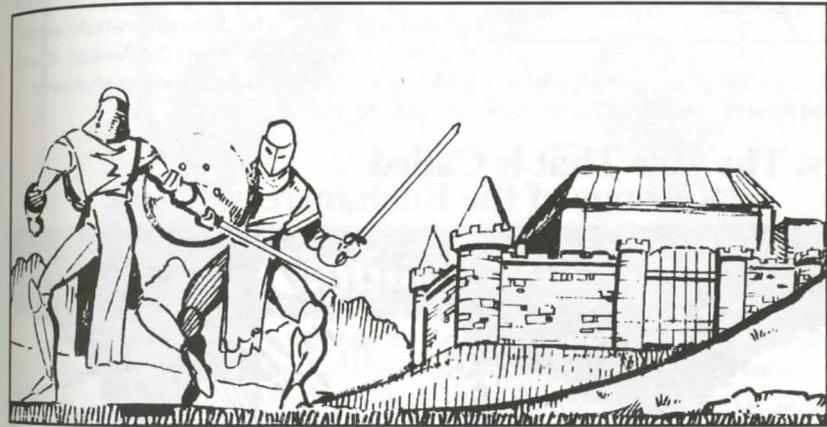
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A Reinterpretation of the

HISTORY OF BRITANNIA

Being in part a collection of historical facts with a modern interpretation thereof supplied by the author, Batlin of Britain

i. Ancient Sosaria



Long ago, before the formation of the kingdom of Britannia, the land was known as Sosaria. It was little more than a multitude of warring city-states and feudal fiefdoms, and the people of the land suffered for it.

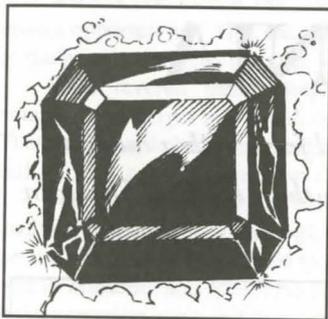
It was wise Lord British, then ruler of the city-state of Britain, who eventually brought the land and the people of Sosaria together.

ii. The Ages of Darkness

The Ages of Darkness are well named, for they were a time when dark terrors walked the land. It may also be said that during the Ages of Darkness, the peoples of

Sosaria were the furthest from illumination, for this was truly a time when spiritual pursuits were at their ebb.

iii. The Tale that is Called 'The First Age of Darkness'

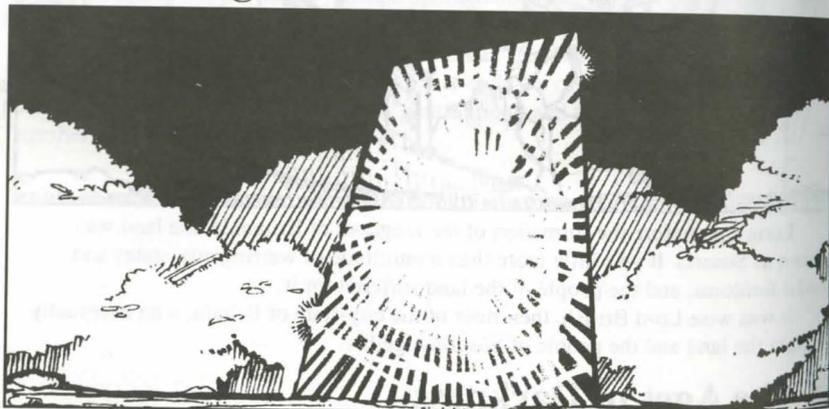


The beginning of the First Age of Darkness is marked by the coming of a sorcerer named Mondain. The father of Mondain had refused to share his secret of immortality with his son, and their disputes ultimately led to the father's death. Torn with anguish and no doubt by his fears of persecution, Mondain turned his dark powers against the kingdoms of Sosaria.

In desperation, Lord British called forth a champion to rise to the defense of the realm. The hero who responded to his summons would many years later come to be known as the Avatar. It was

through the actions of this Avatar that Mondain's foul gem of power was shattered and Mondain himself did come to a very sad end indeed.

iv. The Tale That is Called 'Revenge of the Enchantress'



The triumph of the Avatar did not last long, for in slaying Mondain he brought the wrath of Minax down upon the land. Minax was the young lover of Mondain and a sorceress with magical powers even greater than Mondain's. She had the power to

command legions of foul creatures, and in her quest for vengeance over the death of her lover, she brought much misery to the people of Sosaria.

Again the hero who would come to be known as the Avatar returned to Britannia in the first recorded use of the Moongates. The Avatar slew Minax's minions and did eventually destroy her as well.

While there have been speculations as to the motivations of the Avatar, there is insufficient evidence to show that the Avatar was driven to violence by jealousy over Mondain's romantic involvement with Minax. That being said, such theories are hereby denounced and should not be given consideration.

v. The Tale that is Called 'Exodus'

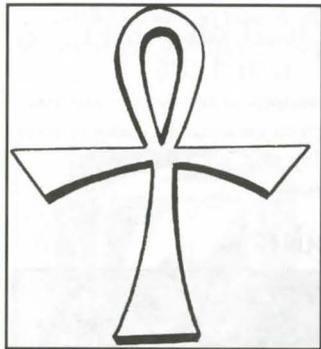


No one in all of Sosaria, not even the Avatar, could have realized that by ending the lives of Mondain and Minax, the Avatar would be orphaning their only child. The name of this unusual child was Exodus, and he was neither machine nor human. Exodus rose from the bottom of the Great Ocean to carry out a campaign of revenge and destruction against the land of Sosaria.

So terrible were the forces unleashed by Exodus that the hero whom we would come to know as the Avatar required the assistance of a mysterious being known as the Time Lord to thwart them. And thus it was that the Avatar did deal with Exodus in a similar manner as he had dealt with his mother and father.

Since that time much speculation has been given to the potentially immeasurable good such a creature as Exodus could have brought the land had he been persuaded to become beneficent, but I wish to formally disagree with those who say the Avatar should have handled the situation differently.

vi. The Rise of Britannia



After the smiting of Exodus, the people of Sosaria, who lived in terror during the onslaught of these evil magical beings, did unite together as a measure of self-protection under the sovereign rule of Lord British. Thus was formed the kingdom of Britannia.

Led by wise Lord British, the land did come to flourish. The eight major townships rose upon the foundations of the old city-states. A renaissance of culture and civilization was highlighted by the formation of great institutions devoted to the study and advancement of the arts and sciences.

vii. The Tale that is Called 'Quest of the Avatar'



It was at this time of growth and prosperity in the kingdom of Britannia that Lord British put out a call for one to show the way of spiritual growth and virtue. The call was answered by the hero who would come to be known as the Avatar.

It was at this time that the champion of Britannia did come to earn the title of 'Avatar' by establishing the Eight Virtues and by seizing the Codex of Ultimate Wisdom from the depths of the Stygian Abyss.

It has been said that the primary motivation of the Avatar has been personal redemption for the fate of Mondain, Minax and Exodus. While there has been no

proof of this. I say that even if it were true, all the positive things brought forth in the world through the virtues would be enough to make amends for almost any misdoing.

viii. The Tale that is Called 'Warriors of Destiny'



It seems that by removing the Codex of Ultimate Wisdom the Avatar had inadvertently set into motion a cosmic chain of events which led to the release of three Shadowlords from remnant shards of the black gem of Mondain. These Shadowlords were sinister agents of evil. Soon they managed to dethrone Lord British and hold him prisoner in a foul dungeon. Denied his wisdom and compassion, the kingdom of Britannia quickly grew oppressive and cruel.

This was the Britannia that greeted the return of the Avatar. After a score of valiant struggles, Lord British was liberated, his throne regained and the Shadowlords banished from our world.

However, Lord British's escape from the underworld did cause a tremendously destructive series of earthquakes as the vast network of subterranean caverns collapsed. Much of the gargoyle race did perish in that tragic cataclysm.

ix. The Tale that is Called 'The False Prophet'



After the tremors that shook Britannia subsided, gargoyles, inhabitants of the other side of the world who now found their homeland virtually destroyed, began to appear on the Britannian side of the world in increasing numbers as aggressors. They launched vicious attacks against the human race and many were they who lost their lives in defense of our realm.

The gargoyles even attempted to assassinate the Avatar. They set a Moongate trap which lured the Avatar into their clutches, but the Avatar was rescued by his companions. So it was that Lord British did once again call upon his champion to set the world right. Ending this violent racial conflict was the greatest challenge that the Avatar had ever faced.

At last it was revealed that the Codex of Ultimate Wisdom, which had been removed from the underworld by the Avatar, was actually the property of the gargoyles. Therefore, the Avatar placed the Codex into the great ethereal void where it would be possessed by neither human nor gargoyle. Two lenses, used to view the Codex, were given to Lord British and gargoyle ruler King Draxinusom. As the cause of the conflict between the two races had been removed, it was hoped that the rift between the two would eventually be closed.

Those who would say that this terrible and destructive war could have been prevented entirely had the Avatar not appropriated the Codex from its true owners are merely dissidents who are grossly misinformed.

x. The Last Two Hundred Years

It has been two centuries since the Avatar last appeared in our good kingdom. Some have written that at last it is possible to interpret the tales of the Avatar as they should be, with the proper historical perspective. Some argue that as time moves on, the truth of what actually occurred will fade even further away and that we have a responsibility to preserve the legends as we now know them. However, most agree when it comes to a number of basic theories.

While there are those who maintain that the stories of the Avatar are only myths, practically all credible scholars say that at least some elements of the Avatar's tales are historical fact. In reality, one need look no further than the Isle of the Avatar to see very persuasive evidence that the Avatar did indeed exist — at least as a person if not as a spiritual being!

It is most likely that there has been more than one Avatar. All of the writings insist that the Avatar who negotiated the peace between Britannia and the gargoyles is the one and same person who first appeared to vanquish the sorcerer Mondain those many years ago. While saying it is most unlikely, historians do not firmly deny the possibility of there having been only one Avatar. After all, our good sovereign monarch, wise Lord British, has himself displayed an amazing longevity!

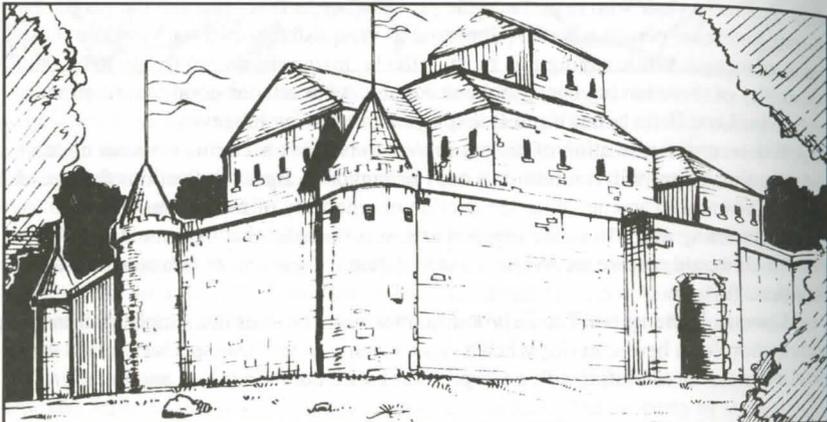
Whatever interpretation of history proves to be most accurate, it seems undeniable that the Avatar will not return to our fair kingdom. By all indications the age of magic is coming to an end. With the decline in reliability of mages, and with the kingdom turning away from the magical arts, it is doubtful that extreme danger — that which would require an Avatar's aid to defeat it — will ever return to Britannia. And thankfully so.

Upon us is the age of The Fellowship, in which one does not simply wait in anticipation for a heroic savior when a crisis occurs. In this less spectacular but more practical day, we are left to solve our problems with our own minds and our own will.

TRAVELLER'S COMPANION

*guide to travelling in Britannia,
as written by Batlin of Britain*

i. The Cities and Towns of Britannia



Built upon the foundations of the ancient city-states of Sosaria, the towns of Britain, Jhelom, Minoc, Moonglow, New Magincia, Trinsic and Yew have risen up to become major cities in their own right. Numerous other cities have also grown and doing so deserve recognition as proud jewels in the crown of Britannia. All of these cities are described below, being listed in alphabetical order for the sake of the traveller's convenience in using this book as a reference guide.

Buccaneer's Den

This island is the notorious home of pirates and thieves. It is a place that is not without risks and dangers — especially if one is too free in displaying one's money. Still, Buccaneer's Den has attracted many travellers in recent years with the lurid

thrill of its well-monied House of Games and sensuous indoor Baths. It is also a place where one may purchase many exotic goods.

Britain

This is the opulent and majestic capital of Britannia, famed city of Compassion, and it is where thou mayest find the Castle of Lord British. Britain is built on the shore of Brittany Bay. It is easily the largest city in all of Britannia and it has seen much new development. It is the home of the historic Wayfarer's Inn, Royal Theatre and the Music Hall. It is a center of commerce for the entire kingdom. Here in Britain thou will find vendors hawking their wares, a Farmer's Market, shops of every type and fabulous entertainment for everyone. Britain is also home to the headquarters of The Fellowship.

Cove

The city of Cove is the cleanest city in all of Britannia. Although the city itself is pristine, a traveller would be wise to avoid Lock Lake, which has become very polluted in recent years. One of the most romantic places in all of Britannia is the "Lovers' Walk," which is not far from the Shrine. Across the mountains from Cove the traveller will find the Bloody Marsh, site of one of Britannia's most savage wars.

Isle of the Avatar

While no formal city has ever been built upon the Isle of the Avatar, it is such a place of interest that it is included here in this section. This strange volcanic island — which arose from the tumultuous upheaval of the Great Stygian Abyss — receives numerous visitors on pilgrimage to the Shrine of the Codex. The Shrine is considered to be a national monument of great historical importance to Britannia and as such is under armed guard day and night.

Jhelom

Located in the Valorian Isles in southwest Britannia, Jhelom is a meeting place for fighters, paladins and rangers. It is the birthplace of many an esteemed Britannian warrior. This city of Valor is also known for its well-stocked armoury, the hospitality of its barmaids and for its local fighting club, the Library of Scars.

Minoc

This thriving seaport is located in northern Britannia at the mouth of Lost Hope Bay. Minoc, also known as the city of Sacrifice, has an active sawmill, armourer, shipwright and branch of the Britannian Mining Company. It is the home of the Artist's Guild, where craftsmen of all types display their craft. In Minoc there is also an active branch of The Fellowship.

Moonglow

Moonglow is the city of Honesty and sits upon the southern tip of Verity Isle. It is where the Lycaeum, the great storehouse of knowledge and wisdom, is located. Nearby, the traveller will also find the observatory, which contains an orrery. An active branch of The Fellowship also operates in Moonglow.

New Magincia

New Magincia is known as the city of Humility, and hence it chooses to remain isolated from much of the rest of Britannia. If thou venture there, thou will find that the people are basically shy, but also warm and hospitable once they have gotten used to thee. The city is located on an eastern island well past most of the main trade routes. Time progresses more slowly in New Magincia than anywhere else in Britannia. The economy of New Magincia is based on shipbuilding, horticulture and raising sheep.

Paws

Paws is a small coastal village that, because of the continuous expansion of the capital city, has essentially merged with Britain. While there was a time when this village held a quaint rustic charm, in more recent years the village of Paws has languished in poverty. A terrible, seven-year drought has forced the closure of many of the local farms. The industry of Paws consists primarily of milling flour, dairy farming and meat curing. Paws is where The Fellowship runs its shelter for the poor.

Serpent's Hold

This opulent castle fortress is home of the honorable Order of the Silver Serpent, the training camp for the armed militiamen of Britannia. Here fighting men learn more than just the martial arts. They are taught honor and valor as well. Instruction in the ways of the warrior may be obtained and one may purchase reliable weapons, armour and provisions here. The Meditation Retreat of The Fellowship is located on an island east of Serpent's Hold.

Skara Brae

This sad town was once known as the city of Spirituality. Few are those who venture to the spot where the city of Skara Brae once stood, near the mystic forest of Spiritwood, for all that remains are buildings that stand nearly deserted. While there have been many strange stories as to the goings-on in this uninhabited place, there are few who would seek to verify them. The wise traveller avoids Skara Brae altogether.

Spektran

The sparse isle of Spektran is ruled by the notorious Sultan of Spektran. The sultan is renowned for his unfriendliness to outsiders, and Spektran is not recommended to travellers.

Terfin

Terfin is the home of the gargoyles, built upon the island once occupied by Sutek the Mad. Most gargoyles travel daily to Minoc in order to work in the mines. In Terfin one may find the gargoyle Hall of Knowledge and an active Fellowship branch. Not far from Terfin are the ancient ruins that were once the palace of the traitorous Blackthorn.

Trinsic

This active seaport south of Paws and north of the Cape of Heroes is known as the city of Honor. Trinsic is the home of Paladins and also has an active branch of The Fellowship. Travellers might question the need for the walls that surround the city. As if this would not be enough to keep the city secure, the guards of the city will not permit anyone to enter or leave the city unless they know the secret password. While this was once done to maintain the security of the city and the safety of its citizens, it is now done mostly to sustain a traditional ritual. (Britannian law forbids the open publication of Trinsic's password.)

Vesper

Located on the edge of the desert in northeast Britannia, Vesper is an industrial town. Here the main branch of the Britannian Mining Company is located. Vesper is one of the few places in Britannia where humans and gargoyles live together in an approximately equal number.

Yew

Yew is known as the city of Justice, but it has changed considerably over the years. The buildings that remain where the city once stood have been abandoned for many, many years. The citizenry of Yew have chosen a life independent of normal civilization. They now live scattered throughout the Great Forest. Their only remaining link with outside civilization is Empath Abbey. The Abbey has assumed responsibility for the court of Yew as well as its prison. Many travellers to Empath Abbey come to visit the graves of loved ones at the nearby graveyard.

ii. The Commerce of Britannia



Britannia is not only a kingdom of great cities, but also of prolific commerce and industrial might. In any city, thou canst find a pleasing variety of goods and services available for purchase. Each city has an economy based upon its industry and the endeavors of the people who work within it. The goods each city produces are bartered or sold to the people of other cities, which provides them access to other goods not usually available in their own city. Through this continuous flurry of commercial activity all the townships of Britannia are supplied with the products and services that they need to survive and thrive.

The Farmers of Britannia

While in recent years a series of droughts has hurt agricultural production in certain areas of Britannia, most farmers are enjoying a resurgence of bountiful harvests. Farmers will usually be glad to sell the passing traveller eggs, fruits, vegetables or whatever else they produce.

The Farmer's Market

At the Farmer's Market in Britain, the fruits, vegetables, eggs and meats produced on the farms of Britannia may be found for sale.

Pubs

In a pub one may relax and enjoy a refreshing drink or a fine meal. In many pubs one will hear the local bard sing rousing songs of legend and lore. When conversing with the other patrons of a pub, be prepared to hear anecdotes, war stories, local history — perhaps even useful information!

Food Vendors

For a quick meal one could do no better than to sample the wares of the local food vendor. To find the local food vendor, one need only listen for his friendly bark and call.

Provisioners

There is no end to the number of odd things that a traveller or adventurer may find himself in need of, and the one place where nearly all of these might be found for sale is the local Provisioner's Shop.

Stables

There is no faster mode of land travel than riding in a horsedrawn wagon. When travelling in the wilderness, the quicker one is, the safer one is. Horses and carts can be purchased from the stables in Britain.

Magical Reagents

Now that magic is severely on the decline, those who still pursue this dying art may find that many mages are willing to sell their magical reagents. One need not concern oneself with the freshness of these reagents, for all things magical only increase in potency with age.

Inns

The inns of Britannia provide the traveller with safety and a place to rest. Camping in the wilderness is always a risky proposition and the danger to one's health is great, especially in times of inclement weather.

Craftsmen

The craftsmen of Britannia are skilled artisans who sell wares made by their own hand. While such items are often of high price, the price reflects compensation due for the time, toil and talent of the craftsman, as seen in the high quality of the item.

Armourers

Here one may purchase armour and shields made for the protection of a fighting man in combat. Most armourers will also sell weapons, thus completely preparing any would-be fighter. Armour is generally sold piecemeal, but certain armourers have been known to sell entire suits at a cheaper price than the total cost of each individual piece.

Fletchers and Bowyers

Without question, the bowyer that is held in highest regard throughout all of Britannia is Iolo FitzOwen, the proprietor of the establishment that has come to be called "Iolo's Bows." So popular is this bowyer's shop that a similar establishment was set up in Serpent's Hold.

Healers

Many who succumb to injury or illness have their conditions worsened and their purses lightened by a healer. The wise traveller knows that sickness and injury is rooted chiefly in the mind and that only through self-discipline can pain, illness and injury be overcome.

Apothecaries

It is the shrewd apothecary who mixes his strange chemicals and produces the formulas to create potions. Apothecaries have long since stopped the sale of magical reagents, as magic has become so unreliable.

Shipwrights

Ships may be purchased from shipwrights in nearly any coastal city. By Britannian law no ship is considered to be legally held unless the owner has in his possession that ship's deed of sale.

iii. The Rune Writing of Britannia

A	B	C	D	E	F	G	H	I	J	K	L
𐌆	𐌇	𐌈	𐌉	𐌊	𐌋	𐌌	𐌍	𐌎	𐌏	𐌐	𐌑
M	N	O	P	Q	R	S	T	U	V	W	X
𐌒	𐌓	𐌔	𐌕	𐌖	𐌗	𐌘	𐌙	𐌚	𐌛	𐌜	𐌝
Y	Z	TH	EE	NG	EA	ST					
𐌞	𐌟	𐌠	𐌡	𐌢	𐌣	𐌤					

Following a tradition that has been passed down from generation to generation for centuries, many signs and placards in Britannia are written in a unique and attractive runic script that was once the language of the druids. This strange writing is older than Britannia itself. While the presence of such writing might befuddle a casual tourist, the wise traveller knows that it is a worthwhile pursuit to learn the meaning of this writing.

Nowadays, the use of rune writing is beginning to fall out of fashion, and its use generally denotes an establishment that clings to an antiquated style of operation.

iv. The Arms of Britannia



It is the wise party of travellers who make sure that they are well armoured and heavily armed when travelling in the wilderness. To that end, the following is a brief introduction to the armour and weapons that one may use to insure one's safety.

Armour and Shields

There are six parts of the body that one does seek to protect: the head, the torso, the legs, the hands, the feet and the neck. All pieces of armour are specifically designed for the protection of one of these places.

There are basically four types of armour: leather, scale, chainmail and plate. Leather provides the least protection, but it is exceedingly light and is relatively inexpensive. While scale and chainmail provide roughly the same level of protection, scale is the heavier and the less expensive of the two. The heaviest type of armour is plate; since it provides great protection it is also the most expensive.

Unless one is armed with a weapon that requires the use of two hands, a wise combatant, in addition to wearing armour, will also carry a shield. Generally, the more protection a shield provides, the heavier it is.

One can quickly see that such activities as fleeing from a superior opponent, carrying a full load of equipment, or travelling a great distance become quite daunting tasks if one is heavily armoured. Therefore, the wise traveller moderates the type of armour worn, taking into account one's own physical strength, the combined weight of any other items one may wish to carry and the distance one expects to be travelling.

Weaponry

There is such a great variety of weaponry available in Britannia that it is impossible to properly examine all of it in this short space. The wise traveller knows that it is important to select for oneself the most fitting weapon. After all, the weapon itself is not nearly as important as the one who uses it. The choice of a weapon should be tailored around the user and not vice versa. What are the factors one considers when choosing a weapon?

Many weapons such as pole arms and the larger swords are heavy enough to require the use of both hands. If one is not of sufficient strength, attempting to wield a two-handed sword could be worse than fighting unarmed. Generally, the smaller and lighter a weapon is, the easier it is to conceal and quicker it is with which to strike. It is not by accident that the simple dagger is the weapon of choice for many an assassin.

A weapon of great length, such as a spear or two-handed hammer, can be used to keep one's opponent at bay as well as to attack him. The advantage of reach has decided the day in many a battle. Likewise, a long weapon is a proven disadvantage when the fight is in cramped quarters. Edged weapons such as a sword must be handled with precision — it is usually not enough to simply contact one's opponent. The skilled combatant knows how to use the cutting edge of his weapon to its greatest advantage.

Blunt weapons such as maces, clubs and hammers enable the combatant to concentrate raw strength in the delivery of crushing blows to one's opponent. The punishment of such mighty impacts has often been the key to achieving victory.

The strategic effectiveness of well placed missile fire cannot be over-emphasized. On many occasions an outnumbered party has been able to repel an attack through the proper application of missile weaponry. The disadvantage of bows, crossbows and slings is that loading them requires the use of both hands. Bows and crossbows also require two hands to fire. Daggers, axes, torches and spears can also be effective as improvised missile weapons.

v. The History and Customs of the Adventurer Classes



The Fighter Class

Many Britannian fighters receive formal training in the martial arts at Serpent's Hold, and in return they serve for a specified term as members of the Royal Militia. Some fighters study in Jhelom or with other trainers across Britannia. Other fighters never receive any formal training. Their unforgiving teacher is the battlefield, where many lives are lost when lessons are not mastered quickly enough. Fighters generally possess great strength and endurance, a proficiency with many types of weapons and the courage to face the demanding trials of combat time and time again.

The Bard Class

A true jack-of-all-trades — a trickster, a minstrel, a battler, a spellcaster — the bard possesses all of these skills. Physically, the bard falls somewhere between the brawny physique of the fighter and the delicate frame of the mage. The bard is dextrous and agile. He tends to be more clever than intelligent. He also possesses a presence and charm that come in handy in all manner of situations. The bard has a natural gift for missile weapons and a mind for riddles. The bard also plays an important part in society by recording local history in such a way that it is well remembered, through rousing tale and song.

The Mage Class

A pity to those who live their lives following the treacherous road that is the way of the mage, now that the time of magic is coming to an end. The days of won-

der, when miracles could be performed on demand through wisdom and a devotion to the arcane arts, are a part of the past. A mage's mind perceives that which resides in the invisible world, but as recent history has shown us, this keen mind upon which the mage depends is ever in danger of slipping into lunacy.

What is also tragic is that the way of the mage is not one that is consciously chosen. One is born with the calling of the mage. While magic has not yet ceased to function altogether, it has become inaccurate to the point of being unreliable, making the mage's life one of constant uncertainty.

vi. A Bestiary of Britannia

The wilderness of Britannia is the home of a multitude of strange beasts and magical creatures. While many creatures are mundane and harmless, others are terribly dangerous and barely understood. For the traveller it is vitally important to be able to recognize any type of beast that may be encountered so that one can respond accordingly. The following is a list of beasts now known to live in Britannia.

Acid Slug — This very unpleasant creature tends to inhabit dark places underground. Its skin exudes secretions of acid that can burn flesh and are especially damaging to metal. The best weapon to use against this monster is fire.

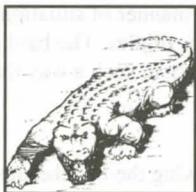
Alligator — This vicious man-eating creature lives in swampy terrain and can inflict heavy damage with its bite and tail.

Bat (Giant) — This large winged rodent attacks by night, aided by its night vision and acute hearing. Its body is very light and fragile.

Bee (Giant) — This energetic flying insect will instantly attack anything that it perceives as a threat to its hive. It attacks with a sleep-inducing poisonous sting.



Acid Slug



Alligator



Bat (Giant)



Bee (Giant)



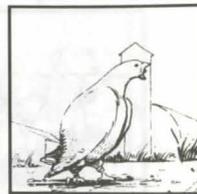
Bird



Cat



Centipede (Giant)



Chicken

Bird — This type of creature is not openly hostile to human beings, but many will probably attack if provoked or frightened.

Cat — A domestic animal commonly found in city alleyways, this creature performs an invaluable service in continuously thinning the rat population.

Centipede (Giant) — This large, multi-legged insect frequents cool, dark places. Its poison is considered to be among the most deadly of any creature. It can be destroyed by fire.

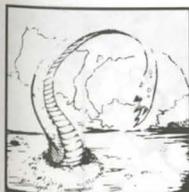
Chicken — This bird can be found on many farms. It is the source of both eggs and delicious meat often served in inns. It poses no threat to humans, as it will generally run away if attacked.

Corpser — This creature is a type of ghoul that ensnares its victims with its tentacles in order to drag them off to its lair and presumably kill them in a manner that has never been discovered. Its only known weakness is fire.

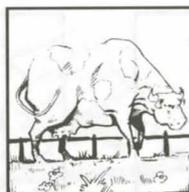
Cow — This harmless farm animal is the source of beef and dairy products.

Cyclops — One of a race of incredibly strong one-eyed giants, when it is not hurling large boulders at its enemies, its favorite weapon is a large wooden club.

Deer — This swift but timid forest creature has sharp antlers to defend itself. It is the source of venison.



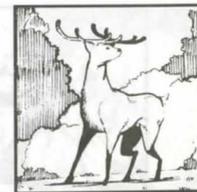
Corpser



Cow



Cyclops



Deer

Dog*Dragon**Drake*

Dog — A domesticated cousin of the wolf, this animal guards homes from intruders, tracks game during hunts, and is a playmate for children and a pet for adults.

Dragon — Dragons are a mysterious ancient race of highly evolved reptiles that possess magical abilities and a high degree of intelligence. They have large wings and are capable of rapid flight. A dragon is formidable in combat and is all the more lethal due to its noxious flaming breath. Its lair is usually a cave or dungeon where it guards its eggs and treasure.

Drake — This creature is a dragon that has not yet fully grown to adulthood, a process that takes several hundred years. Like its mature relatives, this creature can also breathe fire and fly. It is commonly found in the lair of a dragon.

Emp — This extremely peaceful creature lives in the forest. It shuns violence to such a degree that it is doubtful it will want to have anything to do with any humans it comes into contact with. Some emps possess a remarkable degree of intelligence and magical capability. Emps are so named for their empathic abilities. So sensitive are they to the pain and discomfort of other living things that they subsist on a diet of such foods as milk and honey.

Fairy — These flirtatious and mischievous tiny flying creatures are rarely hostile.

Fish — This generally harmless water-breathing creature can be found in abundance in the seas, rivers and lakes of Britannia. It greatly contributes to the local food supply.

*Emp**Fairy**Fish**Fox*

Fox — This small, wily mammal is related to the wolf, but is not as powerful or aggressive.

Gargoyle — This red-skinned creature originally comes from the subterranean domain of the gargoyles. There are two classes of gargoyles — the larger winged gargoyles that possess keen intellect and magical capability, and the smaller worker drones that possess little thinking ability but are embodied with great strength.

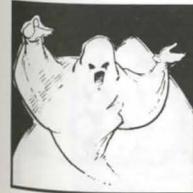
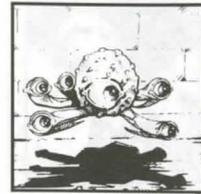
Gazer — This strange creature is found mostly in dungeons. It hovers about, looking for victims to mesmerize with its multiple eyes. Upon being killed, the body of a gazer will break up into a tiny swarming colony of insects.

Ghost — This magical spirit of the dead has the power to move through solid walls and has been known to use magic. It can appear anywhere, but tends to frequent graveyards or places significant to the life of the deceased.

Gremlin — This tiny creature travels in a pack and attacks in a large group. Its primary threat is that it likes to steal food.

Harpy — This half human/half bird creature nests in mountainous caves. It attacks from the air with the sharp talons on its feet.

Headless — This ensorcelled creature appears to be a living, ambulatory, beheaded human being. It is unknown exactly how it compensates for its apparent lack of sensory organs, but it manages to do so quite well. Its favorite method of attack is strangulation.

Gargoyle*Gazer**Ghost**Gremlin**Harpy**Headless*

Horse*Hydra**Insects*

Horse — This strong, swift animal can be found in the wild or domesticated in the stables. Horses are most commonly used for rapid transportation from town to town or through the wilderness.

Hydra — This creature is a type of dragon that possesses three heads. Like the dragon, a hydra also can fly and breathe fire.

Insects — This is an insect swarm capable of causing an intolerable number of bites and stings, as well as severely spooking horses and destroying crops.

Kraken — This mysterious peril of the sea is not well understood. There have been numerous reports of sailors being snatched from the decks of ships by huge suckered tentacles and dragged down to the bottom of the ocean, never to be seen again. No one has yet reported an actual sighting of the full body of this creature.

Liche — This is an extremely rare type of undead creature that is both dangerous and very difficult to destroy.

Mongbat — This bizarre and frightening creature is a cross between a bat and a monkey. Its attacks are fast and powerful, but it usually only inhabits the deepest dungeons.

Mouse — This harmless rodent lives on whatever little scraps of food it can find, although it is especially fond of cheese. It occupies the space just beneath the cat on the food chain.

*Kraken**Liche**Mongbat**Mouse**Rabbit**Rat (Giant)**Reaper*

Rabbit — This fast, long-eared animal lives primarily on the carrots grown by local farmers.

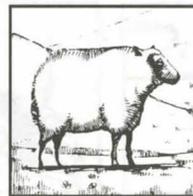
Rat (Giant) — This filthy, overgrown rodent is a severe hazard to the health of human beings. Immune to poison and too large to be trapped, this creature has a voracious appetite for garbage and carrion. When it roams in packs it loses its natural fear of human beings. The bite of a giant rat can cause a variety of potentially fatal diseases.

Reaper — The reaper is actually a malevolent tree spirit that has the power to reach out and grab passersby in its long, powerful branches. The reaper also possesses the magical power to unleash destructive bolts of lightning. As it is a creature made of dry deadwood, it is quite vulnerable to fire.

Sea Serpent — This creature is a seagoing dragon. It is capable of spitting out fireballs, much the same as dragons breathe fire. A sea serpent can severely damage a ship with a single lash of its powerful tail.

Sheep — These non-threatening beasts are raised by shepherds, who take them out to graze in great numbers. Sheep produce both wool and mutton.

Silver Serpent — This creature, seen in the symbols of ancient Sosaria, once more holds the fascination of Britannia. The venom of the silver serpent is reported to have a strange and lasting effect on people. No doubt this shall be the subject of further study.

*Sea Serpent**Sheep**Silver Serpent*

Skeleton — This is the undead reanimation of a fighter who was slain on the field of battle. Skeletons tend to cluster in hordes and are often following the commands of a sorcerer. In fact, they may continue to do so well after the sorcerer himself is dead!



Slime — This grotesque gelatinous mass lives in the depths of a dungeon or in the murkiest corners of a swamp. It reproduces by dividing itself and grows through the absorption of other slimes. Slimes attack by hurling foul blobs of slime at their intended victims. Fire is known to be a very effective weapon against them.

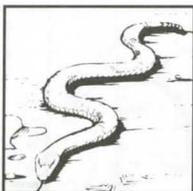
Snake — This creature spends the night coiled among the cool rocks and comes out into the sun during the day. This warms its blood, enabling it to strike more quickly. The creature is venomous and can even spit venom from several yards away.

Spider (Giant) — While this creature may be encountered anywhere in the wilderness, its lair is its giant web, which will almost always be hidden in a cool and dark place. A giant spider is capable of spraying its poisonous spittle from a considerable distance. Its bite is also tremendously painful.

Troll — This brutish creature is the bane of all travellers. Many tales relate how trolls hide beneath bridges in order to terrorize and prey upon all those who would cross it. The wise traveller would do well to exercise caution when crossing any bridge, especially those one may come across in the wilderness, far from the security of a city.



Slime



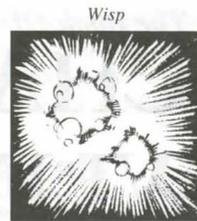
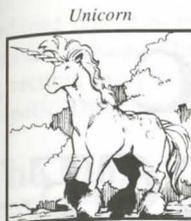
Snake



Spider (Giant)



Troll



Unicorn — Fanciful stories of these creatures abound in rural areas. The unicorn appears as a splendid young white stallion with a single great horn rising from its head. Legends speak of how only those who are truly virtuous may approach a unicorn. Unicorn sightings are rare — so rare in fact that most serious scholars deny their existence.

Wisp — These mysterious floating lights have been a puzzlement to many an adventurer. They seem capable of inflicting only slight physical damage, but they also seem impervious from physical harm themselves. It has been said that these strange creatures are very knowledgeable and that they come from a world other than our own.

Wolf — This plains and forest hunter has long had the greatly undeserved reputation of a vicious predator. While wolfpacks do thin the weak and the sick from herds of wild animals, and while farmers must occasionally be wary of their curiosity, there is little to support the notion that these animals are bloodthirsty man-eaters.

The Book Of
**ARCHAIC
KNOWLEDGE**

*a historical look at the mechanics and use of the arcane arts before the end of the Age of Magic, as written by
Batlin of Britain*

Before anything further is written, it must be noted that the following section is included only as a matter of historical documentation. The use of magic has long been proven to be unreliable and the suspected cause of mental deterioration. The author takes no responsibility for anyone who may attempt to practice magic based upon the information contained herein.

i. The Mage's Spellbook



The first component necessary for the successful casting of spells by a mage is his spellbook. It is his principle tool and without it the mage cannot function. This book contains the formulae and incantations required to cast the specific spells that a mage knows. As mages become more experienced they can acquire new spells. A

wise and long-practicing mage may have a great tome filled with strange drawings, diagrams and writings. These writings will be explained in greater detail in a forthcoming section. Every mage's spellbook contains several basic magical spells called Linear spells. These too will be explained in their own section.

ii. The Mage's Reagents



The second component required for spellcasting is the proper reagent. These chemical materials serve as a link between the physical world that the mage wishes to affect and the psychic energies of the ethereal waves that the mage is drawing upon to effect that change. Some reagents are relatively common herbs, others are rare and exotic items. The following is a list of reagents used by all mages.

Black Pearl

Black pearl is an exceedingly rare commodity; fewer than one in ten thousand pearls is black. They have been found at the base of tall cliffs on Buccaneer's Den. While a less than perfect pearl may be perfectly acceptable for decorative purposes, the black pearl of a mage must be perfectly formed or it is virtually worthless. Black pearl is ground up into a fine powder.

Blood Moss

In recent years the only places where this strange substance can be located are in the Bloody Marsh across the mountains from Cove (where many years ago thousands of soldiers lost their lives) or in the enchanted forest of Spiritwood, beneath the rotting bark of dead trees.

Garlic

Certainly this is the most commonly available of all magical reagents. There are few kitchens in all of Britannia that are not supplied with at least a few cloves of this spice. Garlic cloves are washed and ground into a paste, providing significant protection from harmful magic.

Ginseng

The healers of our fair land have known of the healthful and restorative powers of this bitter root for hundreds of years. But to the mage it requires special preparation. It must be boiled and reboiled in the freshest of water no less than forty times! This reduces it to a strong-smelling syrup that makes a very potent reagent.

Mandrake Root

This rare plant extract, found only in the darkest, dankest corners of the foulest of swamps, is a most sought after magical reagent. It is also one of the most difficult of all reagents to prepare, for in being dug up the tap root of the mandrake plant must not be broken. Also, that root itself must be properly prepared, boiled and dried. Mandrake root can be found on the Bloody Marsh and in a place known as the Fens of the Dead, south of Paws.

Night Shade

This plant, found only in swamps, only blooms at night. The fungal cap from this rare and unusual mushroom may be either crushed or boiled into a tea. The mage must always use great care when handling nightshade, for it is not only a very potent hallucinogenic, it is also extremely poisonous.

Spider's Silk

While this is a common reagent, it can be very difficult to gather any significant quantity of it from any single source. Mages have been known to frequent caves and crypts and even run their own personal spider farms in order to maintain an abundant supply of spider's silk. It usually takes at least an ounce of silk to cast a spell.

Sulfurous Ash

The great quantities of ash generated by a volcanic eruption makes this a common commodity as far as magical reagents go, but one does usually have to travel in order to acquire a large quantity of it. In recent years the most common source of sulfurous ash has been the Isle of the Avatar, location of violent volcanic activity many years ago.

iii. The Mage's Words of Power



The final component necessary for the mage to cast a spell is the spoken mantra that constitutes the words of power. Far more than simple memorization of the words and their meanings is required. The mage must have a consciousness-altering comprehension of each individual syllable of a word of power. The pronunciation of each syllable resonates through the ethereal waves as the spell is being cast. Incorrect pronunciation invariably causes ethereal turbulence. Long periods of meditation upon each syllable and many hours of controlled breathing exercises are required before the proper use of the mage's words of power can be learned. The following is a list of the known syllables that make up the words of power.

SYLLABLE	MEANING
AN	Negate/Dispel
BET	Small
CORP	Death
DES	Lower/Down
EX	Freedom
FLAM	Flame
GRAV	Energy/Field
HUR	Wind
IN	Make/Create/Cause
JUX	Danger/Trap/Harm
KAL	Summon/Invoke
LOR	Light
MANI	Life/Healing

SYLLABLE	MEANING
NOX	Poison
ORT	Magic
POR	Move/Movement
QUAS	Illusion
REL	Change
SANCT	Protect/Protection
TYM	Time
UUS	Raise/Up
VAS	Great
WIS	Know/Knowledge
XEN	Creature
YLEM	Matter
ZU	Sleep

iv. Spellcasting



The mage is able to cast spells when the three elements — spellbook, reagents and words of power — are combined in one unique and fluid action. The mind of the mage must be properly focused, as some spells affect just one person, others affect a group of people and still others affect a specific area. As a mage's experience in casting spells increases, so too will the potency of many of his spells. Outside distractions and interference, as well as the intended target's natural resistance, might prevent the successful casting of any spell.

One factor over which the mage has no control is the state of the ethereal waves when a spell is being cast. While the ethereal waves are often subject to turbulence, such turbulence is a temporary condition.

v. Magical Spells

Once again, the author takes it upon himself to warn his readers that the following is included as nothing more than a matter of historical record. It is a statement of absolute fact that most of these spells do not work and many will turn back upon the user. The use of magic is strongly suspected to be the cause of a strange mental deterioration that can affect anyone who has practiced magic. The reader is strongly discouraged from experimenting with the spells listed here.

Linear Spells

There are certain spells that a mage will immediately be able to learn upon completing his apprenticeship. They are called Linear spells because they do not directly correspond to any of the eight circles of magic that exist in the ethereal waves. Linear spells are the only types of magical spells that require no reagents to cast.

AN ZU (Awaken)

This spell awakens one sleeping or unconscious creature.

AN FLAM (Douse)

This spell extinguishes any small, non-magical fire.

BET ORT (Fireworks)

This spell creates an impressive display of multicolored moving lights. When the mage becomes more experienced, he can use these lights to frighten his enemies, sometimes causing them to flee.

BET LOR (Glimmer)

This spell creates a small light source that lasts for a short period of time.

KAL LOR (Help)

This spell resurrects the mage and his party and teleports them to Lord British's castle, where they will be fully healed. Remember that this spell is usable only once by any mage.

IN FLAM (Ignite)

This spell generates a tiny missile of sparks that can ignite flammable material.

VAS KAL (Thunder)

This spell causes a single thunderclap to be heard, as if a terrible storm is imminent.

REL HUR (Weather)

This spell can create a storm or cause an existing storm to stop.

The Circles of Magic

There are eight circles of magical spells, each successive circle representing a more powerful level of magical energy. The ethereal waves are made up of eight rings or circles which correspond to the levels of the spells. Each circle is one of eight swirling vortices, all spinning one within another and expanding out through the universe. The more powerful the spell a mage casts, the deeper into the inner circles of the ether must the concentrated psychic energy of the mage penetrate.

Required for the mage are many, many hours of meditation, the strength of concentration, and the will to reach into one of the higher circles with his psychic energy. Every mage is fully aware that a backlash would upset our physical world, possibly harming the mage and those around him.

The First Circle of Magic

VAS AN ZU (Awaken All)

Reagents: Ginseng, Garlic

This spell awakens all unconscious members of the mage's party.

IN MANI YLEM (Create Food)

Reagents: Garlic, Ginseng, Mandrake Root

This spell creates enough food for the mage and each member in his party to have one meal.

AN NOX (Cure)

Reagents: Ginseng, Garlic

This spell cures poison and restores a person afflicted with paralysis. It has also been known to work against an assortment of other malicious maladies.

WIS JUX (Detect Trap)

Reagents: Spider's Silk, Nightshade

This spell reveals the location of all traps within sight of the mage and his party.

VAS AN FLAM (Great Douse)

Reagents: Garlic, Spider's Silk

This spell is a more potent version of the Linear spell Douse. It extinguishes all dousable items within a certain area.

VAS IN FLAM (Great Ignite)

Reagents: Sulfurous Ash, Spider's Silk

This spell is a more potent version of the Linear spell Ignite. It will cause all flammable items within a certain area to burst into flame.

IN LOR (Light)

Reagent: Sulfurous Ash

This spell is a more potent version of the Linear spell Glimmer. It creates a source of light that will illuminate a darkened area. This light source can travel with the party and lasts for a significant amount of time.

IN WIS (Locate)

Reagent: Nightshade

This spell reveals the sextant position of the mage, even when underground.

The Second Circle of Magic

AN JUX (Destroy Trap)

Reagents: Sulfurous Ash, Blood Moss

This spell destroys any one specific trap upon which it is cast.

ORT YLEM (Enchant)

Reagents: Black Pearl, Mandrake Root

This spell causes up to an entire bundle of arrows or bolts to become enchanted and glow blue. Enchanted missiles will always hit their target and do significantly more damage than normal.

VAS FLAM (Fire Blast)

Reagents: Sulfurous Ash, Black Pearl

This spell causes great jets of flame to burst forth from the mage and strike his target.

VAS LOR (Great Light)

Reagents: Sulfurous Ash, Mandrake Root

This spell is a more potent version of the First Circle spell Light, and has a substantially longer duration.

VAS AN NOX (Mass Cure)

Reagents: Mandrake Root, Garlic, Ginseng

This spell cures the mage and all members of his party at once.

UUS SANCT (Protection)

Reagents: Sulfurous Ash, Ginseng, Garlic

This spell temporarily makes its subject more difficult to strike in combat, as well as rendering him invulnerable to traps and other hazards.

ORT POR YLEM (Telekinesis)

Reagents: Blood Moss, Mandrake Root, Black Pearl

This spell allows the mage to manipulate objects without touching them.

POR ORT WIS (Wizard Eye)

Reagents: Blood Moss, Nightshade, Mandrake Root, Sulfurous Ash, Black Pearl, Spider's Silk

This spell enables the mage to extend his sight out over great distances, passing through any barriers that exist between himself and anything he wishes to look at.

The Third Circle of Magic

DES SANCT (Curse)

Reagents: Sulfurous Ash, Nightshade, Garlic

This spell is a minor curse that temporarily makes an enemy easier to hit in combat, while making it harder for him to strike the mage or any member of his party.

MANI (Heal)

Reagents: Ginseng, Garlic, Spider's Silk

This spell heals half the injuries that its subject has sustained.

AN POR (Paralyze)

Reagents: Spider's Silk, Nightshade

This spell paralyzes an enemy in his tracks for a short period of time.

VAS WIS (Peer)

Reagents: Nightshade, Mandrake Root

This spell gives the Mage a look at the entire world as well as showing his location in it.

IN NOX (Poison)

Reagents: Nightshade, Blood Moss, Black Pearl

This spell enables a mage to poison one enemy.

VAS UUS SANCT (Protect All)

Reagents: Sulfurous Ash, Ginseng, Garlic, Mandrake Root

This spell is the equivalent of casting the Second Circle spell Protection on everyone in the mage's party simultaneously.

IN ZU (Sleep)

Reagents: Nightshade, Spider's Silk, Black Pearl

This spell causes the enchanted person to fall asleep.

KAL BET XEN (Swarm)

Reagents: Nightshade, Mandrake Root, Blood Moss

This spell summons swarms of insects to attack the enemies of the mage from all directions.

The Fourth Circle of Magic

KAL XEN (Conjure)

Reagents: Spider's Silk, Mandrake Root

This spell summons a wild beast that will fight for the mage against any enemy.

ORT GRAV (Lightning)

Reagents: Black Pearl, Sulfurous Ash, Mandrake Root

This spell enables the mage to cast a bolt of lightning that will strike his target. This lightning is so destructive that no armor can protect its wearer from it.

KAL POR YLEM (Mark)

Reagents: Mandrake Root, Black Pearl, Blood Moss

This spell creates a magical (but invisible) "mark" on any of eight specific colored stones. The Fourth Circle spell Recall can then be cast on that stone.

VAS DES SANCT (Mass Curse)

Reagents: Sulfurous Ash, Nightshade, Garlic, Mandrake Root

This spell is similar to the Third Circle spell Curse, but it affects an entire group of the mage's enemies.

KAL ORT POR (Recall)

Reagents: Mandrake Root, Black Pearl, Blood Moss

This spell is a minor spell of teleportation. Casting it on a Marked stone takes the mage and his party back to where the Mark spell was cast on that stone.

WIS QUAS (Reveal)

Reagents: Sulfurous Ash, Blood Moss

This spell makes visible all things that were invisible within a specific area.

KAL WIS CORP (Seance)

Reagents: Blood Moss, Mandrake Root, Nightshade, Spider's Silk, Sulfurous Ash
This spell allows the mage to speak to all recently dead ghosts, until sunrise. If one were travelling to Skara Brae, the wise mage would have a healthy supply of appropriate reagents to cast this spell many times.

EX POR (Unlock Magic)

Reagents: Sulfurous Ash, Blood Moss
This spell unlocks magically locked items, including doors and chests.

The Fifth Circle of Magic

AN XEN EX (Charm)

Reagents: Black Pearl, Nightshade, Spider's Silk
This spell can be used either to ensorcell an enemy or creature into doing the mage's bidding, or to free one who is under the effects of a charm.

POR XEN (Dance)

Reagents: Mandrake Root, Garlic, Blood Moss
This spell makes everyone in sight (except the mage and his party) start to dance.

AN GRAV (Dispel Field)

Reagents: Garlic, Black Pearl, Sulfurous Ash, Spider's Silk
This spell can dispel any type of magical field, such as a Fire Field.

VAS FLAM HUR (Explosion)

Reagents: Mandrake Root, Sulfurous Ash, Black Pearl, Blood Moss
This spell creates a ball of flame that rushes toward the mage's intended target and explodes.

IN FLAM GRAV (Fire Field)

Reagents: Black Pearl, Sulfurous Ash, Spider's Silk
This spell creates a wall of fire between the mage and his enemies.

VAS MANI (Great Heal)

Reagents: Ginseng, Spider's Silk, Mandrake Root, Garlic
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This spell completely heals an injured person.

SANCT LOR (Invisibility)

Reagents: Nightshade, Blood Moss
This spell renders the mage undetectable, not only from sight but to all means of normal detection. There are certain creatures that, for various reasons, are capable of seeing invisible objects or people.

VAS ZU (Mass Sleep)

Reagents: Ginseng, Nightshade, Spider's Silk
This spell is a more potent version of the Third Circle spell Sleep. It puts to sleep a group of targets that are not in the mage's party.

The Sixth Circle of Magic

QUAS WIS (Cause Fear)

Reagents: Nightshade, Mandrake Root, Garlic
This spell causes such a wave of fear that each man and creature who is not in the mage's party might flee as if in danger of death.

IN QUAS XEN (Clone)

Reagents: Sulfurous Ash, Spider's Silk, Blood Moss, Ginseng, Nightshade, Mandrake Root
This spell creates an exact duplicate of any mortal creature, who will then fight on the same side as the original.

KAL FLAM GRAV (Fire Ring)

Reagents: Sulfurous Ash, Black Pearl, Mandrake Root, Spider's Silk
This spell create a ring of fire that will encircle the mage's target.

VAS IN FLAM GRAV (Flame Strike)

Reagents: Sulfurous Ash, Black Pearl, Blood Moss
This spell creates a field of fire at the feet of all the mage's enemies that are within sight.

VAS ORT HUR (Magic Storm)

Reagents: Mandrake Root, Nightshade, Sulfurous Ash, Blood Moss

This spell summons a swirling storm that will randomly attack the enemies of the mage with powerful bolts of lightning.

IN NOX GRAV (Poison Field)

Reagents: Nightshade, Spider's Silk, Black Pearl
This spell creates a field of energy that will poison all who come into contact with it.

IN ZU GRAV (Sleep Field)

Reagents: Ginseng, Spider's Silk, Black Pearl
This spell creates a thick wall of energy field where the mage desires. All who enter this energy field will fall asleep.

VAS POR YLEM (Tremor)

Reagents: Blood Moss, Sulfurous Ash, Mandrake Root
This spell creates violent tremors in the earth that will cause the mage's enemies to tremble frantically. The effects of this spell will not inhibit the mage or his party.

The Seventh Circle of Magic

REL YLEM (Create Gold)

Reagents: Mandrake Root, Spider's Silk
This spell changes a chunk of lead into ten gold nuggets.

CORP POR (Death Bolt)

Reagents: Black Pearl, Nightshade, Sulfurous Ash
This spell enables the mage to project a bolt of lethal energy at a specified target.

TYM VAS FLAM (Delayed Blast)

Reagents: Mandrake Root, Sulfurous Ash, Black Pearl, Blood Moss, Spider's Silk
This spell causes whatever it is cast upon to violently explode, destroying much of the surrounding area. The explosion is delayed long enough to give the mage and his party time to get out of range of the blast.

IN SANCT GRAV (Energy Field)

Reagents: Mandrake Root, Spider's Silk, Black Pearl, Sulfurous Ash
This spell creates an electrical field that

protects the mage by harming all who attempt to pass through it.

IN HUR GRAV YLEM (Energy Mist)

Reagents: Mandrake Root, Nightshade, Sulfurous Ash, Blood Moss
This spell causes an electrified mist that flows from the caster, enveloping his enemies and harming them as long as they remain within it.

VAS AN XEN EX (Mass Charm)

Reagents: Black Pearl, Nightshade, Spider's Silk, Mandrake Root
This spell is similar to the Fifth Circle spell Charm, but it affects an entire group of the mage's enemies.

IN VAS POR (Mass Might)

Reagents: Black Pearl, Mandrake Root, Ginseng
This spell doubles the strength and combat abilities of everyone in the mage's party.

VAS MANI (Restoration)

Reagents: Ginseng, Garlic, Sulfurous Ash, Mandrake Root
This spell instantly heals all injury, dispels all harmful magic and cures all poison or paralysis inflicting the mage and his party.

The Eighth Circle of Magic

VAS KAL AN MANI IN CORP HUR TYM (Armageddon)

Reagents: Black Pearl, Blood Moss, Garlic, Ginseng, Mandrake Root, Nightshade, Spider's Silk, Sulfurous Ash
This spell is believed to be so powerful that it may be capable of destroying all known living things in the entire world. Fortunately, this spell has never been cast!

VAS CORP HUR (Death Vortex)

Reagents: Mandrake Root, Nightshade, Sulfurous Ash, Blood Moss
This spell creates a swirling black vortex at the point the mage designates, which will thereafter move at random. Everyone within this vortex will be continuously struck by lightning.

VAS SANCT LOR (Invisibility All)

Reagents: Mandrake Root, Nightshade, Blood Moss, Black Pearl

This spell is the equivalent of casting the Fifth Circle spell Invisibility upon the mage and everyone in his party.

VAS CORP (Mass Death)

Reagents: Garlic, Ginseng, Mandrake Root, Nightshade, Blood Moss

This spell causes everyone in sight (except the mage and his party) to instantly drop dead.

IN MANI CORP (Resurrect)

Reagents: Garlic, Ginseng, Spider's Silk, Sulfurous Ash

This spell, when successful, empowers the mage to restore life in one who has died.

KAL VAS XEN (Summon)

Reagents: Mandrake Root, Garlic, Blood Moss

This spell summons a powerful creature that will fight for the mage and his party.

IN JUX POR YLEM (Swordstrike)

Reagents: Black Pearl, Nightshade, Mandrake Root

This spell creates a deadly pinwheel of eight spinning swords that sails toward the designated target.

AN TYM (Time Stop)

Reagents: Mandrake Root, Garlic, Blood Moss

This spell stops the passage of time for the entire world, with the exception of the mage and his party.

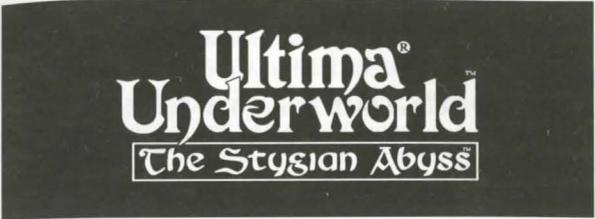
vi. Cosmology

There was once a time when much consideration was given to the phases of the moon and the movements of the heavens. There was much concern over an event, the reoccurrence of which is eminent, called the "astronomical alignment." It was said that the astronomical alignment would create a gateway between this world and another. In recent times the astronomical alignment has been all but forgotten. With the end of the time of magic, it is doubtful that such an event will have any significance to anyone but astronomers.

During this time of magic, a strange form of travel existed, through doorways of light that were often called "Moongates." There were at least two types of Moongates—blue and red. Blue Moongates sprang up wherever fragments of extra-terrestrial rocks called "moonstones" were buried. These gates allowed magical travel from one gate to another.

Red Moongates are generated by the powerful artifact known as the Orb of the Moons. A red Moongate can take a traveller anywhere in Britannia. It has even been said that it can also be used to travel to other worlds. There have only been two red Moongates in all of known existence—one used by Lord British, and the other by the Avatar.

Little is known about these gates, but like magic spells, Moongates no longer function as they once did. Use of Moongates today cannot be discouraged strongly enough. They are dangerous and their use in this less-than-reliable state has resulted in numerous fatalities.



Ultima[®] Underworld[™] The Stygian Abyss[®]

Installation Guide

System Requirements

Computer. A 386SX or higher IBM-PC or 100% compatible system.

Video Card. An IBM VGA or compatible video card with at least 256K of video ram. (Note: MCGA, as found on the PS/2 model 25 and model 30, will not work).

Free RAM. You must have at least 640K of low RAM (memory) to play *ULTIMA Underworld*. Of that 640K, at least 522K of low memory must be available at the DOS prompt to run the *minimum* game configuration. Other configurations may require as much as 557K free.

EMS. In addition to 522-557K of free RAM, you must have at least 480K (491520 bytes) of *expanded memory* available at the DOS prompt. The game won't run with less than that. Expanded memory above 480K (up to a maximum of 1 megabyte) is used to speed play.

Hard Disk. You must have at least 8 megabytes of hard disk space available. This allows you to install *ULTIMA Underworld* in its smallest configuration. Other configurations require as much as 13 megabytes of hard disk space.

Installation

1. Insert the CD-ROM into your CD-ROM drive.
2. Type the letter of your drive followed by a colon, then press Enter. For example, if your drive is drive D, type "D:" <Enter>.
3. Type "CDUW" to change to the Underworld directory.
4. Type "INSTALL D: C:." Substitute the appropriate drive letters for your CD-ROM and hard drives. Ultima Underworld is installed to your hard drive directory "UW."
5. From the UW directory, run "UWSOUND" to set up your Sound Blaster. Select "Save and Exit" to save the settings.
6. Type "UW" <Enter> to start Ultima Underworld.

Memory Usage

Requirements

ULTIMA Underworld requires 640K of main RAM and at least 480K expanded memory. Of the 640K, at least 522K must be available at the system prompt. The game will not run with less.

- *Music and sound effects* alone require additional free RAM.
 - PC Speaker (sound effects only) requires approximately 8K over the base 522K (a total of 530K).
 - The Sound Blaster and Sound Blaster Pro require approximately 31K over the base 522K (a total of 553K).
 - The Roland LAPC-1 and Roland MT-32 require approximately 20K over the base 522K (a total of 542K).
- *Digitized speech* alone requires additional free RAM.
 - The Sound Blaster and Sound Blaster Pro require approximately 6K (a total of 528K).
- *Music, sound effects and digitized speech* together require the most memory.
 - The Sound Blaster and Sound Blaster Pro require a total of approximately 557K to run music, effects and speech.
 - Using a Roland MT-32 and LAPC-1 for music and effects with either Sound Blaster board for speech requires a total of approximately 549K free.

Available RAM

To find out how much memory you have available, run CHKDSK or MEM, two DOS programs designed for this purpose. If you use CHKDSK, look at the last line of the information presented. If you use MEM, look for the line describing the largest executable program size. This tells you how much RAM memory is free. For example, CHKDSK might tell you that your 640K system has 519490 bytes free.

Continuing the Sound Blaster example above: You must have 557K free to play the game with both sound and speech. (That's 570368 bytes.) If CHKDSK tells you that you have 519490, for example, you don't have enough free memory and the game will not run.

Freeing RAM

If you don't have enough memory to run *ULTIMA Underworld*, you may want to remove memory-resident programs that are unnecessary for system usage from your AUTOEXEC.BAT and CONFIG.SYS start-up files.

You can view these files by using the DOS TYPE command. (Enter "TYPE AUTOEXEC.BAT" at your DOS prompt to view your AUTOEXEC.BAT file.)

To edit your AUTOEXEC.BAT or CONFIG.SYS files, use any commercial text editor or word processor capable of saving files as "text only." Either EDIT, the text editor included with DOS 5.0, or EDLIN, the text editor included with earlier versions of DOS, will do the job. Consult your DOS manual for information about modifying files with EDIT or EDLIN.

Do *not* delete your AUTOEXEC.BAT or CONFIG.SYS files completely — without them, your computer will not function.

Making a New Floppy Boot Disk

If you need more free RAM, but do not want to reconfigure your system, make a bootable system floppy disk to start your computer prior to play. Refer to the **Problems with the Game** section at the end of this manual for more information on making a boot disk.

Expanded Memory

Memory beyond 640K can be allocated as *expanded memory*. Expanded memory is not the same as *extended memory* — if your computer has extended memory, reconfigure it as expanded memory.

To access expanded memory on 386 systems, you must use an expanded memory manager program. Two of the most common ones are Quarterdeck's QEMM.SYS, and EMM386.SYS (which comes with Microsoft *Windows* and DOS 5.0) but there are others. These memory managers are installed by adding a line to the CONFIG.SYS file on your computer.

The Microsoft memory manager allocates only 256K of expanded memory unless you specify a greater amount. Consult your documentation and allocate at least 480K of expanded memory — 500K to 1 megabyte is even better. (Note that you must have 480K of *available* expanded memory. Memory resident software can use up some of the available memory, so you may have to allocate more than the minimum 480K in order to run *ULTIMA Underworld*.)

In addition, you must have HIMEM installed to use the *Windows* memory manager. Your CONFIG.SYS file should include the following lines in this order:

```
DEVICE=<PATH>\HIMEM.SYS  
DEVICE=<PATH>\EMM386.SYS 480
```

"<PATH>" is the directory in which these files are found (usually C:\WINDOWS, if you use *Windows* or C:\DOS, if you use DOS 5.0). The number 480 indicates the amount of memory you want to access as expanded memory. You should allocate more, if you can.

Consult your hardware dealer or your expanded memory manager's documentation for more information about configuring expanded memory and determining how much expanded memory is available.

Hard Disk Space

ULTIMA Underworld requires at least 8 megabytes of hard disk space to install. As you add features, however, the space requirement grows. Additional features require extra hard disk space, as follows:

- *Animating Cut Scenes* require an additional 3 megabytes of hard drive disk space.
- *Music and Sound Effects* require an additional 300K of hard drive disk space.
- *Digitized speech* requires an additional 2 megabytes of disk space on your hard drive.

To determine how much free hard disk space you must have to install the game, add the number of megabytes required for each option you want to the minimum of 8 megabytes.

For example, the full game — including animating cut scenes (+3 megabytes), Roland sound (+300K) and Sound Blaster digitized speech (+2 megabytes) — requires a little more than 13 megabytes of free hard disk space.

In addition to the space required to install the game, you must have an additional 700K free to begin play. This space is required for saved games. If you don't have this 700K free when you try to play, the game will not run.

Troubleshooting

ULTIMA Underworld fails to load or run.

- *You may not have sufficient free RAM.* Run the CHKDSK or MEM program included with DOS to check your computer's available RAM. To do this, type "CHKDSK" or "MEM" after the prompt for the drive in which you have installed the game. In CHKDSK, compare the last line on-screen to the 534,528 bytes of free RAM required. In MEM, consult the third line ("largest executable program size"). Free up RAM if needed.
- *You may be using a memory manager program that uses up too much base RAM to run ULTIMA Underworld.* For example, depending upon your system configuration, EMM386.SYS (the Expanded Memory Manager included with Microsoft *Windows*) may use too much of your 640K to permit *ULTIMA Underworld* to run.
- *Your CONFIG.SYS file may need to be modified.* If you get a message that reads, "Internal Error" or "Underworld can no longer run. Error code ####," edit your CONFIG.SYS file so the line reading "FILES=##" reads "FILES=20" (or more). This should allow you to play the game.
- *You may have a memory-resident TSR program that conflicts with the game.* Boot the computer from a DOS system floppy (as in "Making a New Floppy Boot Disk," above) or remove memory-resident programs before running the game.
- *You may have chosen an invalid configuration during the install process.* Check your configuration and, if necessary, re-install the game.

- *You may have filled all free space on the active disk drive.* Use the DOS DIR command to check available hard drive space. You need at least 8 megabytes on your hard drive to install the game and 700K of free hard disk space to run it.

My mouse pointer doesn't respond properly.

Some rare combinations of hardware and software cause mouse conflicts that freeze the on-screen pointer. If your mouse pointer ever stops moving, press Alt-F4 to free the mouse and allow the pointer to move normally.

My game runs too slowly.

Your computer may not be fast enough to run the game efficiently. The minimum configuration is a 16 MHz 386SX, but movement and animation are faster and smoother on a faster computer. From the main game screen, select the Options icon, followed by "Detail." Experiment with the various detail levels until you find a balance between speed and detail that suits you.

When I select PC Speaker sound effects all I get are "Beeps" and "Boops".

There's nothing wrong with your speaker or your game. The PC speaker sound effects are not intended to be realistic. They do, however, provide important feedback (whether you hit a creature in combat, for example).

I want to play different characters in different games.

ULTIMA Underworld allows you to save up to four different games at once. You can save four different points in a single character's adventure or you can save one character's adventure in the first saved game slot, another character's adventure in the second slot, and so on. Any combination of characters and saved game slots is possible (up to the maximum of four).

I've tried saving my game, but I keep getting a message that says, "SAVED GAME FAILED."

Each saved game takes up approximately 300K of hard disk space. If you don't have that much available, you can't save. To get around this, you can save your new position over an existing saved game. Select the Options icon from the main game screen, followed by the "Save Game" option. Then, simply select a saved game slot you've already used. When you are asked to enter a name for the game, press e to use the same name as the old game, or type in a new one. In addition, you must have 700K of free hard disk space available when you begin a session.

None of the suggestions above seem to help.

If you get an error message you don't understand, or you can't solve an ULTIMA Underworld problem, call ORIGIN Customer Service. Refer to the **Problems with the Game** section at the end of this manual for contact information.

Reference Section

Beginning Play

Install the game, following the directions in the Install Guide. Type CD\UW to change to the directory and type UW <Enter> to begin play.

The first time you play, typing UW takes you to the title screen, followed by the introduction. Press Esc to bypass the titles and/or introduction and go to the Main Menu.

If you have played (and saved) the game, typing UW takes you to the Main Menu.

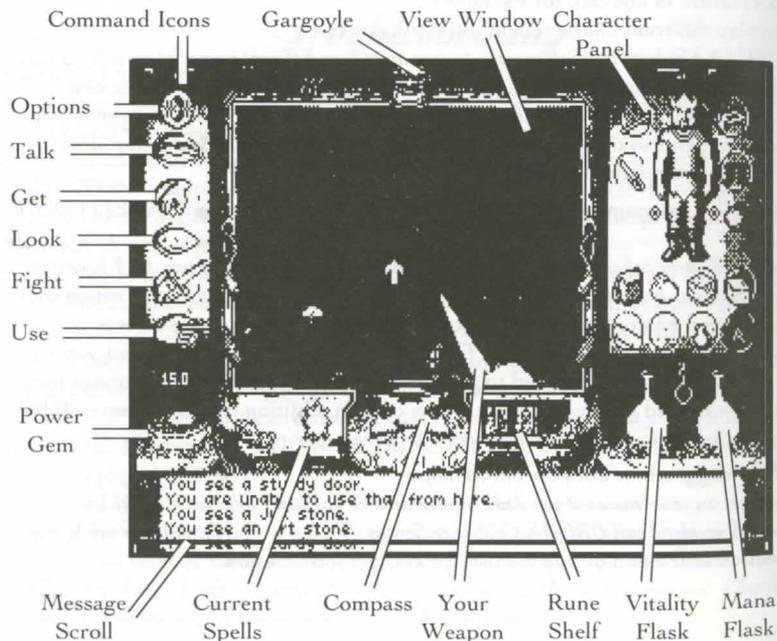
Main Menu

To select an option with the mouse, click on it. With the keyboard, use the arrow keys to highlight it, then press Enter to select it.

Create Character. Choose before you begin a new game. Use the mouse or arrow keys and follow the directions on-screen to make selections.

Introduction. Allows you to watch the introduction. (Press Esc to exit at any time.)

Acknowledgements. Lists the people who created *ULTIMA Underworld*.



Journey Onward. If you have saved games, a list appears when you select Journey Onward. Move the pointer to the game you wish to play and click either button. (With the keyboard, use the arrow keys to highlight your choice and press Enter.)

Main Game Screen

When you Journey Onward, the main game screen appears.

3-D View Window. The view window shows what you see:

- As you move, the view changes to reflect your new position.
- When you take damage in combat, the window shakes.
- When you are critically wounded, the screen flashes red.
- When you are drowning, the screen flashes blue.

Normally, you look straight ahead, but you can look up and down:

- To look down, press 1 repeatedly.
- To look up, press 3 repeatedly.
- To return to the "straight ahead" position, press 2.

Character Panel. Three panels share this position, and you can switch from one to the other at will.

- The **inventory panel** shows all items you are carrying and wearing. From the inventory panel:
 - Left-click the rune bag in your inventory to flip to the rune display.
 - Click on the pull chain to flip to the statistics panel.
- The **statistics panel** displays detailed information about your character's skills and current condition. Click on

the pull chain to return to the inventory panel.

- Your **rune display** shows all of the runes you own. Click on the pull chain to return to the inventory panel.

On these panels, the right mouse-button triggers the action specified by the command icon selected; the left button selects, moves or uses an object.

Vitality and Mana Flasks. Shows your current Vitality or Mana as compared to your maximums. If the Vitality flask is green, you are poisoned.

Rune Shelf. Click on runes in your rune display and they appear here. Click on a rune here to cast the spell represented by the runes on the shelf.

Compass. Indicates the direction you are facing. The red dot always points north. The arrows on the base of the compass allow you to use Easy Move mode. Clicking on the compass itself gives you an indication of your character's condition and overall situation.

Message Scroll. Displays messages and results of commands.

Power Gem. In combat, the gem glows red, then yellow, then green, then sparkles as you put more power into an attack.

Current Spells. Icons represent active duration spells.

Command Icons. Access the game option panel, and determine whether the right mouse-button allows you to Look, Get, Use, Fight or Talk.

Gargoyle. During the view window is a gargoyle. During combat, the glow in its eyes changes as the condition of your foe changes:

- *Green* eyes mean your foe is still strong.
- *Yellow* means the foe is hurt.
- *Red* means the foe is seriously injured.

Movement

Walking, Running, Swimming. Press and hold the left mouse-button while the cursor is in the 3-D view window. The further from the center of the window your cursor is, the faster you move. The shape of the cursor determines direction:

-  Move forward
-  Turn right or left while moving forward
-  Turn right or left with no forward movement
-  Sidestep right or left
-  Move backwards

Jumping. Press the right mouse-button while the left button is down. (In fight mode, press J or Shift-J on your keyboard.) Your speed determines how far you jump:

- Standing still, you jump straight up.
- Walking or running, you jump in the direction of your movement; distance jumped increases with speed.

Flying. Cast a *Fly* or *Levitate* spell, or use an appropriate magic item. Use E to rise into the air. Use the normal movement commands to determine your direction of flight. Use Q to lower yourself.

Interacting with the World

Default Mode. If no icons are highlighted, you are in Default Mode. (To "un-select" a highlighted icon, click on it.)

Talk. Put the cursor on the person or creature and briefly right-drag the mouse.

Get. Position the cursor on the object, press and hold the right mouse-button. If the object is "get-able," it will be put in-hand when you drag the object somewhere on the screen. Release the button to drop the item.

Look. Right-click on the creature or item you want to examine.

Fight. Move the cursor to your inventory and click on the weapon in your weapon-hand. Click on the weapon again to exit fight mode.

Use. To use an object in your inventory, left-click it. To use an object in the view window, position the cursor on the object, and briefly right-drag it.

Note: To access the game options menu you must click on the Options icon or press the appropriate keys on the keyboard.

Icon Mode. Use the right mouse-button to interact with things in the underworld. The command icons determine what the right button does.

Options Icon. Click on this to bring up a list of game-related functions and to pause the game. Click on the function you wish to access:

• **Save Game.** Preserves your current game state. You can have up to four saved games at once. Each saved game requires about 300K of hard disk space. Always save before ending a game session.

• **Restore Game.** Begins the game at a point you saved. Click on this option, then on the roman numeral that matches the name of the saved game.

• **Music.** Toggles music on or off.

• **Sound.** Toggles sound effects on or off.

• **Detail.** Increases or decreases the level of graphic detail.

• **Return to Game.** Resumes play when you're done selecting options.

• **Quit Game.** Returns you to DOS. (This does *not* save the game.)

Talk Icon. Left-click this icon, then right-click the character you want to talk to.

Get Icon. Left-click this icon, then right-click the object you want to pick up.

Look Icon. Left-click this icon, then right-click the object or area you want to look at.

Fight Icon. Left-click this icon. To attack, right-click and hold until you're ready to attack, then release the right button.

Use Icon. Left-click this icon, then right-click the object you want to use. For actions that require a target, left-click this icon, then right-click the object you wish to use (putting it "in-hand"). Move the object in-hand over the "target" object and right-click again.

Healing

To regain lost Vitality (or shake off the effects of poison), you must eat and sleep, or cast healing magic.

The healing spells are *Lesser Heal*, *Heal* and *Greater Heal*, in order of the Vitality they restore. These do *not* restore Mana.

To regain Vitality *and* Mana, you must sleep. Press F10 or use a bedroll. When you awaken, you regain some percentage of lost Vitality and Mana. If you are hungry, sleep does less to revitalize you.

Pausing the Game

With a mouse, click on the Options Icon. This pauses the game and brings up a menu of options. To unpause, click on "Return to Game." On the keyboard, press F1 to pause, Esc to unpause.

Magic

Magic requires three things:

Mana. The Mana point cost of a spell is triple the Circle of the spell.

Character Level. Your character level, halved and rounded up, must equal or exceed the Circle of the spell.

Rune Stones. The rune stones required to cast each spell are listed below.

Casting Spells. If the three conditions above are met, you can attempt to cast a spell. To do so, click on the rune bag in your inventory, then click on each rune required to cast the spell, in order. When the runes appear on the rune shelf, left-click anywhere on the rune shelf.

Targeting Spells. Some spells must be targeted. When you left-click the rune shelf to cast such a spell, a targeting cursor appears on screen. For combat spells, the targeting cursor is a red circle. For non-combat spells, the cursor is a blue cross.

Spell List

First Circle

Create Food	IAA
Light	II
Magic Arrow	FA
Resist Blows	BIH
Stealth	HP

Second Circle

Cause Fear	PL
Detect Monster	NA
Lesser Heal	IBA
Rune of Warding	IF
Slow Fall	RMK

Third Circle

Conceal	BHI
Lightning	FX
Night Vision	PI
Speed	RHK
Strengthen Door	HP

Fourth Circle

Heal	IA
Levitate	PK
Poison	FA
Remove Trap	FA
Resist Fire	HP

When a targeting cursor appears, position it on the person, creature or object you wish to target, then right-click to unleash the spell. (You may or may not succeed.)

Fifth Circle

Cure Poison	FA
Fireball	KP
Missile Protection	XHK
Name Enchantment	FHA
Open	MA

Sixth Circle

Daylight	AI
Gate Travel	ARK
Greater Heal	IAA
Paralyze	FMK
Telekinesis	FKA

Seventh Circle

Ally	IAR
Confusion	AHN
Fly	APK
Invisibility	AHI
Reveal	FPI

Eighth Circle

Flame Wind	HP
Freeze Time	PI
Iron Flesh	IHH
Roaming Sight	FKN
Tremor	AKA

Combat

Using a Hand Weapon.

1. Click on a weapon in your weapon hand (or on the Fight icon) to enter fight mode.
2. Position the cursor on your target.
3. Hold down the right button until the weapon is drawn back (You can continue to move by pressing the left button while the right button is pressed.)
4. With the weapon drawn back, the power gem begins to brighten, indicating how much power you are putting into the attack.
5. Release the mouse-button to attack. (If the gem is still red when you release the button, your attack is aborted.)

Types of Attack.

Back. Press the right button when the cursor is high in the view window.

Slash. Press the right button when the cursor is in the middle of the view window.

Thrust. Press the right button when the cursor is low in the view window.

Missile Weapons

1. Ready a missile weapon by placing it in your hand on the Inventory panel. Make sure you have ammunition in your inventory. Enter fight mode.
2. Press and hold the right mouse-button to initiate an attack (screen location doesn't matter).
3. When the jewel is green, your weapon is ready to shoot and a red, circular cursor appears.
4. Move the cursor where you want to aim your weapon.

5. Release the mouse-button to unleash the attack.

Conversation

To talk to a character or creature:

1. Click on the Talk icon.
2. Position the cursor over the character you wish to talk to, then press the right mouse-button to bring up the conversation screen. The other person's comments appear on the large scroll in the center of the screen. Your response options appear on your message scroll.
3. Move the yellow cross onto the option you want and click either button (or press the number of the statement you want to make).
4. Read the other person's response and pick one of your own. If you see the word "[MORE]" at the end of a comment, click either mouse-button or press any key to see the rest of what the other person has to say. If you see the word "Other" in your list of choices, you have the option of typing in something that isn't on your list.
5. If you have the last word in the conversation, you return to the main game screen automatically. Otherwise, click either mouse-button or press any key.

Bartering

1. Select the option on your conversation option list that says you want to trade items.
2. Get items you are willing to trade and put them in your barter area.
3. Click on items in either barter area to select or deselect them for the current trade.

4. Offer the deal by clicking on the appropriate menu line, or click on "I must think about this deal" to use your *appraise* skill.

5. If the person or creature with whom you are trading accepts the deal, any items you offered disappear into your trading partner's inventory. Now, you may move traded items from his barter area into your inventory.

6. If the deal isn't accepted, you can change the highlighted items in either barter area and try again.

7. At the end of a bartering session, any items that now belong to you appear on the floor in front of you.

Giving and Getting Items

1. Place the item you wish to give or show in your barter area.

2. Select a conversation option like "I wish to give you this gift." The character takes the item from your barter area, or simply looks at it, depending on the circumstances.

3. If a character gives you something, it appears on your cursor, allowing you to place it in your inventory.

Repairing Items

Some characters in the Abyss offer to repair items. To have a broken item repaired, place it in your barter area *before* you select the option requesting the repair.

To repair damaged weapons or armor yourself:

1. Use an anvil as you would any item.
2. When your cursor turns into an anvil, click on the broken item.

3. A message appears telling you how difficult the repair will be and asking if you want to continue.
4. Select "Yes" or "No."

Keyboard Controls

When using a keyboard, note that the game is case sensitive — Shift-A is not the same as A.

Also, there are some keyboard commands for which there are no *mouse* equivalents — even mouse users must use these. These commands are listed below in *italics*.

Menus

- ↑ Up to next option above
- ↓ Down to next option below
- ← Left one column
(2-column lists only)
- Right one column
(2-column lists only)

- Pg Up** Top of List
- or **Home** Top of List
- Pg Dn** Bottom of List
- or **End** Bottom of List

Normal Movement

- W** Run Forward
- Shift W** *Easy Move Run Forward*
- S** Walk Forward
- Shift S** Easy Move Walk Forward
- A** Turn Left
- Shift A** Easy Move Left
- D** Turn Right
- Shift D** Easy Move Right
- Z** Slide Left
- C** Slide Right
- X** Walk Backwards
- Shift X** *Easy Move Backwards*

Other Movement

- E** *Fly Up*
- Q** *Fly Down*
- 1** *Look Down*
- 2** *Center View*
- 3** *Look Up*
- Shift J** *Standing Long Jump*
- J** Jump

Combat Mode Keys

- P** Bash
- /** Slash
- .** Thrust

Special Function Keys

- F1** Game Options/Pause Game
- F2** Talk Mode
- F3** Get Mode
- F4** Look Mode
- F5** Fight Mode
- F6** Use Mode
- F7** Flip Character Panel
- F8** Cast Spell
- F9** *Use Track Skill*
- F10** Sleep

Game Options

- Ctrl S** Save Game
- Ctrl R** Restore Game
- Ctrl M** Change Music
- Ctrl F** Change Sound Effects
- Ctrl D** Change Detail Level
- Esc** Return to Game
- Ctrl Q** Quit Game

Cursor Movement Keys

- Tab** Move cursor one hot area right
- Shift Tab** Move cursor one hot area left

Numeric Pad

- 1-9** Cursor Direction
- 0** Left Mouse-Button
- .** Right Mouse-Button

Creating Your Character

Through the choices which you make at this time, you fashion the type of hero you wish to guide through this adventure. Each option is represented by a button. To make a choice, use the mouse to move the cursor onto the option button you want to select and click either mouse-button. (You may also use the cursor keys to highlight the option you want — a highlighted option appears raised — and then press Enter to select the option.)

In order, the choices you must make are:

Choose Player Sex. *Male* or *female*. Controls whether your Avatar is a man or a woman, and which portraits you may select later. Gender has no effect on your character's strength or abilities.

Select Handedness. *Right* or *left*. Determines which hand you use to hold your primary weapon, and which is your shield-hand.

Class.

Fighter. A warrior, trained in the military arts since youth.

Mage. One born with the ability to cast spells.

Bard. A traveling entertainer, perhaps a storyteller or a musician.

Tinker. A skilled craftsman, particularly with weapons and armor.

Druid. A guardian of the woodlands, able in both combat and magic.

Paladin. A warrior who also has some grasp of the art of spellcasting.

Ranger. A woodsman, skilled at tracking, hunting and fighting.

Shepherd. A resourceful sheep-tender, often a jack-of-all-trades.

Pick Skills. Your character description includes several skills — abilities you have honed and tasks you have practiced. Many of these skills come automatically, as a result of the character class you choose. (For instance, all Mages can use magic so they all begin with *casting* and *mana* skills.)

In addition to innate skills, you are asked to select some skills unique to your character. For instance, you may give your Fighter *sword* skill, or you might choose *axe*, *mace*, *missile weapon* or the *unarmed* combat skill. When the skill selection list appears on the right-hand side of the screen, simply click on the skill you want for your character.

For now, pick skills that sound useful and interesting. Later, you can consult the skill list on page 50 and create carefully honed characters.

Portrait. Select the appearance of your character by clicking on one of the five pictures that appear on the right-hand side of the screen.

Choose Difficulty. *Standard* or *Easy*. In easy mode, monsters and hostile characters are less dangerous and are easier to defeat than in standard mode. (Note that you

can't change this after you begin playing — to change the difficulty level, you must begin a new game.)

Name. The last step in creating your character is to give him or her a name. Type in the name of your choice, then press the Enter key when done.

Keep This Character. Finally, the game asks you whether or not you want to play the game with the character you have just designed. If this character is acceptable, answer "yes." Otherwise, select "no" and you can design another character.

In the Underworld

(NOTE: This tutorial walks you through the beginning of your adventure in the Abyss. It assumes you have a mouse. To play without a mouse, consult the Keyboard Control section for keyboard equivalents of the commands described.)

Once you finish designing your character, you automatically begin the game.

The Main Game Screen.

(For a diagram of the Main Game Screen, refer to page 6.) This is the screen you will see most of the time. In the center is the **View Window** — the Stygian Abyss as your character sees it. To the right of this is a **Character Panel** which usually displays a picture of your character and any items he or she is carrying. At the bottom of the screen is a **Message Scroll** where text is displayed. On the left side of the screen are six **Command Icons** which allow you to look at and interact with creatures and objects you encounter in the underworld. Other elements of the game screen — the **Compass**, the **Rune Shelf**, the **Power Gem**, the **Vitality Flask** and the **Mana Flask** — will be explained later.

Try moving your mouse around the screen — but don't press any of the buttons yet. As you move the mouse in the view window, an arrow-shaped cursor mimics your mouse movements. Outside the view window, the cursor takes the form of a yellow cross.

Saving Your Character

Before you do anything else, save the game. If you die before saving, you will have to go through the character creation process again.

1. First, click on the "O" icon (for "Options") on the left side of the screen.
2. When the option list appears, click on "Save Game."
3. Click on the roman numeral "I" icon.
4. When the words "<not used yet>" appear in the message scroll, type in a name for your saved game and press Enter or either mouse-button.
5. You return to the game automatically and can now begin exploring.

Looking Around

First, examine your surroundings. Move the cursor into the view window, and notice how the shape of the arrow changes depending on where it is. Near the middle of the screen, the arrow changes into cross-hairs. Moving to the right makes the arrow point to the right; moving to the left makes the arrow point left.

In the view window, the shape of the arrow controls which direction your character moves. To move, press and hold the left mouse-button. Your character moves as long as you hold the button down.

For instance, move the arrow to the right side of the screen, then move it up or down until the arrow bends and nearly forms a circle — this allows you to turn in place, without moving forward or backward. With your cursor in this position, press the left mouse-button and hold it down.

The view in the window shows what you see as you turn around. If you're just starting a game, you see a dark corridor ahead of you and a bag to your right. Behind you are the closed (and locked) doors through which you entered the Abyss. To your left is a skull and, on the wall, a carved message.

As you spin around, note that the compass below the view window spins too. The compass shows which direction you are facing — the red-tipped point of the compass indicates north.

Occasionally, looking at or using objects calls up a scene that temporarily replaces the view window. When you're finished looking at one of these scenes, click either mouse-button or Enterto return to the view window.

Maneuvering

Now you're ready to try moving around. Two rules govern movement:

Rule 1. While your cursor is inside the view window, its shape determines the direction in which you move if you press and hold down the left mouse-button. If it points right, you'll move to the right; if it points upward, you'll move forward, and so forth.

Rule 2. The speed at which you move depends on how far your cursor is from the center of the view window. When the cursor is exactly centered, it changes into a cross and you don't move at all. As you move the cursor closer to any edge of the view window, you move faster.

To practice setting speeds, turn until you are again facing down the long corridor leading deeper into the Abyss (the corridor opposite the huge double doors at the entrance). Remember, you turn by using the nearly-circular cursor arrows, as you did before — this pivots you in place, without moving you forward. Then release the mouse-button to stop your turning motion. Now, move the mouse until

the cursor turns into an upward-pointing arrow, and then press and hold the left mouse-button. This moves you forward. Shift the mouse so that the cursor moves toward the top of the screen and you will move faster and faster until you release the mouse-button. When the arrow points downward (toward the bottom of the view window), you will move backward.

Try clicking the right mouse-button while you're moving forward — this causes you to jump. The faster you're moving, the farther you jump.

Don't worry if you slam into a wall — you can't hurt yourself by walking into walls. Flying (or jumping) into a wall *will* cause injury.

When you feel comfortable walking, running, turning and jumping, turn around and walk back to the double doors.

Easy Move Mode. If you have difficulty maneuvering in 3-D space, try using the arrow keys on the base of the compass below the view window. The curving left and right arrows turn you 45 degrees in the direction of the arrow you click. The up arrow in the center of the compass moves you forward four feet. Press X to move back (two feet with each keypress). There is no mouse equivalent for the X command. Though less realistic than "normal" movement through the dungeon, using the arrows might make it easier to maneuver through the dungeons.

Interacting With the World

The first thing to do when beginning the game is to find some equipment — a weapon, armor, food and so forth. Fortunately the bag close at hand holds several useful items. To find out what's in the bag, use the command icons on the left side of the screen. In order from the top of the screen, these icons are:

the "O" symbol	Options
the lips	Talk
the hand grasping an object	Get
the eye	Look
the sword	Fight
the hand holding a key	Use

Selecting these various icons (only one of which can be active at a time) allows your right mouse-button to perform different tasks. We'll address each of these as the need arises. (For an explanation of the "Options" icon, see page 32.)

Advanced tip: The icons are easy to use and give you a good understanding of the way ULTIMA Underworld works, but if you are an experienced game-player and mouse-user, you can access many commands without using the icons! If none of the icons are highlighted, you enter a very useful shortcut mode called "Default Mode."

If you're just learning to play ULTIMA Underworld, we recommend using the icons for a while (and this tutorial assumes you will do so). Eventually, however, perhaps even before

you complete this tutorial, you will want to try the icon-less default interface. For an explanation of Default Mode, see page 29.

Looking at Things

Click on the Look icon with either button, then move the cursor over the bag, and click the right mouse-button. (Don't press the left mouse-button — that will cause your character to move.) Pressing the right button in Look Mode causes your character to Look at an object — what you see is printed on the message scroll. Turn until you are facing the bag and Look at it. The words on your message scroll read, "You see a bag."

Looking Up and Down. You might have trouble seeing the bag on the floor, unless you tilt your character's head and look down. To do this, press 1 at the top of your keyboard — each time you press this key, your character's head tilts a little further downward, until it finally reaches its maximum. To look up again, you can either press 3 (which lets you look up a little more, every time it is pressed) or 2 (which returns your head to its normal viewing angle).

Note that 1, 2 and 3 on the numeric keypad control cursor movement and can't be used to look up or down.

Getting Things

Now, pick up the bag and examine its contents. First, make sure that the inventory side of your character panel is displayed. This is the side with your character's picture on it. (If this picture isn't visible, click either button on the chain below the right-hand panel.)

The circles at the bottom of the character panel are for inventory — objects your character is carrying but which aren't necessarily ready for immediate use. The circles surrounding the picture of your character are for objects your character is wearing or holding — armor, weapons, rings, lit torches and so on.

To pick up the bag, change to Get Mode by clicking on the Get icon (the third one from the top) and move your cursor until it is on the bag. (Look down, using 1, if you have trouble seeing the bag.) Now, press and hold the right mouse-button and move the mouse. You now have the bag "in-hand." The cursor assumes the shape of the bag and, as long as you keep the right mouse-button pressed, moves around the screen as you move the mouse.

Move the bag over to one of the empty circles at the bottom of your character panel. Release the right mouse-button and the bag settles into place in your inventory.

Manipulating Your Inventory. To open the bag, click on it with the left mouse-button. The contents are now displayed on the inventory panel. If you don't

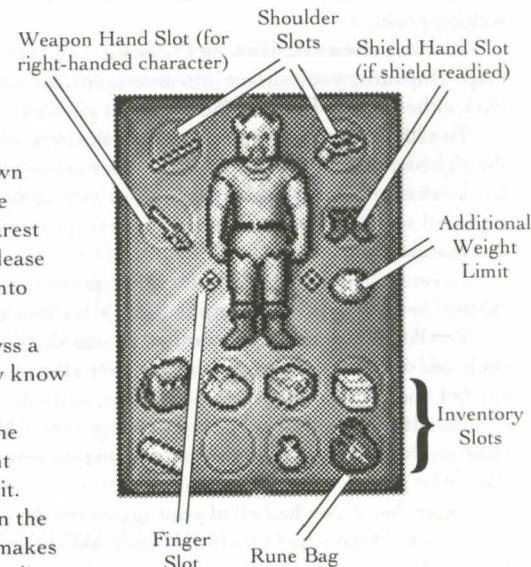
recognize any of the items, you can find out what they are by Looking at them. For instance, click on the Look icon, then move the cursor over the object that looks like a stick and press the right mouse-button — the message scroll now reads, "You see a somewhat used torch."

Looking at an object may tell you the nature and condition of the item you are looking at. Right-clicking the sword-like object, for instance, reveals that it is a dagger, and that it is in "badly worn" condition. However, it is the only weapon you have, so place it in your weapon hand. If your character is right-handed, your weapon hand is your right hand — otherwise, it is your left hand. (Note that your character's "right" hand is *not* the hand to the right on the screen, but the *figure's* right hand.) To move the dagger from the bag in your inventory to your weapon hand, place the cursor on the dagger, press and hold down either mouse-button, and drag the dagger to the inventory circle nearest your weapon hand. When you release the button, the object will settle into place.

The torch will make the Abyss a much brighter place. You already know how to move items within your inventory, so move the torch to the circle above your character's right shoulder. Now you want to light it. Click on the Use icon and then on the torch. Notice the difference this makes in the view window. (If you Use a *lit* torch, you snuff it out.)

The food in this bag — an apple, a fish and a loaf of bread — can be ignored for now, but your character will eventually become hungry. Always make sure you have food available.

Perhaps the most important item in the bag is the square parchment, which a Look will tell you is a map. The game automatically updates this map as you move about the Abyss. Place the cursor on the parchment and click the left mouse-button — a full-screen map appears.



The Auto-Map. There isn't much on your map at this point, since you haven't gone anywhere yet — the walls of your current room and the bit of corridor you explored are sketched in brown ink, your position is noted by the yellow pushpin, and the cursor is a quill pen. If you want, you can write notes to yourself directly on the map.

For instance, mark your starting location for future reference: Move the quill-pen cursor to your current location on the map and press either mouse-button. The quill pen shifts into writing position — whatever you type will now be added to the map. (Try typing, "START.") When you are done with the comment, click either mouse-button (or press either Enter or Esc) to return the quill pen to its non-writing position.

To erase a remark, click on the eraser symbol in the lower right corner of the map. This turns your cursor into an eraser. Move the eraser to the comment and click either mouse-button. The comment goes away.

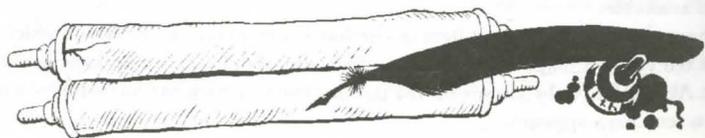
To call up maps of levels other than the first, click on the dog-eared corners on the right-hand side of the map. The upper corner allows you to examine higher levels while the lower corner allows you to examine deeper levels. Since you haven't explored any levels other than the first yet, you will have to wait to experiment with this feature.

To return from the map to the game, press Esc or move your cursor to the "Close" symbol at the lower right, and click either mouse-button.

You'll want to use the map often, so you shouldn't keep it inside a bag. Right-click-and-hold on the map symbol on your character panel, drag it over the bag symbol above the lower inventory circles, and release the button. (This takes the map out of the bag, but keeps it on your person.) Now left-click the bag symbol to close the bag and return to the main inventory screen. The closed bag and the map should be side-by-side.

(Note that if you had all of your inventory slots full, dragging the map to the bag symbol would have had no effect — to move the map out of the bag, you would have had to empty an inventory slot to make room for it.)

You can click on the map any time you want to get a fix on your location.



Dropping Objects. Now, you know how to pick things up and manipulate your inventory, but what if you want to get rid of something? At this point, you want to keep everything you've found, so we'll have to fudge a little — there's a skull around here somewhere. It'll do.

Turn until you are facing the wall to the west — the wall with the carved message on it. (When the red "North-point" on the compass below the view window points to the three o'clock position, you are facing west.) Now, move forward. You may accelerate right into the wall, but don't worry — running into walls doesn't hurt you in *ULTIMA Underworld*. Back up a bit so you can see the message carved into the wall. (Read the message by clicking on the Look icon and right-clicking on the carving.)

The skull is just below the graffiti on the wall. Click on the Get icon, then use the right mouse-button to click and drag the object into your inventory. (If you are too far away to get the skull, move closer.)

You certainly don't need to carry this skull around, so drag it out of your inventory and put it back on the ground. (Remember, when you drag an item, the cursor assumes the shape of that item.) To rid yourself of the skull, you can either drop it or throw it.

To drop the skull on the ground, drag the skull-shaped cursor to anywhere in the bottom third of the view window, and then release the button.

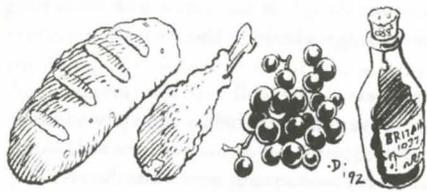
To throw the skull, release the button while the skull is in the top two-thirds of the view window. (The skull is pretty tough, but some objects break or bounce upon impact.) If there is an obstacle in front of you, a thrown object falls to the ground in front of you.

If you're too close to an obstacle (the wall, for example), you may not be able to drop the skull at all. Any time you find you are unable to drop or throw an object because you are too close to a wall or door, try backing up a bit.

Opening Doors

Turn until you are facing north (i.e., until the red point on the compass is in the 12 o'clock position) and walk down the corridor again. This time, stop and look at all the objects you see. As you walk, you come across an axe (a Look will reveal that it is broken), ashes, bones and other rubbish. Mid-way down the corridor, in a recess in the right-hand wall, you'll find a door. Right-click to look at it and read the description on the screen's message scroll.

Click the Use icon and then the door to try to open it. You'll discover that it is locked, and you don't have a key. But there's another way to open this door — turn to face the door and back up a bit. There, on your right, is a pull-chain. Right click on the chain to Use the chain to pull it and open the door.



Walk through the doorway and bear a little to the left — there's another bag! Using the bag spills the contents onto the ground so you can examine the items without adding them all to your inventory.

In this bag, you find a cudgel, a mushroom and a candle. First, pick up the now empty bag. Leave the candle, for the moment, and pick up the mushroom and the cudgel. (Click the Get icon, right-click and drag each object into your inventory and release the button over an inventory circle.)

Selecting Weapons

Now you have a decision to make — should you leave the dagger in your hand or move that out of the ready position and replace it with the cudgel? To make this decision, you need to know more about your skills. Click on the chain below the character panel and the panel flips around to your statistics panel.

This panel contains a great deal of information about your character, but right now we're concerned with the skill list at the bottom of the panel. To scroll through the list, click on the up- or down-arrows below the skill list.

If your character has the *mace* skill, you probably want to use the cudgel rather than the dagger. If your character's *mace* score is zero, check the *sword* skill. If you have that skill, stick with the dagger (and go looking for a better dagger or sword!). If you have neither skill, ready whichever weapon you prefer — the dagger does less damage than the cudgel, but you will be able to attack more frequently with it.

Now click the chain below the stat panel to flip back to the character panel. Move whichever weapon you want into your character's weapon hand.

Dealing with Grouped Items

There is still a candle on the ground. Since your torch won't last forever, you should pick it up. (Candles don't provide as much light as torches, but they burn longer and some light is better than none at all...)

When you try to pick up the candle you find there's something different about it — it's actually *several* candles! When you click the Get icon and then the candle, the message "Move how many? 1" appears in the message scroll. To take just one of the candles, click with the left button. The right button would take all of them if clicked, or you could type in a number from the keyboard, then press Enter. Now you can move the candle(s) just as you would any other object.

Items of the same type can usually be stacked within a single circle on your inventory panel — for instance, five torches are generally shown as one torch symbol, with the numeral "5" above it. The only time you can't stack identical objects is if their "quality" is different. For instance, you can't stack a "somewhat used" candle in the same circle with "halfway used" candles.

Further Exploration

Turning left and right, you see two doors in this room. Trying to open them (by clicking the Use icon and then right-clicking the door), you find that they're both locked — and this time, there are no pull-chains. Without a key, there's nothing more you can do here short of "attacking" the door repeatedly to batter it down. This is possible, but it takes time and could damage or destroy your weapon. For now, go back out into the main corridor and head west.

Keep going until the east-west corridor ends, then turn to the right (north). Here, in an alcove, you find a torch, a bowl and an axe. Look at each of these items, note their condition, and get them. (If you have the *axe* skill, put the axe in your weapon hand.)

Now check the compass and head south. Beyond the east-west corridor that brought you here, you'll pass the remains of an adventurer and come upon some strange blue and gold objects. These are **rune stones** — the stuff of magic. Pick these up and put them in your inventory. There isn't much you can do with them right now, but they'll come in handy later.

Continue on until the corridor turns to the right (west again) and you enter a room with a large stone block in the center. Go around the block — it doesn't matter whether you go to the north or the south.

Past the block, you find a pack. Put it in your inventory and click on it to examine its contents. Inside, you find a scroll, a red key, a rune bag and some runes.

Read the scroll (by right-clicking it in Look mode) and then leave it behind or carry it, at your discretion (it doesn't weigh much).

The red key should open some of the locked doors you've encountered.

The magic items are very important. The rune bag allows you to cast magic, but only if you have the proper rune stones inside. Pick up each rune stone and drag it on top of the rune bag — this actually puts the stone inside the bag. (You can use this method to place anything inside of any bag or pack.) Be sure to put in the stones you found earlier, too.

You want your rune bag to be accessible, especially if you're a mage, so drag the rune bag onto the pack symbol above the lower inventory circles, moving it to a more convenient inventory location.

Magic

With a rune bag and some rune stones, you may be able to cast spells — even if you aren't a mage. The amount of Mana you have and your *casting* skill level determine how successful you can be with magic.

Preparing a Spell. Before you can cast a spell, you must prepare it. Try to anticipate your needs and have a spell (like *Resist Blows*) ready for use in an emergency or keep a common spell (perhaps *Light*) ready simply because you expect to use it repeatedly.

To prepare a spell, open your rune bag. Go to the inventory section of your character panel, and left-click the rune bag — this causes the character panel to flip, revealing the **Rune Panel**. The rune stones are shown here in alphabetical order, with empty squares representing stones you haven't yet collected.

Now take note of the empty rectangle just to the right of your compass — this is the **Rune Shelf**, where your readied spell is displayed. Left-clicking on any stone on the rune panel causes that stone to appear on the shelf. When all of the stones necessary to cast a spell are on the rune shelf, the spell is considered prepared.

Necessary Rune Stones. The rune stones you find in the pack are *Bet*, *In*, *Lor* and *Sanct* (B, I, L and S). The spell tables in this guide reveal that these stones can be used to cast three spells: *Light* (using I and L), *Resist Blows* (B, I and S), and *Conceal* (B, S and L). However, *Conceal* is a spell of the Third Circle, so it is beyond the ability of a beginning mage — the other two spells, being of the First Circle, are possible.

In addition to the *Bet*, *In*, *Lor* and *Sanct* runes, you already had *Ort* and *Jux* (O and J). With these, you may also be able to cast the *Magic Arrow* spell (OJ) and, when you reach a higher level, the *Rune of Warding* spell (IJ) and the *Strengtben Door* spell (SJ).

Casting a Spell. All that is necessary to cast a prepared spell is to left-click on the runes on the rune shelf, regardless of whether your rune bag is open or closed. If you have the required Mana, and the correct runes on the shelf, the spell will eventually work — but the number of attempts required will depend on your character's *casting* skill level. The higher your level, the better your chance of succeeding at a spell. Characters with lower *casting* ratings may have to try over and over in order to get a spell to work. Fortunately, there is no penalty for a casting failure unless the spell backfires — a rare occurrence.



(If you make a mistake in laying out your runes, you can erase the rune shelf by clicking on the symbol at the bottom of the rune panel. This represents the rune stones being replaced in the rune bag.)

Once a spell is successfully cast, the blue **Mana Flask** drains to reflect the amount of Mana used up.

Playing It Safe

You're about to embark on a journey — it may seem like you're going out of your way and retracing your steps, but it will pay off in the long run.

First, go to your auto-map and write yourself a note indicating your current location. Then, go back to the main corridor and the door you opened by pulling the chain. It's to the east — refer to your automap, if you lose your way. Go through the door and find the locked door to the south in the room beyond.

Now use the red key you found in the pack. First, approach the locked door. Then open the pack in your inventory, click on the Use icon and then click on the key to put the key in-hand. You will be asked what you want to use the key on. Move the key-shaped cursor to the door and right-click. Since the key fits the lock, it unlocks the door. Use the door and it will swing open.

(Many usable objects — keys, anvils, poles, lockpicks, rock hammers, even bones you wish to bury — require specific targets. All are used in the manner described above.)

Proceed straight ahead through the door. On your right is a message carved in the wall. Look at the message to read it. Now, turn to face the plant at the far end of the room — this is the Silver Sapling. Get the plant and it will wither, leaving you with a seed. Plant the seed somewhere in this room. To plant the seed, place it in your inventory, then click on the Use icon and then the seed. If there is floor space in front of you, the seed will take root. (If you have trouble planting the seed, back up or turn around until there is more room in front of you and try again. Make sure there is dirt ahead of you or the seed won't grow.)

Now, if you die in combat, you will be resurrected in the spot where you planted the seed. If you die without having done this, you return to the main menu and must create a character from scratch and start all over (or restore a saved game, if you have one).

Retrace your steps, using the auto-map if necessary, and go back to the room where you found the pack. You're about to pick a fight, and the Silver Sapling may prove your salvation.

(At some point you will want to Look around the Silver Sapling room carefully, examining walls, objects and everything else — there is a secret door in the area, but you'll have to look carefully to find it. This secret door can be seen on-screen if you keep your eyes open. Others are too well-bidden to be spotted by the naked eye. You're unlikely to find these unless a character tells you about them in conversation. Even then, you must click on the Look icon and look at the

walls. Your search skill takes over at this point and, if you're observant, a secret door will be revealed.)

Combat

Once you're back in the room where you found the stone block and the pack, take a look around. There are two doors — when you try to open them you will find that one is locked and the other is unlocked. You can try your red key in the locked door, but first open the unlocked door — a Use click will do the job.

Enter and use the Look icon to examine everything in the room — the first thing you'll probably notice is a giant rat. The rat is agitated, but it's not actively hostile (which means it won't leap to the attack). You'll also see some food and some armor.

If you want to, you can just try to take the items (probably starting with the armor). If the rat sees you take its food, it will get more angry, and since it is already upset, it will attack. If, however, you can grab the items while the rat is looking the other way, it won't notice, and you can saunter off with your newfound goods, none the worse for the experience.

However, in order to find out what combat is like in this game, you are about to attack the giant rat.

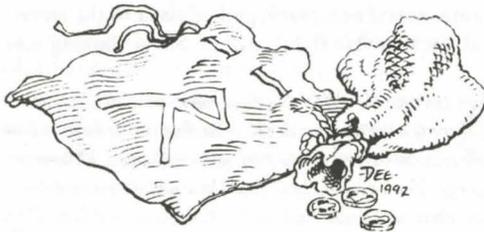
First, make sure you have your best weapon readied — the one in the best condition and with which you have the highest level of skill — then click on the Fight icon (the sword) on the left side of the screen. This readies your weapon. The tip of the weapon appears at the bottom of your view window.

(If your weapon does not come into view, and you see your fist instead, you may not have the weapon in your weapon band. The large circles near your hands, on the inventory panel, are the only places from which you can use a weapon — the circle to the left if your character is right-handed, and the right circle if your character is left-handed.)

Attacking. To attack, position the cursor over your target, then press and hold down the right mouse-button. This causes your weapon to disappear from the view window as you pull it back into the ready position. Releasing the button launches the blow. The location you're attacking is determined by where you *start* your

attack — where the cursor is when you first press the button — not by where you release the mouse-button to unleash the attack.

Be sure to hold down the right mouse-button long enough for the power gem just



left of the compass to begin glowing yellow or green — otherwise, you haven't drawn your arm back yet, and the blow automatically fails.

You will quickly notice that you can make several different kinds of attack — positioning the cursor high in the view window causes a bash, starting the attack in the middle of the window causes a slash, a low cursor unleashes a thrust. Some attacks prove more effective against certain foes — in this case, you're fighting a rat, and you want to swing middle and low (or look down and bash), as high swings go over the rat's head.

If the rat dodges, maneuver to keep it in view, using the left mouse-button as you would during normal movement. (You can move and attack simultaneously.) You might also want to look down (with 1).

Doing Damage (and Taking It). If your attack is successful, you will see a splatter of blood — the bigger the splatter, the more damage you did to your foe. (*Not all enemies bleed, but giant rats do — if your attack strikes home, you'll know it.*) If you are lucky, or if your character is particularly skilled in attack or if you are skilled with the weapon you are using, you might even kill the rat with a single blow — if so, you'll see a puddle of blood on the ground.

You will know if the rat injures you, because the view window rocks (as the attack knocks you back). If the attack seriously damages you, a sudden flash of red fills the entire window. To keep track of your health during combat, watch the red flask — if its level falls too low, this may be a good time to run for it!

If you defeat the rat, check your character panel — you will find that you've been given several experience points. When you have more, your character will grow in skills and attributes.

Collecting Booty. If you vanquish an enemy, his goods — his weapon, armor and other treasures — automatically fall to the ground, and you can claim them. Unfortunately, this rat has no treasure, but he does have his hoard: The cheese and the piece of meat are probably worth carrying until you need them. As for the leggings (armor for your legs), you should put them on.

To don the leggings (or any article of clothing or piece of armor), pick them up and release them over your character's legs on the inventory panel — in addition to the inventory circles surrounding the picture of your character (which represent things your character holds), the picture itself includes inventory slots for items you wear on your head, torso, hands, legs and feet. Select the Get icon and then drag the leggings onto the picture's legs. When you re-release the mouse-button, the armor settles into place there — your character is then wearing them.

And Should You Die.... If you die, you are resurrected where you planted the Silver Sapling seed. You can then try to defeat the rat again or continue exploring elsewhere.

Conversation

Now that you've engaged in combat, try a little peaceful interaction. Use the red key on the west door and venture on. After you enter this room, turn to the left and collect the bedroll you see. This will help you sleep better. In addition to the bedroll, there's a person in the room. Look at him and you will find that he is friendly. Click on the Talk icon and then position the cursor over the man and press the right mouse-button to strike up a conversation.

The Conversation Screen. When you do this, a large conversation scroll appears in the middle of the screen. Below the large scroll is your message scroll. Above and to the left of the large scroll is a portrait of the man with whom you are speaking and, above that, the man's name — Bragit. To the right of Bragit's portrait is his "barter area." To the right of that is your barter area and your character's portrait and name.

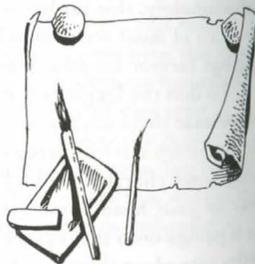
Selecting Responses. Bragit greets you with the words, "Hail, stranger! What be thy business? I have not seen thee in this place before." (His comments are printed in dark brown on the conversation scroll.) Below, on your message scroll, a menu of three possible responses appears:

1. I am merely exploring the Abyss.
2. I am attempting to rescue an innocent girl.
3. I was thrown in here as punishment for a crime I did not commit.

These are the things you can say to Bragit. The choice you make may determine how Bragit feels about you (friendly, angry, actively hostile, etc.) and what he says next, if anything. To select one of these responses, press the keyboard number of the option you want or move the yellow cross onto the option and click either button. Select the option you want now.

The response appears in light brown below Bragit's greeting, followed by his response to you. (The "[MORE]" at the end of his comment is a signal that he has more to say — click either mouse-button or press any key to see the rest of his conversation.)

Notice that you now have new response options in the message scroll. Continue selecting response options and reading Bragit's text until he says, "Good luck in thy travels." This is the response he gives when he is ready to end the conversation and go about his business. (Other people and creatures will have different closing lines...)



To leave conversation and return to the main game screen, click either mouse-button or any key.

Continuing to Play

These pages have provided enough tips to get you started in the underworld. At some point, you should read the **Advanced Playing Tips** for more information about the game.

Now you can venture forth on your own, using your native wits and sharp sword to cleave a route through the Abyss. Remember, there are plenty of locked doors to unlock and a secret door somewhere in the Silver Sapling room, and the man you talked with told you things you may want to investigate.

As you play, don't feel like you have to explore levels or solve puzzles and quests in any predetermined order. If a puzzle or quest has you stumped (or you just want to move on to a new level), go ahead — *ULTIMA Underworld* is a non-linear game. You can move freely from level to level, solve puzzles in any order you want and finish quests whenever you feel you're ready.

Now, if you want to stop playing, **exit the game** by selecting the Options icon, and then choosing the "Quit Game" option. Before doing this, however, save your game (see page 32) — otherwise, your progress to this point will be lost.

Advanced Playing Tips

Default Mode

In the tutorial above, you used the command icons to control the function of the right mouse-button and interact with the world. However, experienced players can perform almost all of the functions while in **Default Mode** — that is, with no icons selected. Any time none of the icons is highlighted, you are in default mode. (To "un-select" a highlighted icon, click on it.) In default mode, you can:

Look. To Look at a creature or object (whether in the view window or in your inventory), right-click on the thing you want to examine. In default mode, you can tell what an object is, but no more. To search something carefully, you must click on the Look icon to enter Look mode.

Get. To Get an object you see in the view window, put the cursor on the object, press and hold the right mouse-button and drag the object wherever you want. The game detects whether an object is "get-able." If the object is one you can't get, right-dragging will generally try to Use it. If it is "get-able," it will be put in-hand, and you can throw it, drop it or move it into your inventory (simply release the right button). In default mode the cursor is always arrow-shaped, so if you need to Get a small item it may be more convenient to enter Get mode (which gives you a cross-shaped cursor).

Use. To Use an object in your inventory, left-click it. To use an object in the view window, position the cursor on the object and right-drag it. If the object is "usable," you automatically Use it, as you would if you had clicked the Use icon. Note, however, that in default mode, the Get command takes a higher priority than the Use command, so you can only Use objects you can't Get (doors or levers, for instance). To Use a "get-able" object, click the Use icon and then the object.

Talk. To Talk to a person or creature, position the cursor on the person or creature and briefly right-drag the mouse. The game detects whether the person or creature is interested in conversation. If so, the conversation screen appears (as described in the tutorial above) and you proceed normally. If the person or creature isn't interested in conversation, you are informed of that fact and can proceed as you wish.

Fight. To toggle in or out of Fight mode, simply click on the weapon in your weapon-hand.

The Options Icon

Default mode allows you to do almost everything you will ever need to do within the game. However, to access the save or restore game features, toggle sound and music on or off, increase or decrease the level of graphic detail, or quit the game, you must use the Options icon. (Refer to the KeyboardControls section earlier in this manual).

When you click the Options icon, boxes appear on the left side of your screen, replacing the icons usually found there. Text in the boxes describes what each box does. To select an option, click on the appropriate box.

Save Game. Whenever you consider doing something you might regret later, it is a good idea to save your game. "Saving the game" is like placing a bookmark in something that you are reading, except that in this case it causes the game to store your current position and status. Once this has been saved, you can always go back and start again from the position you saved.

If, for example, you're about to begin combat and there is a possibility your foe will kill you, save the game and you can always start over from the point at which you chose to fight. Then you can fight him again, hoping for a better outcome, or this time make the decision to leave him alone!

To save your game, click with either mouse-button on the Options icon (the uppermost icon). Click on the "Save Game" box, and new options will appear in boxes: I, II, III or IV. Each of these is a possible save-game, or bookmark, from which you can resume playing the game. The message scroll provides a description

of each of the save-games. (The description for an unused saved game slot reads "<not used yet>.")

It makes no difference which save-game you select. Click on any empty box (or a box representing a saved game you don't mind replacing). Now the game asks you to type a description of this save-game. You want to enter something that will remind you where this bookmark is, and you can write as much as there is room for in the message scroll. When you are done, click either mouse-button (or press Enter), and your game is saved.

Note that you can't save a game when you have an item "in-hand," or you're in the middle of some action (casting a spell, for example).

Restore Game. During the course of play, your character may die or you may do something you wish you hadn't. You may just want to pick up where you left off in an earlier play session. This can be accomplished by restoring the game to a point at which you saved it.

Do this by clicking the "Restore Game" box, then the roman numeral which matches the save-game you wish to restore. When the game is ready, a notice appears on the message scroll, and you can resume play.

You can also restore a game from the main menu by selecting "Journey Onward" and then clicking on the name of the saved game you wish to play.

Music. This toggles music on and off, but has no effect unless you installed the game with music and sound effects.

Sound. This toggles sound on and off, but also has no effect unless you installed the game with music and sound effects.

Detail. The level of graphic detail in *ULTIMA Underworld* has a direct effect on game speed. If your game seems to be running too slowly, click on the Options icon and then on the Detail box. The default detail level is "Very High." To speed up game play, decrease that to "High," "Medium" or "Low." The game won't look quite as good, but it will run more smoothly, and faster. Experiment with this option until you achieve a pleasing balance of speed and graphic appeal.

Return to Game. When you click on the Options icon, the game pauses (combat stops, creatures freeze, time stops). When you want to exit the Options menu and restart the game, click on this box.

Quit Game. This returns you to DOS. Be sure to save your game before you do this, or anything you accomplished after your last save will be lost.

Your Character

To the right of the view window is your **Character Panel**. Generally, this displays a picture of your character surrounded by small circles. Each circle is a place you can store or carry an object.

Encumbrance. At the right center of the panel, look for the gray circle with glowing yellow numbers — this number represents how much more weight (in stones) your character can carry. This weight-limit number (in the gray circle) changes when you pick up an object, to reflect the fact that you now are carrying something.

The more you carry, the slower you move. Encumbrance also affects how far you can jump, and how long you can swim before you begin to drown.

If the weight-limit number ever reaches zero, then you are carrying your maximum load, and must drop something before picking up something new.

The Statistics Panel. Note the chain hanging from the bottom of the panel. Move the cursor to the chain, then click either mouse-button. This causes the character panel to flip over (or to flip back, when you click again). The side of the character panel which you are now viewing lists your character's stats: his or her name, class and level ("1st" for beginning characters, and higher numbers for more experienced adventurers), and other measurements which you previously saw when creating your character.

To become a more powerful character in the game — and thus, more capable in combat or with magic, for instance — you must accumulate **EXP** (experience points). These points are scored for exploring the Abyss, for slaying creatures which oppose you, and for accomplishing other noble tasks. When you start, your EXP score is very low, but this will change as you play.

Two other important measurements are your **VIT** (Vitality) and **MANA**. (Mana is like health, except that it is a measure of your magical energy. When you are out of Mana points, you can't cast spells.)

Both Vitality and Mana are represented by two numbers — the first is your current score, and the second is your maximum score at the present time. These scores will be different for every character, but if your Vitality score is 34/34, this means that you have 34 points out of 34 possible (in other words, you are in perfect health).

Attributes. The three primary measurements on every character panel are **ST** (your strength), **DX** (your dexterity or quickness), and **INT** (how smart your character is). The maximum score for any attribute is 30, and the minimum (for player characters) is 12.

Each character class (fighter, mage, etc.) has its own level for each attribute. For example, the scores for a fighter are a high Strength, medium Dexterity and

low Intelligence. In addition, each character class has its own advantages and disadvantages. Try creating characters of various classes to determine which combination of attributes and skills suits you.

Skills. Each class comes with its own required skills (which you receive automatically), and most also have optional skills (from which you may select a limited number).

Your Character's Condition

As you explore the underworld, you will grow hungry and tired. To learn your character's condition, get a status report. To do this, move the cursor until it is over the compass below the view window, and then click the right mouse-button. Your character's status appears on the message scroll.

At the start of the game, the message reads something like this:

"You are currently well-fed and wide awake.
You are on the first level of the Abyss.
It is the first day of your imprisonment.
You guess that it is currently early evening."

Being "well fed" means that you are not hungry; therefore, you don't need to eat anything right away. The second sentence clues you in to your location — the Abyss is divided into levels in much the same way a building is divided into stories. The first level is the uppermost portion of the Abyss. The last sentences give you an idea of what time it is — your first day, early evening.

Eating and Sleeping. If the message tells you your character is hungry or tired, you should consider sleeping or eating. When you sleep, you regain lost Vitality and Mana points. However, if you sleep on an empty stomach, your rest will be uneasy and you will recover fewer points. Therefore, it is wise to check your condition before sleeping — and if you are hungry, eat something (Use a piece of food in your inventory, or simply drag it over to your character's mouth on the character panel and release the mouse-button). You will also sleep poorly if too close to the lairs of beasts, and they might surprise you in your sleep.

To sleep, press F10 — or better yet, Use a bedroll (your sleep will be more restful). Extinguish light sources when you go to sleep. Otherwise, they may burn out and be useless to you when you awaken. Remember that spells fade after a time and may have to be re-cast when you wake up.

The Vitality and Mana Flasks. To determine your current Vitality and Mana, check the score on your stat panel or click on the flasks on the right, below the character panel portion of the screen. One flask holds a red fluid — the amount of

fluid in the flask represents the fraction of Vitality which you possess. At the start of the game, the red flask is full; if you fight a battle and lose half your Vitality points, the red flask will then show half-full. The flask with blue liquid serves the same purpose, except that it is a measure of how much Mana you have. Clicking on either flask will cause the message scroll to display the exact number of points you have remaining.

The flasks are important for another reason — if you are poisoned, the red Vitality flask changes from red to bright green. This might happen if you eat something bad for you, are struck by a poisoned weapon, drink a poison potion, receive a bite from a diseased animal, etc. Being poisoned gradually saps your vitality, so you want to take care of it quickly. One solution is to find an antidote potion, but the resourceful adventurer can find other solutions.

Improving Your Character

You are not limited to the abilities with which you start the game — they may improve as you advance further into the Abyss. All of this is controlled by **Experience Points**. You gain points for exploring the Abyss, slaying hostile creatures and performing heroic deeds. Points can be taken from you for less-than-heroic actions.

Gaining Levels. The most obvious way in which your character progresses is through gaining levels. At the start of the game, you are a first-level character. As you gain experience, however, you will rise to second level, third level and beyond (to a maximum of 16th level).

As a higher-level character, you become harder to kill (your Vitality rises) and you qualify to cast more powerful spells. Increases in character level are automatic with sufficient increase in experience points. Notice of the level increase appears on the message scroll.

Improving Skills. Another way in which you progress is through raising your skill scores. Such increases only come as the result of study and deep reflection, and so you must visit an ankh shrine and recite the proper **Mantra**. Ankh shrines are located throughout the Abyss.

Reciting a Mantra is not enough to receive the skill bonus — you must first qualify for it by having accumulated enough experience points. You always qualify for a skill bonus after you gain a new character level, but you can sometimes receive skill bonuses between level increases.

Whenever you come upon a shrine, Talk to it. The words “Chant the Mantra:” appear in the message scroll. Type in a Mantra followed by Enter. If you are not yet ready for a skill increase, the shrine will respond by saying “You are not ready to advance.” If you are ready for an increase, the shrine tells you which of your skills improves.

The amount and nature of the skill increase is determined by the Mantra you choose to recite. Three Mantras are commonly known:

Summ Ra	Improves some of your attack skills.
Mu Ahm	Improves some of your magic skills.
Om Cah	Improves some of your other skills.

Speak one of these Mantras and you increase in a few of the skills affected by that Mantra. However, as you explore the dungeon, you will learn Mantras that apply not to categories of skills, but to specific skills. Chant one of these Mantras and you will improve dramatically in the skill affected by the Mantra.

Movement

Jumping. You climb stairs and mount objects up to two feet tall by walking onto them. To climb onto an object higher than that, you must jump (or fly).

To jump, click the right mouse-button while the left mouse-button is down. If you press both mouse-buttons simultaneously, you will jump in place. To jump across a chasm or over an obstacle, make sure you get a running start. Press the left mouse-button and move the cursor to the upper edge of the view window. When you've built up speed (and you've reached the lip of the chasm), press the right button and you'll leap forward. How far you jump is determined by your forward momentum when you click the right mouse-button.

As a player convenience, the game will not let you walk off a precipice if you are moving slowly — so if you really mean to jump off a cliff, move swiftly to the edge. Note that you can't jump while in Fight mode.

Swimming. When you walk (or fall) into water you begin to swim. In *ULTIMA Underworld*, swimming is just like walking. However, you can't jump or attack while swimming. To leave the water, you must find a bank that is no higher than two feet above the water level. When you reach such a bank, you can automatically begin walking (or running) normally.

All characters can swim, but only for a limited time (the actual amount of time is determined by your character's *swimming* skill and encumbrance level). As your character tires, the screen blinks blue as you sink and begin to drown. Your Vitality level will begin to drop; when it reaches zero, your character dies.

If you drop an item into the water or onto lava, it will probably sink out of sight and, since you can't swim underwater, you won't be able to retrieve it.

Flying. In addition to walking, running, jumping and swimming, you may learn to fly, either by casting the *Fly* spell or by using a magic item that gives you this ability. The direction of movement is determined by the position of the mouse in the view window (or the standard keyboard movement keys). Movement up and down

requires the use of the keyboard. To move up, press E until you reach the desired altitude. To move down or land, press Q.

Lava and Movement. The Abyss is a volcano and sooner or later you will find lava flows. Generally, it is best to leap across molten lava if you want to cross it. You can walk on lava, but you take damage while doing so.

Inventory

Finger Slots. Notice the two small inventory circles near your character's hands. These are the finger inventory slots. One ring can be readied in each of these positions. In general, magical rings are only effective when worn (i.e., when they are readied in a finger slot).

The Four Upper Circles. Of the four upper circles, only the one near your primary hand can be used for your weapon. Only the one near your "off" hand can be used for a shield. The other two, your "shoulder" slots, are good places to put torches, your map or other items you want to carry around while keeping a weapon ready.

If one of the top four circles is empty and a torch is in one of the lower circles, clicking to Use the torch automatically lights it and moves it to an upper slot.

Combining Objects. In general, it is not possible to combine objects of different types. However, it is sometimes possible to make a new object by dragging an object in-hand on top of an object in your inventory. (For instance, you can drag a torch over an ear of corn to make popcorn.)

Bags and Packs. Keep the bags and packs you find, since you can use them to keep your goods organized. A typical adventurer might carry five or more bags — a food bag, a bag of keys, a bag of items to barter with, a bag of torches and candles, and a rune bag. You can also place bags inside of other bags. To take an item out of your bag but keep it in your inventory, drag it to the symbol of the opened bag. (Note that you can't take rune stones out of your rune bag).

Combat

The Elements of An Attack. Every time you attack, you must make three choices: Where to aim, the type of attack and the strength of the attack.

To **aim**, place the cursor on the creature or object you wish to attack. It is not necessary to pin-point a specific part of your foe — just pointing at the middle of his body is generally good enough for the purposes of this game. (But you wouldn't want to accidentally strike a door or a chest, instead of your enemy.)

Only one **type** of unarmed attack exists — the jab. Similarly, there is only one form of attack for each missile weapon (bow, sling, etc.). Other weapons — swords, daggers, maces and so on — can be used in a variety of ways. You determine the

type of attack you make by where the cursor is located when you first press the right mouse-button.

If you start in the top third of the screen, your attack will be a **bash** from overhead. Pressing in the middle third of the screen will begin a sideways **slash**, and pressing while in the bottom third will cause a **thrust**. The three forms of attack inflict different amounts of damage, depending on the weapon used.

The power gem on the screen, just below the icons to the left of the view window, indicates the **strength** of your attack. When you press the right mouse-button to begin an attack, the gem gradually turns red, then yellow and finally green. The longer you prepare an attack, the more damage it does if it hits its target. If the gem is still red when you launch your attack, the attack is aborted. A yellow gem indicates a quick, low-strength attack. When the gem is green and sparkling, your attack is at maximum strength.

Your Foe's Condition. This is indicated by the gargoyle at the top of the view window. When you hit a creature in combat, glance at the gargoyle's eyes. If they glow green, your opponent is still in good shape. If they glow yellow, he is injured and if the eyes glow red, you've injured him badly.

Using Missile Weapons. Bows and similar weapons work differently than other weapons. Ready a missile weapon by placing it in your hand on the inventory panel, making sure you have the appropriate type of ammunition in your inventory. If you don't have the right type of projectile for the weapon, you can't attack. (Bows use *arrows*, crossbows use *bolts*, and slings use *bullets*.)

Press the right mouse-button to initiate an attack (screen location doesn't matter), then wait for the power gem to glow green. When it is green, your missile weapon is ready to shoot — unlike other attacks, there is no bonus for delaying your shot further. A red, circular cursor appears. Move the cursor to your target, and release the mouse-button to unleash the attack. (Remember you have to lead a moving target...)

Some projectiles are destroyed on impact. You may be able to recover others after combat.

Attacking Inanimate Objects. In general, inanimate objects are not worth attacking — you can't do much damage to stone walls. However, some objects can be affected by repeated attack — you can bash open locked chests and batter down locked doors, for example. This is time consuming and may damage (or destroy) your weapon, but if you lack a crucial key or don't feel like taking the time to find one, it may be worth your while.

Weapons & Armor

To make the most of combat, you must understand the benefits and drawbacks of the various weapons and armor-types found in the Abyss. You should also pay attention to the condition of your equipment.

Weapon Types. There are four classes of weapons. Larger weapons usually do more damage, but take longer to ready between blows than smaller weapons.

Swords include **daggers**, **shortswords**, **longswords** and **broadswords**. Daggers can be readied swiftly, but inflict only light damage. Daggers are best used as thrusting weapons, while swords excel at slashing.

Axes include **hand axes**, **pole axes** and **battle axes**. Axes do more damage than swords, but take longer to ready. They are slashing weapons — only the pole axe is effective when thrusting, and no axe can bash very well. The battle axe is the most damaging weapon in the game (excluding enchanted or special weapons).

Maces include **cudgels**, **light maces** and **maces**. All maces are best used as bashing weapons.

Missile Weapons include **slings**, **bows** and **crossbows**. Missile weapons allow you to attack most creatures before they can attack you. The problem is that each shot requires ammunition, and it can be hard to find arrows (for bows) or bolts (for crossbows). Slings fire projectiles which are slow, easy to dodge and which don't do much damage...but sling bullets are easy to find. (You can always make more by breaking a boulder.)

Armor. There are three types of armor: **leather** (the least protection), **chain** and **plate**. As you find various pieces of armor, your character might soon be wearing protection of many kinds (leather leggings, a chain shirt and a plate helm, perhaps).

Armor degrades in quality as it suffers damage through combat, and eventually is destroyed (unless a talented smith can be found or you repair it yourself, using an anvil). Also, note that armor provides less protection as it deteriorates. Keep armor in good repair whenever possible.

Armor is also heavy — a complete set of plate armor may be too heavy for you to wear, especially if you want to carry anything else with you!

Shields. These are only effective when carried in the hand opposite your weapon hand — if your character is



right-handed, the shield must go in the inventory circle nearest his or her left hand. From least to most protective, the shields are: **buckler**, **small shield**, **wooden shield** and **tower shield**.

Conversation

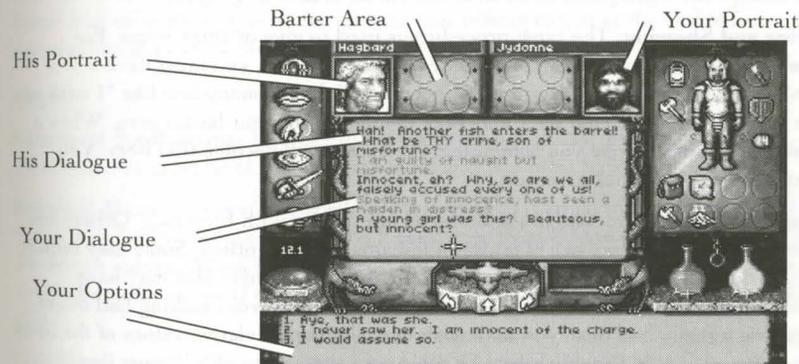
Many of the people and creatures you meet in the Abyss have tales to tell. Listening to them and helping them with their problems is an important part of the game.

Unless a person or creature seems obviously hostile, it is always in your best interest to try to engage him, her or it in conversation — attacking everything in sight will lead to failure in your mission and, in many cases, quick death.

You can talk to most of the humanoid inhabitants and may hold conversations with certain creatures in the dungeon. In general, you cannot speak to someone who is fighting you, but there are exceptions.

Characters often remember and react to how you treat them in a conversation. Intimidation may work on some, but may anger others. An angry creature may attack you.

In some conversations, you will see the response "Other," "What about..." or something similar. If so, you can type in a name, word or phrase.



Bartering

Many inhabitants of the underworld have equipment and food they are willing to part with in exchange for things they need — bartering is an important skill, one you will want to hone as you explore the depths.

Barter Areas. Sometimes in a conversation a character may ask to see items or you may want to show items. This is what the barter areas are for. The barter areas — the tables upon which traders display their wares — look just like normal inventory slots. If you want a potential trading partner to see an item you wish to trade, you must put it in one of the circles in your barter area.

Placing an item in the barter area automatically lights the dot next to the item. A lit dot indicates an item that is available for trade. Clicking on the item toggles the lit dot off, removing the item from consideration in a trade. No character can see what another has in his or her inventory. Put an item or items in your barter area and your trading partner will see it.

Procedure. Either you or the person you are talking to may initiate a barter session. When this occurs a number of items that the character is offering to trade will appear in his barter area. You may move any items you wish to trade into your barter area. Then, click on the items in the character's barter area that interest you to light their dots, and do the same for the items you are offering to trade for them in your barter area. You can then offer this deal to the character by clicking on a menu line that says something like "I offer you this trade."

If the character accepts your deal, the items you offered will disappear into his inventory, along with any items of his you did not bargain for. You may move the items you traded for from his barter area into your inventory. If he declines, you may change the highlighted items in either barter area and try again.

Giving and Showing. The same procedure is used to give or show items. For example, you may want to offer someone a gift. To do this, you must have a highlighted item in your barter area. When you click on a menu line like "I wish to give you this gift," the character may take the item from your barter area. When a character decides to give you something, the cursor will become that item. You should place it into your inventory.

Appraisal. Some characters in the dungeon are patient with bartering. Others lose interest quickly and may tire of it after a few unsuccessful offers. Some may require more profit for themselves before accepting a deal. Characters also may have different ideas about the values of items than you do. To avoid making bad offers, or getting a really bad deal, you may wish to evaluate the relative values of the items being offered. To do this, click on a line that says something like "I must think about this deal." A line evaluating the deal will appear in the big scroll. For instance, you may see the words, "You think you are getting a good deal." The accuracy of the evaluation depends upon your *appraise* skill.

Demands. One final option in bartering is to simply demand items from the other character. Once the character has agreed to barter and you can see what he is

carrying, you may demand that he give you certain items, by selecting the appropriate option in your message scroll. This is a very hostile act. Even if the character agrees to give you the items, his attitude towards you will worsen. If he thinks he is stronger than you, he will refuse, and he will attack you. You must be very careful of whom you demand things.

Repairing Items

Some characters in the Abyss may offer to repair items as part of their conversation. To have an item fixed, place the broken item in your barter area *before* you select the conversation option requesting the repair.

You can also try to repair damaged weapons or armor yourself, but you must first find an anvil. Success depends upon your *repair* skill level — it is possible to ruin something by attempting to repair it! Repairs also take time, and the noise attracts attention. To repair an item, you use the anvil as you would any item. Your cursor turns into a small anvil, which you then must click on the item you wish to repair. A message appears in the message scroll telling you how difficult the repair will be and asking if you want to continue. Select the "Yes" option and you attempt to repair the item.

Ending Conversations

To end a conversation or bartering session, you must say "farewell" (or the equivalent) by selecting it from your conversation options. Any items left in your barter area or in the character barter area that belong to you at the end of a conversation appear on the floor in front of you.

Magic

Successful Spellcasting. In order to have any chance to cast a spell successfully, your character must be of high enough **level** and you must have sufficient Mana.

Required Mana. The cost of a spell, in Mana points, is equal to triple the level of the spell — for example, a spell of the First Circle costs 3 Mana points to cast. Your character's current Mana level is the first of the two numbers which follows "Mana" on the character panel. If you currently have at least 3 Mana points, you can cast a spell.

Your Level and Spellcasting. To cast a spell, your character level, halved and rounded up, must equal or exceed the Circle of the spell. If you successfully cast a spell, your level comes into play again — before you can cast another spell, you may have to wait an amount of time determined by your level and the level of the spell cast.

Unsuccessful Spellcasting. Whenever you cast a spell, there is a chance you will fail. The higher your character's *casting* skill level, the less likely this is. In general, a failed attempt to cast a spell has no effect. You don't use up Mana points — you just waste some time. However, a failed spellcasting attempt *may* backfire (especially if your *casting* level is low). A backfire damages the caster.

Spell Types

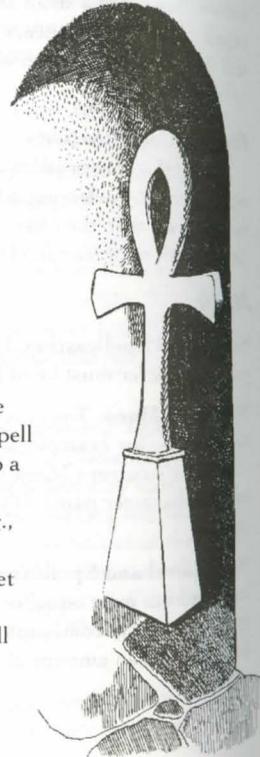
Spells come in three varieties. Some spells are **instantaneous**, taking effect as soon as they are cast. Many spells last for a period of time after they are cast — for instance, the **duration** of a *Light* spell is several minutes. Still other spells must be **targeted** — directed at a specific point. These last two spell-types require a bit of explanation:

Duration Spells. When you cast a duration spell, its symbol appears to the left of the compass. It is impossible to maintain more than three duration spells at the same time. If you want to cast a fourth duration spell, you must dispel one of the existing spells (by left-clicking its duration symbol). Right-clicking on the symbol of a duration spell causes the message scroll to display the name of the spell, and whether the spell will continue much longer ("stable" means time remains, "unstable" means the spell will expire shortly).

If you expect to use magic in a battle, ready a useful spell prior to combat, not during it. Remember that you can leave a spell on the rune shelf, to be used at any time. Bear in mind that powerful spells (such as *Flame Wind*), may destroy valuable artifacts near the spell's target.

Targeted Spells. Several of the spells in the game must be targeted like missile weapons. When you cast a targeted spell by right-clicking on the rune shelf, your cursor changes to a targeting cursor. For combat spells (e.g., *Fireball*), the targeting cursor is a red circle. For non-combat spells (e.g., *Strengthen Door*), the cursor is a blue cross. Position the cursor on the target and press the right mouse-button to let the spell fly. These spells do not require Mana until they are released. And it may not be possible to release the spell if there is an object directly in front of you.

Area Spells. In addition to the spell-types described above, be aware that some spells affect individuals (your



character or another creature) while others may affect entire areas.

Before casting an area effect spell, make sure there is some open space in front of your character — obstacles close by can interfere with the casting.

Some area effect spells affect all creatures and/or objects in an area; some affect just one creature and/or object; still others will affect an unpredictable number of creatures and/or objects. Experiment with area effect spells to learn which ones have which effect.

Enchanted Items. As you explore the dungeon you will find powerful magic items. These give amazing magical abilities, unrestricted by level or amount of Mana.

Some enchanted items (crowns and rings, for example) are meant to be worn. These take effect as soon as you put them on. Other magic items take effect only when they are Used.

For example, the effect of *Ring of Invisibility* lasts as long you wear the ring. However, to cast a spell inscribed on a magical scroll, you must Use the scroll.

Note that enchanted items don't look any different than ordinary ones. If your *lore* skill is high enough, you may be able to determine an item's magical function when you Look at it. If you suspect an item is enchanted, but don't learn much the first time you Look at it, try again when your *lore* skill goes up.

The Eight Circles of Runic Magic

The 1st Circle

- ⌘⌘ Create Food (*In Mani Ylem*) Causes a fine bounty of food to appear (permanent spell).
- ⌘ Light (*In Lor*) Illuminates a darkened area (duration spell).
- ⌘ Magic Arrow (*Ort Jux*) Fires a magic arrow at your opponent (targeted spell).
- ⌘ Resist Blows (*Bet In Sanct*) Has the same effect as wearing a suit of head-to-toe armor (duration spell).
- ⌘ Stealth (*Sanct Hur*) Briefly prevents you from making any noise, making it less likely that creatures will notice you (duration spell).

The 2nd Circle

- ⌘ Cause Fear (*Quas Corp*) May cause an opponent to lose heart and flee (instantaneous spell).
- ⌘ Detect Monster (*Wis Mani*) Reveals the presence of hidden or unperceived enemies (instantaneous spell).
- ⌘ Lesser Heal (*In Bet Mani*) Heals your minor wounds (instantaneous spell).
- ⌘ Rune of Warding (*In Jux*) Places an enchantment in an area which will report if anything disturbs it (permanent spell, until disturbed).

RMK Slow Fall (*Rel Deo Por*) Briefly allows you to float in the air like a feather (duration spell).

The 3rd Circle

BHT Conceal (*Bet Sanct Lor*) Briefly obscures you, so you might remain unseen (duration spell).

FX Lightning (*Ort Grav*) Hurls a bolt of arcane energy at your opponent (targeted spell).

PT Night Vision (*Quas Lor*) Allows you to see without benefit of torch or candle (duration spell).

RTK Speed (*Rel Tym Por*) Slows down your enemies relative to your speed (duration spell).

HΦ Strengthen Door (*Sanct Jux*) Spikes a door (permanent spell).

The 4th Circle

IM Heal (*In Mani*) Heals you of grievous wounds (permanent spell).

PK Levitate (*Hur Por*) Briefly allows you to rise vertically into the air (duration spell).

TP Poison (*Nox Mani*) Poisons your opponent with toxic venom (permanent spell).

FΦ Remove Trap (*An Jux*) Negates the targeted snare (targeted spell).

HΨ Resist Fire (*Sanct Flam*) Briefly grants a partial resistance to damage from flame (duration spell).

The 5th Circle

FT Cure Poison (*An Nox*) Acts as an antidote to any poison (permanent spell).

KΨ Fireball (*Por Flam*) Hurls a mighty flaming missile at your opponent (targeted spell).

XHK Missile Protection (*Grav Sanct Por*) Renders you invulnerable to missiles (duration spell).

FN Name Enchantment (*Ort Wis Ylem*) Reveals the true nature of the object on which you cast the spell (permanent spell).

MA Open (*Ex Ylem*) Unlocks a locked door or chest (permanent spell).

The 6th Circle

AIT Daylight (*Vas In Lor*) Provides bright illumination for extended periods of time (duration spell).

ARK Gate Travel (*Vas Rel Por*) Allows you to travel instantly to a moonstone (instantaneous spell).

AIM Greater Heal (*Vas In Mani*) Brings you back to your original vigor (full Vitality) (permanent spell).

RMK Paralyze (*An Ex Por*) Prevents target from moving (instantaneous spell).

RKTK Telekinesis (*Ort Por Ylem*) Allows you to pick up a single item and use it from a distance (duration spell).

The 7th Circle

IMR Ally (*In Mani Rel*) Causes the ensorcelled being to fight the last enemy he or she saw you attack (permanent spell).

AFN Confusion (*Vas An Wis*) Causes foes to act as if drunk (instantaneous spell).

APK Fly (*Vas Hur Por*) Allows you to fly through the air for a time, and then glide gently to the ground (duration spell).

AHT Invisibility (*Vas Sanct Lor*) Causes you to become nearly impossible to see (duration spell).

FRT Reveal (*Ort An Quas*) Reveals hidden objects and concealed exits from current location (instantaneous spell).

The 8th Circle

PT Flame Wind (*Flam Hur*) Casts multiple flaming missiles into the area (instantaneous spell).

FT Freeze Time (*An Tym*) Stops the flow of time for all but you (duration spell).

IAH Iron Flesh (*In Vas Sanct*) Greatly increases your resistance to damage (duration spell).

RKN Roaming Sight (*Ort Por Wis*) Allows you to see the world from a bird's-eye view (duration spell).

AKA Tremor (*Vas Por Ylem*) Causes the ground to quake and rocks to burst (instantaneous spell).

Skill List

Acrobat (DX) The ability to move with grace. This skill reduces damage taken from falls and collisions.

Appraise (DX) Training in perceiving the value of goods. This skill aids you in correctly evaluating a deal offered you in barter.

Attack (ST) Your general fighting ability. This skill provides a bonus to your chance to hit when attacking.

Axe (ST) Training in the use of axes. This skill increases your ability to defend against attack and provides a bonus to hit when attacking with any form of axe.

Casting (INT) The study of spells. This skill improves the likelihood of a spell being successfully cast.

Charm (DX) Knack of making friends. This skill increases your chances of obtaining a good deal when bartering.

Defense (ST) Your ability to defend yourself in combat. This skill provides a penalty to foes who are trying to strike you.

Lore (INT) The ability to correctly identify an item. This skill improves the accuracy of the information gained by Looking at an object.

Mace (ST) Training in the use of blunt weapons. This skill increases your defense against attacks, and gives a bonus to hit when using a mace or cudgel.

Mana (INT) Your ability to manipulate magical energy. This skill increases your maximum number of Mana points.

Missile (ST) Training in the use of missile weapons. This skill increases the damage you inflict in attacks using bows, crossbows, and slings.

Picklock (DX) The ability to use lock-picking tools. This skill increases your chances of using a lockpick to open a locked door or chest.

Repair (DX) The ability to fix weapons and armor. This skill increases your chance of using an anvil to repair items successfully.

Search (DX) Training which heightens your perceptions. This skill increases your chance of detecting hidden doors and traps. This skill is applied automatically whenever you Look at something.

Sneak (DX) The ability to move quietly. This skill automatically reduces the noise you make, making it less likely that creatures will notice you.

Swimming (DX) Training in endurance swimming. This skill postpones drowning.

Sword (ST) Training in swordsmanship. This skill increases your chance of defending against attack and provides a bonus to your chance to hit when striking with swords and daggers.

Track (DX) The ability to perceive animal tracks. This skill tells you when creatures are near.

Traps (DX) The ability to disable a trap. This skill disarms traps you find.

Unarmed (ST) Training in unarmed combat. This skill provides a bonus both to your chance to hit and to damage when attacking with only your fist.

The Runes of Magic


AN
Negate


BET
Small


CORP
Death


DES
Down


EX
Freedom


FLAM
Flame


GRAV
Energy


HUR
Wind


IN
Cause


JUX
Harm


KAL
Summon


LOR
Light


MANI
Life


NOX
Poison


ORT
Magic


POR
Movement


QUAS
Illusion


REL
Change


SANCT
Protection


TYM
Time


UUS
Raise


VAS
Great


WIS
Knowledge


YLEM
Matter

Memoirs of Cabirus

A Note of Explanation: This volume came into our possession only recently, though it was penned decades ago. The chronicler is one Corby, scribe to the Cabirus whose life was devoted to the doomed experiment on the Isle of the Avatar. All contact with the settlers of the Abyss was lost years ago, and we therefore suppose the colony to be extinct. — Joye the Librarian

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Proclamation

To All Who Strive Along the Avatar's Path:

I, Cabirus, call upon those of Virtue to join me in a Valorous Quest, one which promises to be rich in Sacrifice and Spirituality.

Decades ago, Lord British in his wisdom founded eight settlements, each dedicated to one of the Virtues. We Britannians have lived up to our lord's expectations, for the towns of Britain, Jhelom, Minoc, Moonglow, Skara Brae, Trinsic and Yew have flourished to the present day.

I believe the time has now come to found one further town, where all of the Eight Virtues are bound together into a unified whole. In order to people this new community, I call upon the most faithful among our citizenry to come forward in this cause — fighters and mages first, and later craftsmen and even children.

Further, it is my intent to bring together in this new settlement those who have seldom been a part of our civilized community — creatures of the mountains, woods and swamps. Whether by myself or my agents, these primitive beings will be contacted, taught of the Way of the Avatar, and invited to join our pioneer colony.

And where shall this new town be located? This has been a matter of long discussion. At first, it had been thought to place this colony in a setting conducive to its goals — a pleasant woodlands, adjacent to a placid lake, or even at the peak of a lofty mountain. However, I have since realized the usefulness to all of Britannia should this Center of Virtue be situated in such a place as to seal off a gate that has in the past been used by Evil forces to trouble us — on the Isle of the Avatar, directly in the Great Stygian Abyss itself!

With the blessing of Lord British, I dedicate myself to this sacred Quest, and call upon all who are likewise stirred by the Vision of Avatarhood to join me in this Honorable Deed. Pray that we may succeed, for the auguries hint of dire consequences should we fail to guard the Abyss against the incursion of Evil.

Sir Cabirus

Foreword

As I set these words upon this parchment, I have recently emerged from the Stygian Abyss. I am the former page of the late Sir Cabirus, and the Eight Virtues have impelled me to compile these excerpts from the writings and speeches of my beloved spiritual master. Through the founding of our brave colony in the very heart of the Great Stygian Abyss, Sir Cabirus has demonstrated a degree of Valor and Sacrifice comparable only to the selfless acts of Lord British or the Avatar themselves.

I witness to the Honesty and Justice of this record with my signature.

Corby

The Chronicle of Sir Cabirus



I have chosen to set down upon this parchment the facts, as they are known to me, concerning this island upon which I and the colonists have chosen to found our new town. I wish that most of this information were not new to my readers, but unfortunately, few of my fellow-citizens seem to take as much of an interest in our history as they once did.

The Ascent of the Avatar

The Isle of the Avatar was discovered during the Fourth Age (as related in *Quest of the Avatar*), at the climax of the Avatar's quest. The Stranger from Another World, who came to Britannia in answer to Lord British's summons, completed the Test of the Eight Virtues and became the Avatar — the embodiment of the pure axiom of life.

It was during his journeys that the Avatar unearthed a chilling artifact: the skull of Mondain the Wicked, the first of the Triad of Evil. There were those who claimed that the artifact held the power to destroy all life on our world. Fortunately, it was the Stranger who discovered it, and not someone of lesser Virtue.

Upon completing the Path of the Eight Virtues, the Avatar embarked on a search for the Codex of Ultimate Wisdom. Legend linked this ancient tome with the subterranean maze known as the Great Stygian Abyss. "Truly, no one has ever plumbed its depths," wrote Shamino, who arranged by magic to obtain a map of its

corridors. "I cannot imagine the horrors that await the first to venture into the Stygian depths."

The entrance to the Abyss was found to lie on an uncharted island southeast of the mainland, guarded by a squadron of sailing ships crewed by ghosts of ancient pirates. Forcing his way past the spectral fleet and unraveling the mysteries of the Abyss, the Avatar at last succeeded in obtaining the Codex of Ultimate Wisdom. In honor of this achievement, the mystery island was christened the "Isle of the Avatar."

Peace and Treachery

With the Avatar's triumph accomplished, Britannia settled down for a period of reconstruction and consolidation. The kingdom's seers took note of the discoveries made by the Avatar on the Isle of the Avatar — notably, the entrance to the dungeon Hythloth (which was sealed shut) and the location of the Shrine of Humility. Lord British also caused a second sanctuary to be built, where the Codex of Ultimate Wisdom was enshrined.

Curious scholars researched the ancient records of the land, and identified the Isle of the Avatar as the former home — in another age — of the great daemons who destroyed Old Magincia for its lack of humility. The same beings had guarded the Shrine of Humility through the eons, but now the mystic creatures could no longer be found.

Meanwhile, the raising of the Codex from its subterranean resting place had caused great disturbances across the face of the land, and opened a vast underground network of caverns which came to be known as the Underworld. The Great Stygian Abyss became one of the many entrances to this subsurface world. Vulcanism tore up the Isle, reawakening its central volcano.

The next drama in Britannian history (as related in *Warriors of Destiny*) involved the kidnapping of Lord British. Since the king was believed dead, his realm fell under the rule of Lord Blackthorn, whose good nature was corrupted by the Shadowlords. The Avatar was once more summoned from his distant world to combat the menace, and his tortuous quest took him once more to the Isle of the Avatar and the depths beneath it, before his victory.

The Time of Prophecy

When the Avatar liberated Lord British from imprisonment, the act had both geological and spiritual reverberations. The most dramatic of these was the collapse of the Underworld, which forced many denizens of the depths to venture into our surface world.

Among those who emerged from below were the Gargoyles, whose sages prophesied that their race could only be saved by the recovery of the Codex of Ultimate Wisdom (which they claimed as their property) and the destruction of the Anti-Prophet (whom they believed the Avatar to be!). With diabolical cunning, the subterranean beings summoned the Avatar to Britannia in an attempt to kill him, but Lord British intervened in time to rescue the otherworlder.

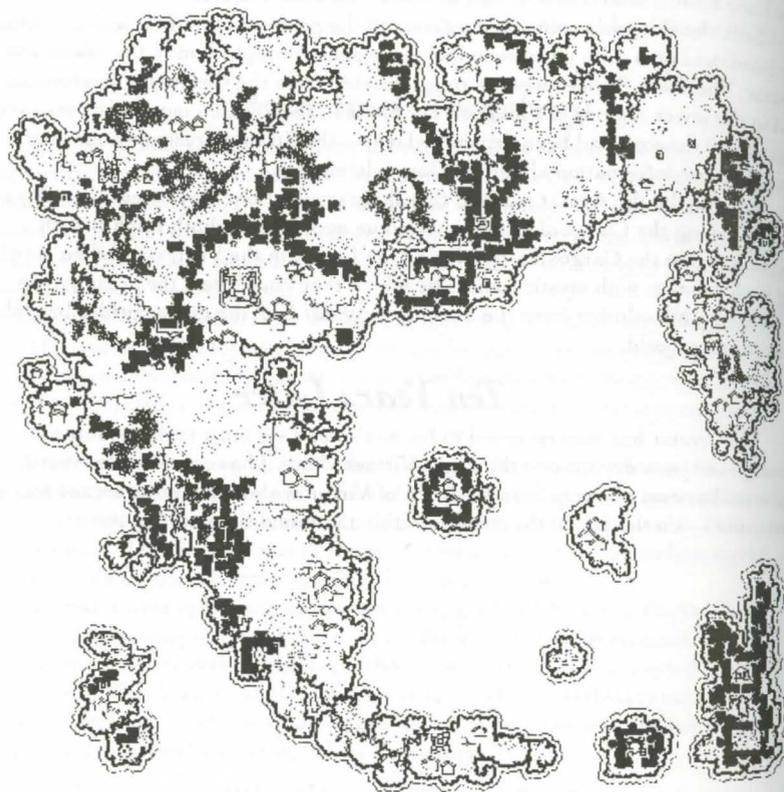
Still, the Gargoyles remained a threat to the peace of Britannia, and the Avatar embarked on a difficult quest which once again brought him to the Isle of the Avatar. The Twin Shrines were in time liberated from the Gargoyles' possession, and in the lower regions of Dungeon Hythloth — from which most monsters save drakes and dragons had been driven by lava — the Stranger rescued a mariner with priceless information about the Gargoyle menace.

Eventually, the Avatar realized that there was but one way to peace to Britannia — making the Codex of Ultimate Wisdom accessible to both Lord British's subjects and to the Gargoyles, by placing the Codex in the Vortex and then supplying both enemies with mystic Lenses by which they could view the arcane tome. By working his solution from the Shrine on Avatar Isle, the otherworlder brought peace to our world.

Ten Years Later

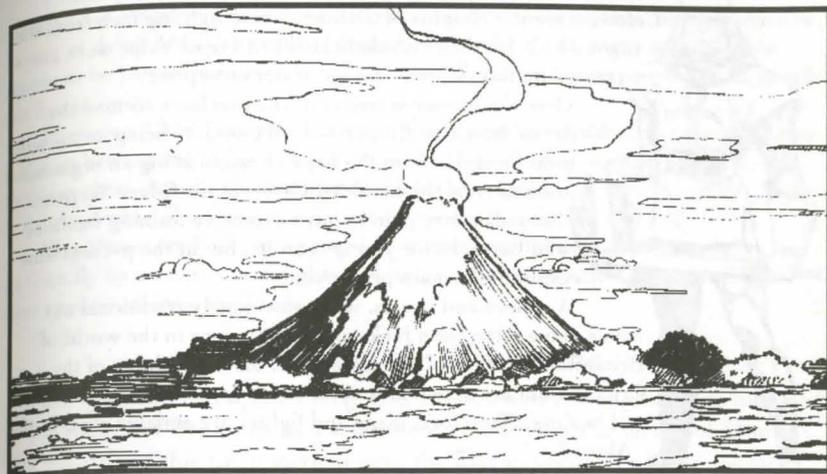
The Avatar has now returned to his world, and we must seek our future through our own devotion to the Eight Virtues. Thus it has come to pass that I, Cabirus, have set about to found a Town of Virtue within one of the arcane foci of Britannia — on the Isle of the Avatar, within the Great Stygian Abyss.

Map of Britannia



Isle of the
Avatar

The Colony of the Abyss



With the permission of Lord British, my fellow colonists and I set sail for the Isle of the Avatar five years ago. After a brief though difficult voyage, we sighted the bleak, forboding island rising above the waves.

We wasted no time in charting out the island, pausing to meditate at the Twin Shrines and once again sealing the entrance to the Dungeon Hythloth. Our company of warriors, mages and other pioneers then made the descent into the legendary Abyss. The eruptions and quakes of the past drove away many of the former predators of the chasm, and with the island again stable, we can dwell here in relative security. Nevertheless, our fighters find many challenges against which to test their Valor.

Lord British ordered that a village be established upon the surface of our isle, as a point of contact between ourselves and the rest of Britannia. Baron Almríc, formerly the King's Master of Hounds, has been appointed to command the settlement. His men have erected a rough stone tower, and the completion of a small fort should take only a few years more.

Lord British may soon favor us with a seat upon his Council — that is, we may gain equal status with the Eight Towns of the Virtues. If so, this can only be because of the brotherhood we have established among the disparate societies who have settled this Colony: Knights, Mountain-Folk, Seers, Lizardmen, Goblins and Trolls.

Knights of the Crux



The first to respond to the Proclamation of the Abyssal Colony were the Knights of Jhelom. These fighting men from the town which Lord British dedicated to a life of Valor were attracted by the valorous nature of our enterprise.

Here the former warriors of Jhelom have formed the Order of the Crux Ansata — “crux ansata” being an ancient term for ankh — in the hope of establishing an organization to rival the heralded Order of the Silver Serpent. Someday they plan to have extensive training facilities and barracks for young recruits, but at the present time conditions remain primitive.

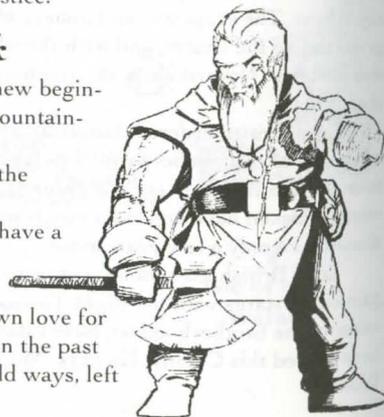
Warriors and mages, while not exactly traditional enemies, have often been bickering companions in the world of Britannia. Such is not true among us, for the Knights of the Crux Ansata are dependent upon our wizards for magical light and healing. Therefore, mage and fighter are amiable allies in the Abyss.

Our Knights have also renounced many lifelong prejudices and formed friendships with their traditional foes — our Troll, Goblin and Lizardman citizens. Any fighter who violates the least aspect of the strict code of the Crux Ansata must submit himself to the will of the Knight-Master, who prides himself on finding acts of penance which match the violation. This method of discipline has worked so well that the Knights have become strict advocates of the Way of the Avatar, and are often the first to locate and bring violators to our Court of Justice.

Mountain-Folk

Our Colony in the Abyss is a place for new beginnings. This has certainly been true for the Mountain-Folk of Britannia.

Short of stature and broad of shoulder, the Mountain-Folk — known in times past as “Dwarves,” though they detest this name — have a unique lifestyle dedicated to traditional craftsmanship. Over the ages, however, their distrust of outsiders and their well-known love for precious metals have put them in disrepute. In the past century, many of the Folk abandoned their old ways, left



their homes, and married outside their clan.

I was surprised when the Chief of the Mountain-Folk wrote to me concerning the desire of his people to join the Abyssal Colony. Knowing that the Folk were in danger of dying out as a culture, I suggested that the Chief might not want his people to be part of our town — where, after all, our goal is to prove that all people can live in unity.

However, Chief Goldsword was stubborn, and correct about his people being useful in hewing out living quarters from the rocks of the chasm. (Indeed, some histories claim that the Mountain-Folk built the original passageways of the Abyss, in the days when the Isle of the Avatar first rose from the ocean.)

The Mountain-Folk have proved to be excellent fellow-citizens, and they are on friendly terms with our Knights and Seers. They even abide the presence of their traditional foes, the Trolls.

Seers of the Moonstone

On the southern tip of Verity Isle, the town of Moonglow was founded by the mages of Britannia as a settlement embodying the virtue of Honesty. The wizards of this town were among the first to volunteer to be colonists, and an entire contingent of mages joined me on our first voyage to Avatar

Isle. Our magic-users have formed their own Order of Magic, and refer to themselves as the Ancient Illuminated Seers of the Moonstone. They have an especially close relationship with the Mountain-Folk — it was the mountaineers who carved out the seers' living chambers from the rock walls of the chasm.

The seers have, of necessity, chosen to specialize in those magics most useful in our subterranean abode — spells of light, food and comfort. They also conduct many magical experiments, and hope to find new spell reagents among the materials which occur naturally in the Abyss. The seers have asked our explorers to bring back samples of all that they find. *(The seers do not speak directly to me of their matters, but I have overheard them on occasion. While the Eight Virtues may have prompted some of the mages to travel here, I believe that most came for the chance to conduct experiments. It is said that the Great Abyss is unique in all of Britannia, because the barrier between dimensions is especially thin here. — Corby)*



Lizardmen

"The Dark Ages" is the name given to that long-ago time when the Triad of Evil stalked the lands. In those same years when Lord British first arrived upon our shores, a young mage named Mondain was perfecting his skills in the arcane arts. The wizard slew his own father in order to seize a gem with mystic powers. Mondain subverted the jewel to evil purposes, and began a campaign of unrest and dismay against all of the world.

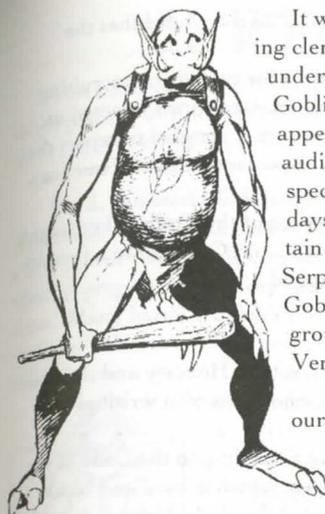
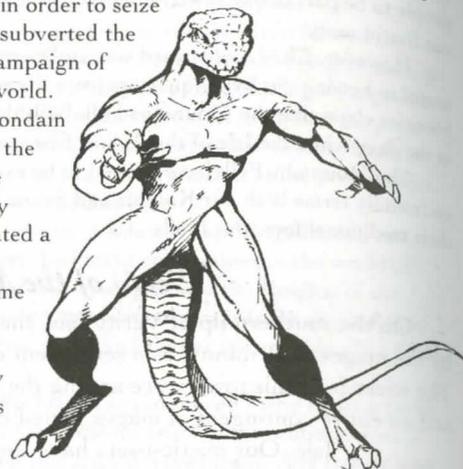
In his most foul experiments, Mondain dissected his own servitors as well as the great reptiles which then dwelt in the southern swamps. Reuniting the body parts through magical means, he created a variety of strange sauran forms. One strain proved successful, and thus came the Lizardmen into our world.

After Mondain was slain, the Lizardmen were hunted down one by one until none remained. Or so it was thought, until our colonists came to settle the Abyss! Here we found the last clan of the reptilians living in the grottos. Inspired by Compassion, we forbore slaying the monsters and taught them of the Path of the Avatar. To our delight, the Lizardmen can understand the common tongue, but not speak it.

Goblins and Lizardmen intermingle in the wetter portions of the Abyss, and have a friendly rivalry with the Mountain-Folk (the mountain-men hate dampness, and would build channels and drain the Abyss if left to themselves!).

Goblins

The Goblins originated from forbidden arcane experiments performed on prisoners and other victims by demented, power-seeking mages. (It was for causes like these that magic was once banned in our lands.) During the Third Age of Darkness, Exodus bred the Goblins into an army dedicated to his wicked cause. Following his defeat, the survivors vanished from the face of Britannia — hunted down by vigilantes or banished to other realms. (In those times, the Goblins were so loosely bound to this world that a single spell could expel them from this plane of existence.)

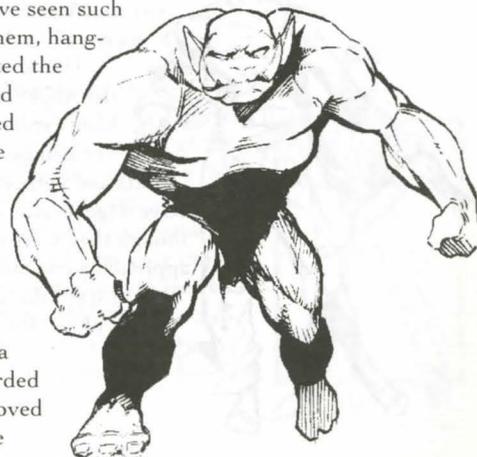


(Though the two species rarely come to blows nowadays, the Gray and the Green still attempt to outdo each other whenever possible in matters of Virtue. Old enmities die hard. — Corby)

Trolls

In the district where I was raised, it is not uncommon for Trolls to waylay an occasional traveler. Several times I have seen such brigands after justice had dealt with them, hanging from roadside crosses. Until I visited the Shrine of Compassion, therefore, it had not occurred to me how nearly civilized the Troll people are. After all, they use civilized weapons (stolen from us), wear tatters of clothing or hide, and speak a rough form of the same tongue which we speak.

Curiosity next drove me to visit the Lycaeum on Verity Isle, where I learned that the Trolls had once been a mountain-dwelling people. Over recorded history, however, they have always moved closer to civilization — today, they are



commonly found along roads and under bridges. I became convinced that the Trolls were fit candidates for the Way of the Avatar.

My servitors and I travelled the roads of Britannia for two years, recruiting Trolls for our great Abyssal Experiment. Many of the monsterforms rejected us, and some we were forced to slay in self-defense. However, I am glad to report that the Trolls accepted our ways and now constitute an important section of our community.

It has been difficult for many to accept the presence of the Trolls. The Knights were trained from youth to slay such creatures on sight, and Goblins are a favorite food of Trolls. Nevertheless, the Virtues have triumphed.

Exiles

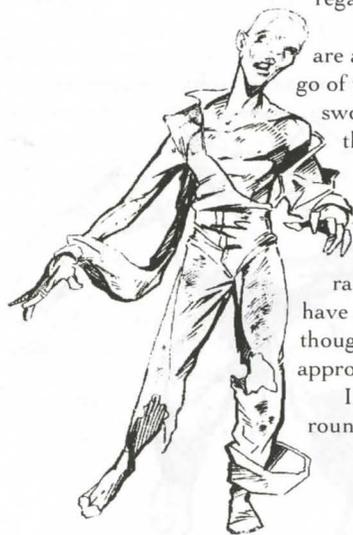
What follows has been written by me in the interests of Honesty and Justice. The fact that Sir Cabirus did not include these facts among his own writings was no doubt a simple oversight. — Corby

Some colonists prove unable or unwilling to live according to the Code of the Avatar. A few became discouraged by life in the Abyss, which is hard and bleak. Some were formerly wicked men who honestly adopted the Eight Virtues, but who, through weakness of will, returned to wickedness. There are those who say that the Abyss itself works to degrade the quality of a man's character, but Sir Cabirus regarded this as sheer superstition.

Those unable to live in peace with the rest of us are asked to separate themselves, and if they will not go of their own will, they are driven at the point of the sword. Most Exiles join Baron Almiric's keep, or from there sail back to their former lands.

However, some Exiles descend further into the Abyss than any colonists dwell. Knights who have explored the deeper recesses tell of reclusive beings — they call them "ghouls" — who eat rats and vermin. Our warriors claim that the Exiles have degenerated in physical form, and that even though they were once of several races and colors, all approach a common, horrific semblance.

I suspect these are stories embellished by a few rounds of ale, for who can believe such an occurrence!



Ye Who Venture Here

This passage is a guide to those who might feel moved to join our Colony. This rough place is unsuited for those with soft hands or unsteady swords! In particular, we are looking for settlers of these eight professions:

Bard. Minstrels with bright songs and inspiring tales might relieve our bleak existence, and our Colony is worthy of a new tale or two. Bards considering the journey to Avatar Isle must be prepared to perform deeds of valor, not just chronicle them! Many bards are greatly skilled with sling and crossbow, not to mention the arcane arts — these are talents always needed here.



Druid. We are now seeking a contingent of druids to join us in the Abyss. We hope they might be able to use their mystic abilities to persuade a sacred grove to take root in our chasm. Many druids are skilled with bow or mace, and so would be doubly useful. Druids generally shun the wearing of metal armor. Here this is good, for in the Abyss sound carries easily, and metal armor is noisy.



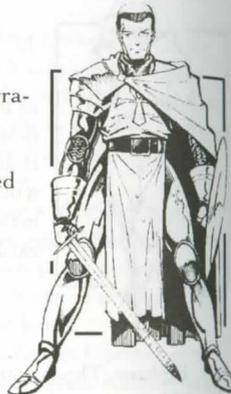
Fighter. Those warriors wishing to join our number should be prepared to satisfy the qualifications of our fighting society, the Order of the Crux Ansata. Prospective Knights should have spent their lives in martial training and have the use of all weapons and armor. (The Order has particularly found the double-edged Britannian sword to be a devastating weapon in the close quarters of the Abyss.) Horses are impractical in our surroundings, and we have no facilities to feed or stable mounts, so leave your steeds behind. The Order's custom is that engaging in magic is only a waste of energy for fighters — Knights leave spell-casting to the mages.





Mage. As with the fighters, wizards desiring to join our Colony must be ready to satisfy the entry requirements of a fraternal organization unique to the Abyss. This is our magical society, the Ancient Illuminated Seers of the Moonstone. Their by-laws encourage magic-users to shun armor except that made of cloth, and to carry no weapons beside staff, sling or dagger. (Arcane weapons are, naturally, excluded from this limitation.) However, no natural or magical law prevents spellcasters from using whatever armor and weapons they choose, and many of the younger Seers opt for the heaviest arms and armor they can manage. Still, the Seers' rules serve to keep the mage focused on his primary purpose — the working of magic.

Paladin. I have lately regretted not encouraging immigration by members of this profession, as it might be useful to have colonists experienced in both magic and combat. It is well-known that paladins are formidable warriors and valued allies.



Ranger. With the coming of the druids, should I be successful in recruiting them to establish a grove in the Abyss, we will of course also welcome woodsmen of all types. I have often thought that rangers would be useful here to track down intruding predators, and their training in woods lore might enlighten us about some of the odd creatures we find.

Shepherd. I have given some thought to the introduction of sheep into the Abyss, and for that reason would like to encourage shepherds to make their way to our isle. Herders vary widely in their training, some being adept at certain weapons or even spells, but the one certain attribute of every shepherd is a degree of humility which would be most welcome here.



Tinker. Our community has great need of any who can repair metal or wooden implements (especially weapons). Such artisans should also be warriors, due to the nature of our settlement. I do not think that the well-known tinker aversion to magic will be a problem here, for our mages are never intrusive.

Magic in the Depths



In the first years of our settlement here in the Abyss, our mages have learned much about the nature of magic in this most strange place. What is written below is meant for the guidance of those pilgrim mages who may wish to join our company, lest you bring with you those items of great expense which will be useless to you here.

(Many thanks to Seer Danlock, who has advised me in places where my natural gifts and learning failed me.)

A History of Magic

Many alive today do not realize that magic — or the “dreadful arts,” as the mystic arts used to be known — was once a lost art in the land we now call Britannia. The rulers of the various city-states recognized the great evil which could be worked through the casting of powerful spells, and enforced a rigid ban on the practice of magic-working.

Unfortunately, there was one who did not hold himself subject to the rule of law. His name was Mondain, and his evil wizardry brought about the First Age of Darkness. In order to defeat him, certain good citizens took down from their shelves the long-disused tomes of magic, and taught themselves the secrets of the arcane world in order that their power might be used in opposition to the spells of Mondain the Wicked.

There have been many ages since the defeat of Mondain, but the forces of evil, empowered by their knowledge of spell-casting, have never ceased to be a threat to our peaceful world. Therefore, our own mages have never abandoned their studies, and have greatly added to the number and power of their spells over time.

A wizard who is also a true follower of the Way of the Avatar recognizes his heavy responsibility to wisely use the arcane powers which he possesses. The Prime Virtue of all mages is Honesty, for a practitioner of magic must strive to be free of illusions or confusions — he must see the world as it really is, and correctly assess his own limitations and improper aspirations. Should a mage use the mystic arts for personal gain or vengeance, he might find that his powers have deserted him.

The ways of magic are diverse and strange, and there is much yet to be learned by even our most advanced mages. We believe that the magical energies are arranged in eight spheres, all positioned about a common center, and each sphere larger than that which precedes it. Unseen bonds link these shells of energy with the workings of the physical plane. As a mage grows in learning, he also grows in his ability to touch the greater spheres of energy, until at last he can cast even the spells of the Eighth Circle.

An important element in the manipulation of these arcane energies is the use of syllables of magic, for unless a mage can speak the proper words of power, the energy of the spheres will remain locked to him.

Runic Magic

The magically-attuned among our original colonists quickly discovered that the rules of magic as known in the rest of the world do not apply to our new underground home. As any student of our world's history must be aware, many titanic and dramatic events have unfolded in the vicinity of the Great Stygian Abyss — indeed, the chasm and the isle itself originated in energies arcane! Our foremost mages believe that the release in past times of enormous mystic energies here has worn the dimensional fabric thin, allowing the laws of other worlds to mingle with and even negate certain of the mystic principles.

Firstly, the casting of magic while within the Abyss does not require the use of reagents. Bring no sulfurous ash, ginseng, spider silk, nightshade, black pearls, blood moss or garlic — you will have no need for arcane ingredients in our community.

Secondly, new colonists should leave behind their spellbooks. We have discovered a way to cast magic which works only in the Abyss, and which does not require the user to carry a cumbersome tome with him. There are, scattered among the corridors in the depths, special stones charged with mystic potency. Each of these stones is inscribed with a rune identifying its nature. These rune stones are

similar in function to the syllables of magic used in ordinary Britannian magic. Any spell can be cast by a mage who possesses the rune stones pertaining to that spell, unless the caster lacks the experience to utilize the spells of that Circle.

Thirdly, rune stones can only be used when they are placed in a suitable receptacle. Our seers have enchanted special bags for this purpose, and will provide you with a rune bag upon your arrival.

Fourthly, mages in the depths must develop proficiency in the physical gestures associated with spell-casting. We have noted spell failures here when all other conditions have been satisfied, and we attribute these disappointments to a lack of casting skill on the part of the wizard.

Lastly, it is just as important for a Runic Mage to possess Mana as it is for any other Britannian Mage, for this is the power which must be channeled into all wizardry. The mystic energy is restored when a mage sleeps, or sometimes by the use of arcane objects such as scrolls.

Bestiary

The prospective member of our community should not be discouraged to learn that there are many fierce beasts which inhabit the Abyss. Numerous and diverse as they are, they have proved no match for the swords of our Knights.
(Or so the Knights tell us. — Corby)

Bats



These verminous, disease-ridden pests proliferate in the more remote portions of the Underworld. Bats are bird-like in aspect, but covered with a rough fur rather than feathers. Bats make annoying foes, as they are difficult to strike and very swift, and are almost always found in flocks.

Our Knights report finding two varieties of bat in the Abyss. Cave Bats are not known to be fearsome antagonists, preferring to avoid battle when they can. Being dark as midnight, they are difficult to sight but may be detected by the high squealing sounds they make when communicating amongst themselves. One is easily killed with a well-placed blow.

On the other hand, the Vampire Bat is a robust creature which seems to seek out opponents. This cunning beast — which can be distinguished from the Cave Bat by its red fur — prefers to attack from above, and may easily remain unseen by those who keep their eyes fixed on the ground, looking for traps or gold. Beware the bite of the Vampire Bat, for the venom it releases is strong enough to sear one's skin.

Bloodworms

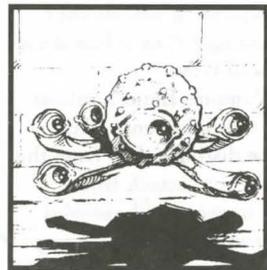
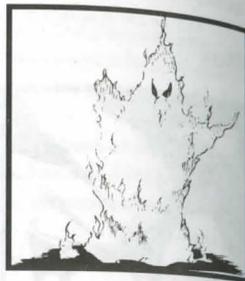
These repulsive green crawlers are distantly related to the common Rotworms of Britannia, but are possessed of an aggressive nature that would befit a creature ten times their size. Sir Broderick stumbled upon a subterranean nest of these vermin, and quickly discovered that they were not as easily killed as Rotworms. Seeking to find a better location to make his stand against the beasts, the Knight retreated — only to discover the worms pursuing him with single-minded determination. Broderick finally slew them



all, only to die from poisoning of the blood as a result of the worms' venom. His scrawled notes, written as a selfless act by a dying man, were recently recovered by explorers, but the good knight's body has never been found.

Fire Elementals

These beings of fire, left in the chasms after eruptions of lava in the last age, are among the most challenging foes of the Abyss. First of all, one should know that these Elementals have the ability to toss portions of themselves — balls of living fire — at their opponents. Secondly, they are fearsome warriors: quick to attack with their flaming arms, nimble enough to escape most blows, and sturdy enough to withstand grievous damage. As they can kill a man in only a few blows, it is often prudent to avoid their attention by passing quietly and at a distance (Elementals are said to be nearly blind).



Gazers

Surely this creature was created by sorcerous means, for no natural law could have given birth to a beast this monstrous. Gazers float through the corridors of our chasm, and with their many eyeballs are quick to spot intruders into their domain. Do not underestimate the fearsomeness of this obstacle, as a Gazer's attack — noted by the wink of its great central eye, or the twist of an eye stalk — cuts as deep as a sword thrust, and this beast seldom misses its mark.

Ghosts

Our Seers have been at a loss to explain the presence of the several types of spectral beings which are sometimes found within the Underworld. We do not know whether these are the spirits of Britannia's dead or merely beasts of an ethereal nature. The typical Ghost is no match for an experienced warrior, as two or three well placed blows will quench its essence, and in such a short fight the specter cannot seriously injure its foe.



More dangerous are the rarer, more powerful ghostforms. The White Ghost, which differs from a typical ghost by being opaque and blazingly white in hue, is more substantial in this plane and thus much more difficult to slay. Therefore, combat against this foe typically takes much longer — and the White Ghost can easily slay its foe in such a span of time!

The most dangerous form of ethereal being to be found here is the Dire Ghost. Dark as night and as substantial as a shadow, this creature is difficult to see until it attacks — when its eyes glow a bright golden color. Seer Moonwane believes that these ghosts are the remnants of slain monsters, based on the observation that Dire Ghosts attack with an unmatched ferocity.



Giant Rats

Over the centuries, the rodents of Britannia have grown ever larger (and hungrier) in the catacombs and tunnels which honeycomb this land. Natural agility and sharp teeth are these creatures' chief advantages. Even a single Giant Rat poses a significant danger for a lightly armed opponent, though an experienced warrior can slay a pack in as many blows as there are enemies.



Of the rats which have bred in the Abyss, we have distinguished two varieties. The Giant Tan Rat, commonly found in the drier upper levels, is an aggressive beast with the disgusting tactic of leaping up in order to slash with its teeth at an enemy's throat.

The Great Gray Rat is found in the lower depths, where it feeds upon the refuse washed down from higher in the chasm. Consequent to their revolting eating habits, these rats are universally infected with noxious germs which they pass on with every bite. Seldom do our Knights tangle with these rats without someone in the party becoming ill. Fortunately, these rats can often be avoided, or driven off with a spirited defense.

Golems

Whether these monsters are natural to this chasm, or whether they were created here by long-ago wizards experimenting with dark forces, our wisest men cannot say. What we do know is that the Golems attack us on sight, and that no single mortal warrior has yet been a match for their fearsome strength and resistance to damage.



Each type of Golem appears to have been formed from a different element, and they also differ somewhat in mass. The Earth Golem, a brown-hued figure composed of solidified soil, is the smallest. Still, it is a formidable creature best tackled by well-armed opponents. Knight Galloway claims that he once escaped from such a Golem by entering a maze of passageways — he thinks these beasts track their foes by eyesight, and are probably hard of hearing.

The Stone Golem is larger than the Earth Golem, and can be recognized by its gray color. As it can slay a man in as few as two blows, and since it would seem to take many sword strikes to slay it, our Knights only tackle this opponent in teams.

Worst of all these unnatural creatures is the Metal Golem, noted for its mottled rust-and-steel

appearance. Few weapons can dent this massive being, while a single blow from a Metal Golem can leave a warrior crippled for life. Knight Galloway concluded that Metal Golems were practically blind, but his recent death at their hands has put this theory into disrepute.

The Headless

Do not fall prey to pity for these wretched deformities, for the Headless have a relentless animosity for all upright beings with heads — they attack without thought, and give no quarter unless on the verge of their own extinction. Having no visible eyes or ears, it has long been a mystery how the Headless find and pursue their prey. It is a simple matter to avoid a pack of these beasts by exercising silence and keeping a prudent distance.



Imps

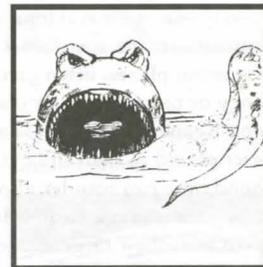
These damnable abominations, virtually extinct elsewhere in Britannia, remain alive in the Abyss despite our best efforts to slay every last one of them. They are a foul conglomeration, part demon, part monkey and perhaps part creature or creatures unknown (to account for their hideous green coloring). Flying lazily overhead in the larger crevices, taunting our Knights and tossing down the occasional arcane bolt, Imps have been a nuisance and a thorn in our flesh since our arrival. They are poor fighters when one can draw them into hand-to-hand combat, and can easily be slain with a sword-thrust or two — if they can be enticed to fight.



Lurkers

For the most part, these tentacled monstrosities have been more of a nuisance than a threat. Lurkers dwell in the subterranean rivers and channels of the Abyss, and have never been seen on land. They are normally seen floating just below the surface of the water, with their eyes and yellow tentacles poking out above. We know of a few cases in which a Lurker has pursued a swimmer, and once a beast became so enraged that it lurked at the water's edge and attacked those along the shore.

Knight Willomar tells of encountering a more ferocious variety of Lurker in the deeper catacombs. This Deep Lurker is reportedly a veritable giant. Its great size could not be detected from the small profile it presented above the water, but the Deep Lurker should be recognizable by its distinctive green color. Willomar spent many days recovering from his battle, and was for a time wracked by a mysterious fever that poisoned his brain.



Mongbats

The Mongbats rank even worse than Imps as the most pestiferous elements in our underground abode. Resembling a cross between bat and monkey, these brown avians have no honor, but instead conduct battle by swooping down to score a hit, then flying off to circle out of range of one's weapons. Even worse, the beasts are so swift and nimble that they are difficult to hit even in close combat. These evil pests are most accurate in their diving attacks, though fortunately they are too small to cause great damage with any single blow. We would exterminate these vermin if we could.



Reapers

Legend tells us that the first Reapers were born when an ancient, enchanted forest was swallowed up in a cataclysmic upheaval long ago. Ever since, these animate, arcane tree-forms have been found in subterranean places, often guarding some object they fancy or patrolling their chosen territory. The common Reapers of Britannia are fully mobile for only a brief period in their life cycle, but the specimens to be found here can wander about at will (though quite slowly). Although their wildly swinging branches often miss their targets, one blow that strikes a valiant warrior can do more damage than any sword thrust. Therefore, Reapers are a serious menace, to be avoided by the inexperienced warrior.



Rotworms

In the dank depths of the Underworld — where rot infects, corrosion ruins and corruption festers — can be found the foul nests of these loathsome worms. Should one approach close enough to be sensed by a Rotworm, the beast is sure to attack. An armored warrior has little to fear from these worms, but an ill-equipped explorer could easily be overcome by sheer numbers.



Shadow Beasts

There is little we can say about this entity, or family of entities — we obviously cannot see that which is invisible, so we do not know how many there are. The Shadow Beast is thought to be immensely powerful, more than a match for any single warrior. When attacked by an unseen adversary, first look up (for a flying attacker) and down (lest a small worm or other foe is striking) — if none of these be the case, then suspect the Shadow Beast and begin to strike in all directions!

Skeletons

Perhaps a consequence of the unique, arcane nature of our Abyssal environment, these Undead creatures may be found almost anywhere — some think Skeletons crawl directly out of the rock walls of the chasm! Furthermore, these monsters are most commonly found in groups (should you find one Skeleton, there are likely to be more around the corner). Skeletons hate all living beings. Fortunately, they are weak, ineffective warriors.



Slugs

Not to be mistaken for the common Slimes of Britannia, the Slugs of the Abyss are gelatinous, amorphous entities. Their extremely small and limited minds are entirely taken up with an insatiable curiosity, and so Slugs are certain to follow any motion they detect. Fortunately for explorers, Slugs have no eyes or ears, and therefore miss much that occurs around them.

Of the two varieties of Slug found locally, the Flesh Slug — notable for its pale fleshy color — is the most common and least dangerous. We are not certain if these creatures intend to bite their victims, or if their offensive actions are accidents of their constant writhing. Certainly, no warrior of any experience need fear these pitiful beasts.

However, beware the greenish Acid Slug. Though only a little larger than the Flesh Slug, the Acid Slug secretes a noxious vapor which sometimes intoxicates its foes. Despite its fearsome name, this Slug is not poisonous — merely inedible.



Spiders

The repellent arachnids which patrol the depths of the Abyss are not of the web-building kind, but roam the crevices in search of fresh prey. The common Giant Spider is a dark gray in color. These gargantuan spiders are midway in stature between a bloodhound and a small pony, and since they travel in mated pairs or clans, these creatures present a reasonable challenge to the typical fighting man. Despite their bloated appearance and short legs, don't be surprised by their leaping form of attack.

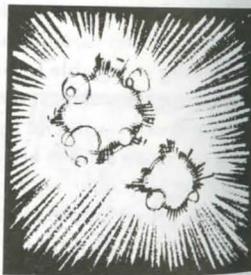


Smaller in form and reddish-brown in hue is the poisonous Wolf Spider. It is the most easily killed of the large spiders, but the Wolf Spider will likely score one or two bites (and inject its red bile, a powerful poison) before succumbing to the inevitable. Most Knights think this spider to be relatively inoffensive, but Knight Vitalar reports the beasts have attacked him whenever they have detected his presence.

The greatest adversary among the arachnids of the Abyss is the Dread Spider. A ghostly white or light gray in color, this creature is the equivalent in combat of two or three of its cousins — very sturdy and thus difficult to kill. To compound the problem, this spider is a vicious opponent, capable of repeatedly penetrating one's armor with its sharp bite. The Dread Spider is one of the most venomous creatures known in the Abyss.

Wisps

Having the harmless appearance of floating bits of light, the solitary Wisp of the Abyss would appear to be no more than a beautiful apparition. The contrary is true. Wisps are nearly indestructible masses of energy, and given their tremendous speed and devastating electrical attacks, they cannot be fought by ordinary mortals. Our Seers think them capable of casting magic as well, and often seek them out to consult them on arcane matters.



Afterword

The volume penned by Corby, scribe of Sir Cabirus, came into the possession of our Library after many years of being passed on from one reader to another. At this time, I should like to make some historical clarifications.

Firstly, there have been many suspicions about Sir Cabirus' death. These I wish to put to rest. Corby's scrawled notes testify that his master died in his sleep, in an ordinary though untimely manner. There is no evidence whatever to support rumors of murder by poison or strange magics. Such unfounded speculations apparently helped to stir up the discord which led to the downfall of the Abyss Colony.

Secondly, there is the matter of the theft of the eight mystic devices which Sir Cabirus collected before his death. It was Cabirus' plan to cement the harmony of his settlement by presenting each of these artifacts to a different group or faction among his community. Unfortunately, he did not leave a guide as to how to distribute the items. This caused great disagreement among the Colonists, and certain factions seized those objects which they believed Cabirus meant for them. Even the grave of Sir Cabirus was desecrated by colonists hungry for treasure.

What follows is a description of the eight arcane devices. Unfortunately, the precise nature of the enchantment upon the artifacts is unknown to me.

- **Book of Truth.** Said to have been penned by Ravenhurst of Moonglow, a great philosopher of the past age, this book contains meditations on the meaning of life, the importance of truth, the fallibility of the senses, and the difficulty of seeing even what is directly adjacent to one's mustache.
- **Ring of Humility.** This simple ring was worn by Bill, the humble son of Jenn. Bill labored at Lord British's Museum of Oddities to repair and preserve the exhibits, yet never asked for reward.
- **Cup of Wonder.** This object was carved from the heartwood of an ancient oak by one of the finest craftsmen of Skara Brae.
- **Shield of Valor.** Once carried by Lord Blackthorn, this shield was set aside when that noble ascended to the rulership of Britannia upon the kidnapping of Lord British (a tale told in *Warriors of Destiny*). It is therefore symbolic of Valor, which Blackthorn also set aside when he became regent.
- **Standard of Honor.** This banner was carried by none other than Sir Geraci, who was slain at Lord British's side during the ill-fated expedition to the Underworld (as related in *Warriors of Destiny*). Though Geraci could have saved himself by fleeing, he instead upheld his oath to serve his king until death.

CONTENTS

- **Sword Caliburn.** Reportedly molded after a legendary sword from the world of the Avatar, this weapon is said to cleave truth from falsehood.
- **Taper of Sacrifice.** Crafted by the finest artisans of Minoc, this candle was once used to illuminate the Shrine of Sacrifice. I am told that none may bathe in the light from this taper without appreciating this truth — that the candle produces light only through its own destruction.
- **Wine of Compassion.** Brewed by the brethren at Empath Abbey, this noble vintage is said to open one's heart to the sufferings of others.

Thirdly, I must warn all to avoid the Stygian Abyss. Without Sir Cabirus to guide them, the Colonists warred among themselves. Contact with the subterranean community has been lost for many years, and I fear that there are no human survivors.

Jye, Librarian

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Player's Guide art by Jeff Dee and Karl Dolgener

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Memory Requirements

A 2 meg machine is required. (However, we recommend 4 megs of memory to play *Wing Commander Academy*.) A minimum of 5MB hard drive space is required. By typing MEM at the DOS command prompt (C:\>), you can see how much memory is available on your computer. The game needs 586K (600,064 bytes) of DOS memory available (3rd line reported by mem) and 800,000 bytes of available EMS memory.

Some sound cards require additional EMS memory. Sound Blaster, Sound Blaster Pro and Ad Lib require no additional EMS memory. Using a Roland card requires 848K (868,352 bytes) of available EMS memory (total, not additional). When you use a Roland card for music and a Sound Blaster (or Sound Blaster Pro) for speech, you must have 913K (934,912 bytes) of available EMS memory (total, not additional).

Note to 2 meg owners: If you have a 2 meg machine, you will not be able to free enough EMS memory to use both a Sound Blaster Pro and a Roland. You must choose between the Sound Blaster Pro and the Roland.

Note: *Wing Commander Academy* has been fully tested with the Double Space disk compression utility that shipped with MS-DOS version 6.0. We cannot guarantee the compatibility of our games with other disk compression utilities.

On-Line Help

Help with the installation process is available at any time by pressing **F1**.

Quick Installation

1. At the DOS prompt insert CD-ROM into your CD-ROM drive.
2. Type the letter of the CD-ROM drive, then press **Enter**.
3. Type CD\WCA and press **Enter**.
4. Type INSTALL D: C: and press **Enter**. Substitute the correct drive letters for your CD-ROM and hard drives.

Installations Menus

If you change your hardware configuration, you can run INSTALL from the WCA sub-directory of your hard disk. The installation process is menu-guided. Use **↑** and **↓** to select among the options on each screen, then press **Enter**. If the install program detects a condition that will prevent installation (e.g. not enough disk space), the program will stop and notify you of the nature of the problem. You must fix the program before installation can succeed.

Main Menu

After an introductory screen, the main menu appears. From here you can select an install option:

Install the game. This option attempts to install the game onto the hard drive or drive partition you specify.

Change the hardware configuration of your machine after *Wing Commander Academy* has been installed, so that the game can use the new configuration. Once you have given the specifications and have verified that they are correct, you are finished. You can now exit the install program.

Abort installation. This option allows you to cancel the install process. (You may also abort the installation process at certain other points while the files are being copied to the hard drive by pressing **Esc**.) You will be asked to verify all abort requests, giving you a chance to change your mind and continue with the installation.

Machine Specifications

After you have selected an install option from the main menu, the install program will attempt to determine some specifics about your machine. What it finds will be displayed as defaults to the left of the screen. If the defaults are incorrect, you can change them with the following menu options (after answering NO to the question "Are you satisfied with the current configuration?"):

Source drive. This is the drive that currently contains the CD-ROM containing *Wing Commander Academy*.

Destination drive. This should be the hard drive (or partition) onto which you are installing *Wing Commander Academy*. It must have at least 5MB of space free for installation.

Destination directory. If you are not satisfied with the default directory (\WCA), select NO, and enter your preferred directory. The directory will be created if it does not already exist.

Sound card. A list of possible sound cards is displayed. Choose the card that most closely matches the one in your machine. For example, if you have a 100% Sound Blaster compatible card, you would choose SOUND BLASTER. The auto-detect feature will only detect sound cards at their default settings. If your sound card is not at its default setting, the installation program will detect it as AD LIB. In this case you should answer NO to the question: "Are you satisfied with the current configuration?" Then manually select the appropriate sound card from the option menus described below. If you have trouble with the installation that the on-line help (**F1**) or information on this guide cannot help you with, please contact ORIGIN Customer Service (see **Troubleshooting**).

The following menus handle sound card configuration information:

I/O port setting. This setting defaults to 220H. Other possible values are 210H, 230H, 240H, 250H and 260H.

IRQ setting. This menu gives you a choice of 3, 5, or 7 (7 is the default for most, but not all, Sound Blaster cards).

For more information on these settings, see your Sound Blaster documentation.

Note to Sound Blaster Pro Users: IRQ 10 is not supported due to technical constraints.

Optimizing Your System

If you are experiencing problems running *Wing Commander Academy*, it might help to create a separate boot disk or decrease the number of memory-resident programs (TSRs) you have loaded.

Creating a Boot Disk

To create a separate boot disk, insert a blank high density disk in your A: drive. From the DOS prompt, type:

```
FORMAT A:/s 
```

Modifying CONFIG.SYS

When the DOS prompt returns and the format is complete, type:

```
EDIT A:\CONFIG.SYS 
```

When the new screen appears, determine which memory management system you are using (if any) from those listed below, and type the commands shown under that system:

CONFIG.SYS using QEMM

```
FILES=15  
BUFFERS=15  
DEVICE=C:\QEMM\QEMM386.SYS  
DOS=HIGH,UMB  
SHELL=C:\DOS\COMMAND.COM /P
```

CONFIG.SYS using DOS 5's EMM386.EXE

```
FILES=15  
BUFFERS=15  
DEVICE=C:\DOS\HIMEM.SYS  
DEVICE=C:\DOS\EMM386.EXE 1024 RAM  
DOS=HIGH,UMB  
SHELL=C:\DOS\COMMAND.COM /P
```

Exiting CONFIG.SYS and Modifying AUTOEXEC.BAT

After typing these lines, you should exit and save your file. Do so by typing:

```
 
```

CONFIG.SYS using DOS 6.0's EMM386.EXE

```
FILES=15  
BUFFERS=15  
DEVICE=C:\DOS\HIMEM.SYS  
DEVICE=C:\DOS\EMM386.EXE 1024 RAM  
DOS=HIGH  
DOS=UMB  
SHELL=C:\DOS\COMMAND.COM /P
```

CONFIG.SYS using DOS 6.0's EMM386.EXE and Double Space

```
FILES=15  
BUFFERS=15  
DEVICE=C:\DOS\HIMEM.SYS  
DEVICE=C:\DOS\EMM386.EXE 1024  
/I=B000-B7FF RAM  
DOS=HIGH  
DOS=UMB  
DEVICEHIGH=C:\DOS\DBLSPACE.SYS /MOVE
```

Next you need an AUTOEXEC.BAT file on your boot disk. Type:

```
EDIT A:\AUTOEXEC.BAT 
```

```
PATH=C:\DOS  
PROMPT $P$G
```

```
C:  
CD\(Wing Commander Academy drive)  
WCA
```

(The AUTOEXEC.BAT file does not vary with different memory drivers.)

"*Wing Commander Academy drive*" should be the directory in which you installed *Wing Commander Academy*—for example, if you installed the game in the default directory we suggested, the fifth line you typed would read:
CD\WCA

Exit and save this file by typing:

```
 
```

Disk Cache Set-Up

If you have a 4 Meg machine or greater, you can install SMARTDRV.EXE (a disk cache program). We recommend you allocate 1024K of memory to the disk cache. We also recommend using the SMARTDRV versions from *Windows 3.1* or *DOS 6.0*. If you decide to install SMARTDRV, you need to add the following line to the beginning of your AUTOEXEC.BAT file:

```
C:\DOS\SMARTDRV.EXE 1024
```

Mouse Set-Up

For ease of gameplay, we recommend the use of a mouse in addition to a joystick. Be sure that you are using a 100% Microsoft compatible mouse driver. If you're using a boot disk, this driver must be loaded within your boot disk configuration. Since the command line may differ from mouse to mouse, consult your hard drive's AUTOEXEC.BAT or your mouse user's guide. One example is:

```
C:\MOUSE\MOUSE.COM
```

Be sure to include your specific mouse driver line to the beginning of the AUTOEXEC.BAT file of your boot disk. When you want to play *Wing Commander Academy*, insert this boot disk in the A: drive and start or restart your computer.

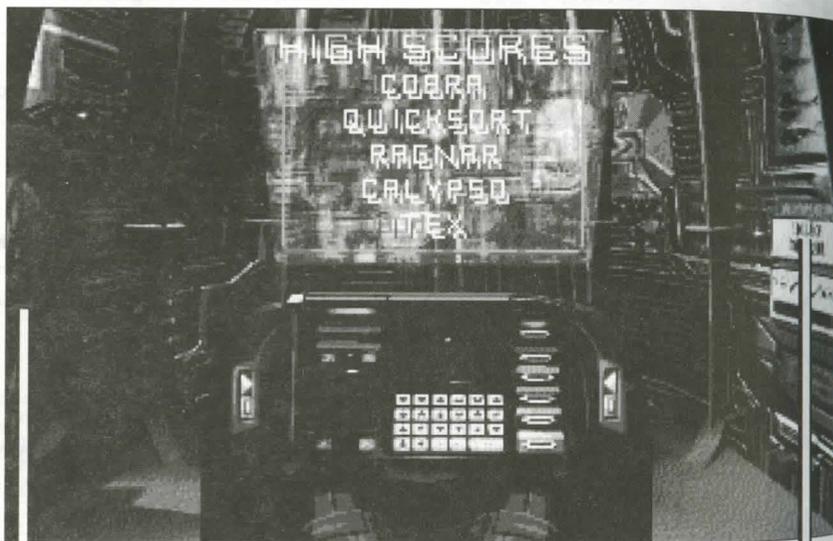
Installation Fails

In the unlikely event that installation fails, an error message should tell you the nature of the problem. See **Troubleshooting** for solutions to some common problems.

TCSN SIMULATOR

The Wing Commander Academy trains every student in a variety of different classes and exercises that will adequately prepare him or her for real-life combat in space. In our effort to save the Confederation homes from the depredations of the Kiltrathi, we can only afford to send the very best pilots out to defend our Confederation homes. Innumerable hours of training, classes and simulator practice turn our students into ace Confederation pilots before they launch their first actual mission.

In my opinion, the TCSN flight simulator is by far the most important educational tool this academy has to offer. The simulator will not only teach you how to fly, but more importantly it will show you how to survive. In the countless simulated missions you embark on during this part of your training, you will fight Kiltrathi ships and Kiltrathi pilots in hijacked Confederation ships. You will endeavor to blow enemy capital ships out of space and defend your own space station against attacking forces. Since the simulator is programmed to realistically imitate real conditions in space, it will also teach you how to effectively navigate asteroid and mine fields and retrieve ejected pilots or data capsules from space. The TCSN flight simulator will show you what you really came here to learn. Use it wisely, and the lessons you learn at this console will save your life when you actually face a swarm of Kiltrathi in a grueling dogfight.

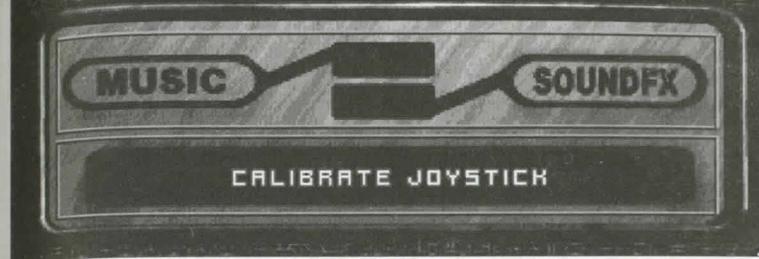


COMMAND CONSOLE

Exit to DOS

Simulator Configuration Panel

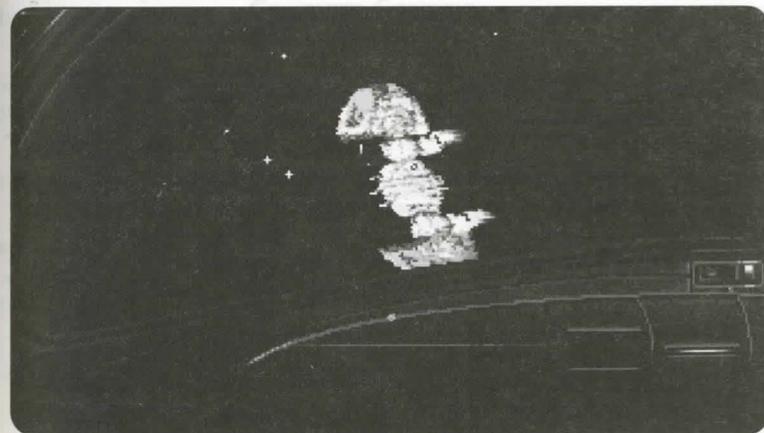
SIMULATOR CONFIGURATION



SIMULATOR CONFIGURATION

SIMULATOR ROOM

If this is your first visit to the simulator, take a few minutes to familiarize yourself with your surroundings before you concentrate on the command console. You enter and exit the simroom through a small door from the DOS area of the Academy. The simroom itself consists of a tiny, oval room with a vaulted dome roof. A screen above the center console lists the high scores that have so far been achieved by other students, given with their call-signs.



To the right of the computer console you see a wall panel. Lean over to the panel and press on it once. The panel slides back into the wall, revealing a simulator configuration menu for Music and Sound FX as well as a joystick calibration option. Pressing the buttons MUSIC and SOUNDFX once toggles their respective functions between active and inactive.

You may also want to calibrate your joystick before you embark on your first simulated mission. Press CALIBRATE JOYSTICK and follow the instructions that appear in the joystick slot. If you have configured Music and Sound FX to your liking and you want to save your selection, touch the option menu anywhere except the two selection buttons. The simulator will save your selection and the wall panel will slide back in place.

If you have already designed a mission and you want to fly your last mission again, you can push the buttons located on the right side of the simulator console once to activate the simulator and execute the mission immediately.

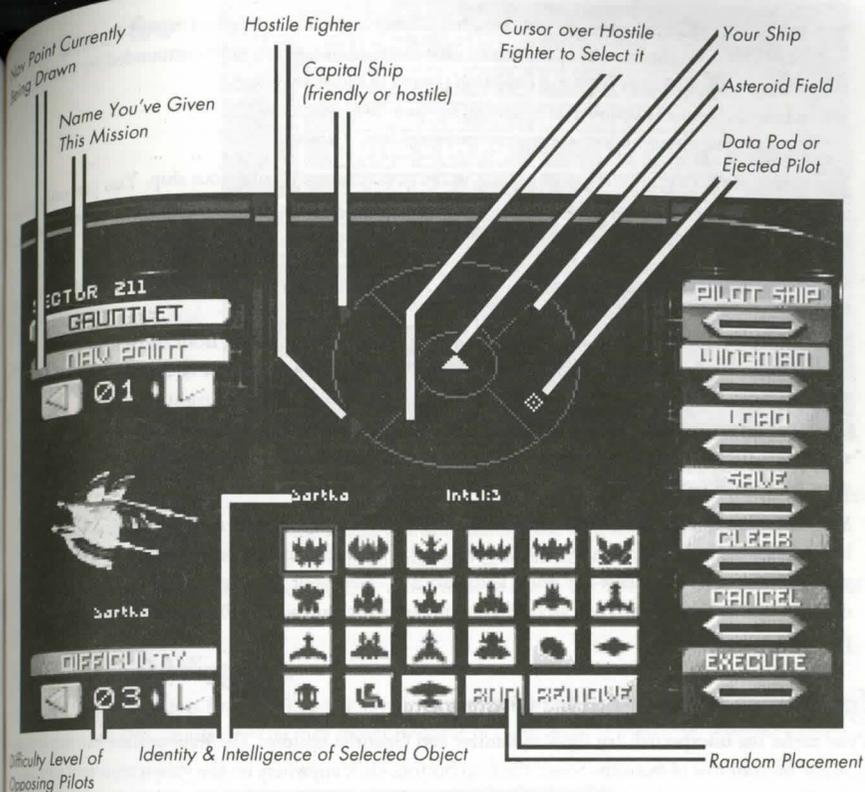
COMPUTER CONSOLE

Configuring Your Mission

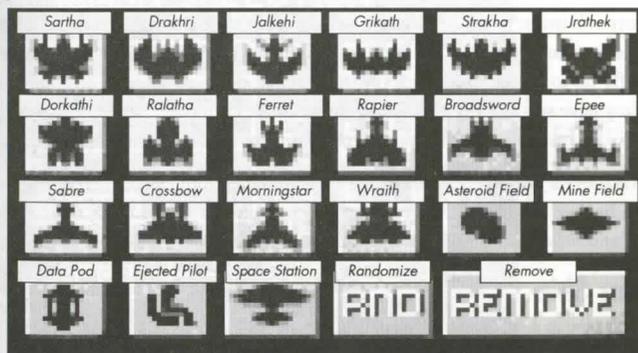
You are now ready to turn your attention to the heart of the flight simulator: the computer console. Once you have taken a seat, click on the computer screen in front of you to activate the simulator. While you are configuring your mission at the computer console, you may select your choices by clicking with the left or the right mouse button. Once you are in the cockpit of your simulated fighter, however, you must take care to distinguish between the left and the right mouse button. Please check the *Reference Sheet* for further details.

The large view screen in the upper half of the console is the "drawing board" of the simulator. The green triangle in the center of the screen represents your "ship." You are free to place various combinations of enemy ships, capital ships, space stations, obstacle fields and other objects around your ship.

- To select a specific kind of opponent, hazard or object, click on the appropriate button located below your view screen.
- A single click on one of the buttons causes a rotating graphical representation of the object to appear in the window at the lower left of the console. The thin box just above the rows of buttons identifies the object you chose.
- Select the particular ship or object you wish to include in the mission you are configuring by clicking on it. Hitting **[Enter]** selects any object currently located under your cursor.
- You must also specify the difficulty level (intelligence level) of each hostile ship before placing it in the action sphere around your fighter. Use the arrow keys of the difficulty level option at the bottom left of your console to choose an intelligence (from 1 to 4) for each hostile ship. The higher the intelligence number, the more accomplished your opponent will be.
- Once you have decided where you want this hostile fighter or object to appear relative to you, single-click on the desired position on your view screen.



COMPUTER CONSOLE



SELECTION BUTTONS

- If you have positioned a hostile fighter, a red triangle appears to indicate its position.
 - Capital ships and the friendly space station are identified by a red triangle surrounded by a circle.
 - Asteroid fields appear as large red circles on the mission display screen.
 - Mine fields appear as yellow circles on the mission display screen.
 - Data pods and ejected pilots are represented by yellow diamonds.
- You may place up to eight different objects in the action sphere around your ship. You can only place one obstacle field and a maximum of four *Ralathas* in each action sphere. (No ship has enough ammunition to destroy more than four of these formidable fighters.)
 - As mentioned above, moving the cursor over each object causes a description to appear in the thin box between the drawing board and the rows of buttons.
 - If you made a mistake or you simply decide to remove a particular object from the action sphere, click on remove in the bottom row of the object buttons. Then move your cursor to the ship or object you want to remove and single-click on it. Clicking on the clear button in the right column on your option menu (or typing C) removes all objects you have placed in the action sphere surrounding your ship at the currently selected nav point. If you hit clear again, the simulator will ask you whether you want to clear all nav points. Press Y to clear all nav points.
 - You may want to configure a mission with a variety of objectives at different nav points. Once you have placed all desired objects in Nav 1, select Nav 2 with the nav button to the upper left side of your console. Selecting a new nav point automatically clears your "drawing board" and allows you to design a new sub-mission. You can configure missions with anywhere from one to four different nav points in this manner.

Randomizer and Gauntlet Options

If you prefer the unexpected, try the Randomizer and Gauntlet options. The Randomizer button is located in the bottom row of buttons. Select the RND button, click anywhere on the viewscreen and this feature will generate unpredictable patterns of objects and hostile ships at the selected nav point. This option is particularly useful in preparing you for the unpredictability of combat in space.

The GAUNTLET option button, located in the top left corner of your simulator console, introduces you to yet another kind of combat experience. Using this option, you fly against wave after wave of enemy fighters. You can fly up to fifteen different levels comprising three waves each, although few students at the TCSN Academy have successfully completed the gauntlet even once. As you progress from wave to wave, difficulty will increase along with the skill of your formidable opponents.

If you manage to achieve a high score, you will be asked to enter your call-sign. Your high score and your call-sign will be displayed on the screen above the console in the simulator room so you can compete with yourself and other pilots in training at the Academy.

Selecting Your Ship

The strategies you employ in any given mission depend not only on the situation you are facing, but also on the kind of ship you are flying. You need to know what weapons you have at your disposal and whether you can rely on help from a wingman or not. The TCSN simulator allows you to select your fighter and your wingman.

SELECT SHIP

SELECT SHIP	RAPIER
BROADSWORD	EPEE
SABRE	MORNINGSTAR
CROSSBOW	WRAITH
FERRET	JRATHEK

DART DF	(2)	CANCEL
PILUM FF	(2)	
SPICULUM IR	(4)	SELECT
PARTICLE C.	(2)	
MASS DRIVER	(2)	

Weapons Loadout of
Highlighted Ship

Pressing the SELECT SHIP button, in the upper right corner of your console, (or hitting [P] on your keyboard) brings up an option screen with the different ships you can choose to fly. When you select a particular ship by single-clicking on it, the screen will also indicate the ship's weapon loadout. Once you have decided which ship you want to fly this mission, and have clicked on it, hit SELECT to save and return to the main option screen. Press CANCEL if you want to return to the main option screen without saving your choice.

Selecting Your Wingman

We have taken four pilots from the ranks of the Terran Confederation and used their profiles to model the wingmen in this simulator. You may recognize some of these fighters from your readings in class.

WINGMAN SELECTION

NONE	EXCELLENT PILOT
HOBBS	EXCELLENT DOGFIGHTER
ANGEL	EXCELLENT ATTITUDE
MANIAC	
LIGHT SPEED	
ACCEPT	CANCEL

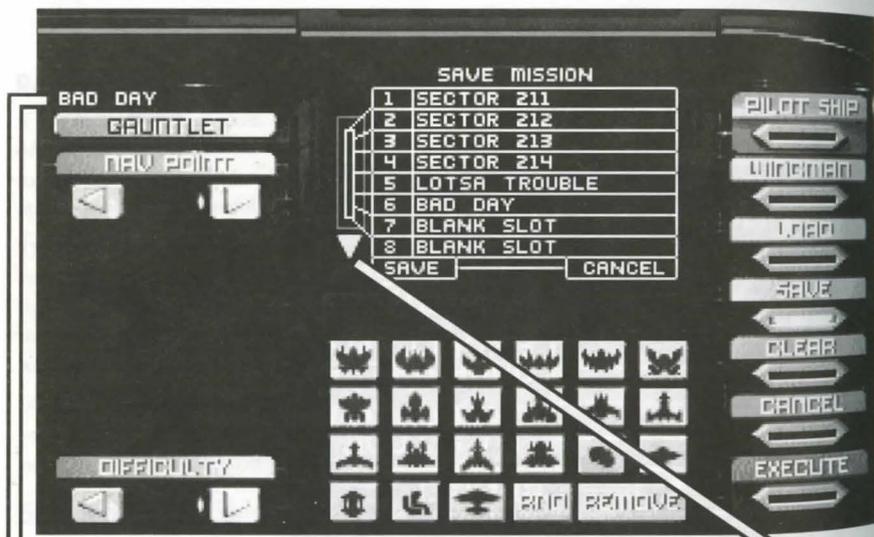
Wingman Stats

SELECT WINGMAN

The WINGMAN button located in the right column in the top column (or **W** on your keyboard) calls up an option screen with five different wingmen options. If you choose NONE, you will fly this mission alone. Selecting one of the wingman names by single-clicking on it shows you a portrait of the pilot and informs you about piloting and dogfighting skills as well as attitude. Choose the pilot you want on this particular mission (or choose NONE) and hit ACCEPT to save your choice. CANCEL returns you to the main screen without saving a wingman choice.

Saving a Mission

If you have created a mission that you wish to save, you must first type a name for the mission into the slot allocated in the top left corner of the console. When you select the slot (press **Tab** until you highlight the slot you want, or click on the slot), a cursor will appear. You can now use **Backspace** to erase the name in the slot. Enter the new mission name and select the SAVE button in the right hand column of your computer screen (or hit **S** on your keyboard). A new option menu with numbered slots will pop up. When you click on a numbered slot, the mission name you just entered will appear. You are also free to move this mission to any slot you wish by dragging it. (Click-and-hold the pointer on the name, drag the pointer to your preferred slot, and release the mouse button.) Once you have placed the mission name in the desired slot, hit SAVE to return to the main console. You may save a total of 24 games in this manner. If you decide to save a new mission in a slot which already contains a mission name, the simulator will overwrite the old data with the new mission. You will be asked whether you want to overwrite the currently saved mission or not. If you change your mind and decide not to save your mission after all, you can escape to the main screen by clicking CANCEL.



Name You're Giving to Mission Being Saved

SAVING A MISSION

Press to Display More Saved Mission Slots

Saving a Mission on a Floppy Disk

If you want to save a mission onto a floppy disk, you must first save the mission in one of the allocated slots. Note the slot number(s) of the mission(s) you are transferring to a floppy, then exit to DOS on the simulator computer and insert a disk into the desired disk drive. From the C: prompt, type:

```
CD \WCA\MISSIONS
```

If you installed the game in a directory other than the default directory, type the name of that directory instead of "WCA" here, and anywhere else it appears in this section.) You are now in the missions subdirectory of WCA. At the prompt, typing DIR will provide you with a list of all available saved missions. The missions are listed by numbers and not by their names, so you must remember the slot number of the mission you wish to save. To copy onto your disk, type:

```
COPY C:\WCA\MISSIONS\MISSION.<mission number> <destination drive>
```

For example, you might type:

```
COPY C:\WCA\MISSIONS\MISSION.007 B:
```

When you want to upload this mission from disk and save it as a certain mission number, insert the floppy disk into the disk drive and type:

```
COPY <source drive>\MISSION.<mission number> C:\WCA\MISSIONS\MISSION.<desired mission number>
```

For example, you might type:

```
COPY B:\MISSION.007 C:\WCA\MISSIONS\MISSION.008
```

If you inserted the disk into drive A:, enter A: instead of B: as the source drive.)

Now the saved game will appear as a saved mission in slot number 8.

Loading a Mission

If you want to play a mission that was previously saved, you can retrieve it by clicking on the LOAD button, in the right column of your computer console (or typing **L** on your keyboard). The new option screen will show you 24 numbered slots with the saved missions. Select the game you want to load and click on LOAD to confirm your choice. This will return you to the main menu on the console. If you change your mind, you can always go back to the main screen by hitting CANCEL.

Other Console Functions

CANCEL. Should you decide you are not ready to fly a mission right now, you can click on the CANCEL button, in the right column of the computer console, (or hit **Esc** on your keyboard) to deactivate the simulator. You can exercise this option if you wish to re-configure your Music and Sound FX selections on the wall panel of the simulator room or if you want to leave the simulator room through the DOS area of the Academy.

EXECUTE. Selecting the EXECUTE button (or typing **X**) will let you fly the mission you have just configured or loaded. The walls of the simroom light up and then fade away. In a few seconds you find yourself in the cockpit of the ship you have chosen to fly.

IN THE COCKPIT

Once you have instructed the simulator to execute your mission, you find yourself in the cockpit of your chosen fighter. The introductory class *Confederation and Kilrathi Ships* has already provided you with basic information on ships and fighter cockpits. However, this will be your first experience in a "real" cockpit. When the TCSN simulator begins to execute your mission, the gauges and indicators of the ship you have chosen appear as the simulator emulates a real fighter. Initially, you see space through the front view screen of the simulator cockpit. You may also select rear and side views, as well as chase plane, tactical, battle, tactical and tailing views.

The TCSN simulator allows you to choose between nine ships to fly. Even though each cockpit may look very different, all but one differs only in the way their instruments and readouts are arranged. (The *Ferris* has one less display than other ships.) Evaluating the information from all controls and gauges at one glance should become second nature to every competent fighter pilot. In combat, you will only have a split second to assess the situation and act on the information given to you. Your ability to remain on top of every development may mean the difference between life and death to both you and your wingman. If you require more time to plan your next move, you can always hit [P] on your cockpit keyboard to pause the simulation. You should keep in mind, though, that this is not an option you have when you are flying real-life missions in the dangerous vacuum of space.

Views During Spaceflight

The front view screen provides you with a clear view of space directly ahead of you. A green circle with crosshairs indicates where your ship's guns are aimed. Brackets appear around the ship you have currently targeted. Hostile targets are framed by red brackets, friendly vessels by blue brackets. A ship communicating with you will be indicated by white brackets. As soon as a target is locked, the brackets turn into a solid box.

Hit [F2] on your cockpit keyboard if you want to go to the **left view** (or the left turret, if there is one available on the ship you are flying). Similarly, you can call up the **right view** (or the right turret) by pressing [F3]. If your fighter has a rear turret or you want to see the **rear view**, hit [F4].

In addition, the simulator has implemented additional views that are designed to help you evaluate your situation and the movement of your fighter. Chase plane view, battle view, tactical view, missile camera view and tailing views are called up by [F5], [F6], [F7], [F8] and [F9] respectively.

- In chase plane view ([F5]), the camera tails your ship so you can view your fighter from immediately behind it.
- The battle view ([F6]) provides you with a panoramic shot of all ships and their respective positions from a distance. This view makes it easier to evaluate your current situation.
- The tactical view ([F7]) shows you another battle view from farther away and at a different angle. Neither battle nor tactical view may be activated unless you are being attacked by enemy ships.
- The missile camera view ([F8]) keeps a missile in its sights after it has been launched, following it to its target. This perspective provides you with a dramatic view of the effectiveness of your deadly weapons loadout.

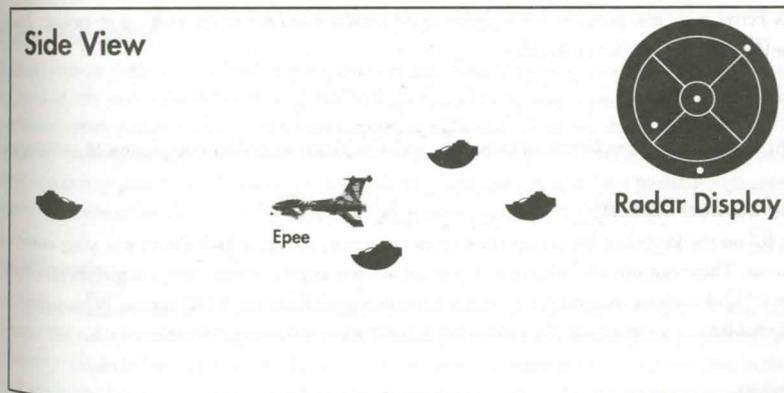
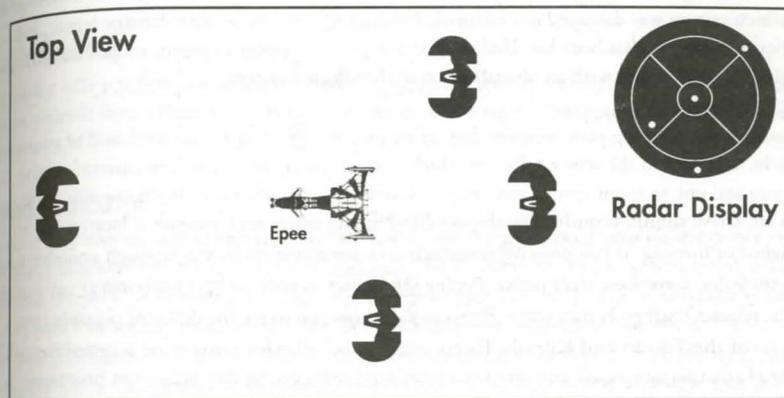
You may toggle through tailing views for several different ships by pressing [F9] repeatedly. The tailing view provides you with a chase plane view for all ships in the area.

If you wish to return to the front view screen, hit [F1].

Radar Display

The circular screen in your cockpit is a radar display. This screen does not indicate distance to a particular ship. Instead, the six sections of the display show you how far you must rotate to be able to see that ship through your front view screen. While this is the single most important screen in your cockpit, it may sometimes also be the least intuitive. Use your experience in the simulator to become an expert at radar interpretation. In space combat, your ability to evaluate the provided radar information may save your life.

RADAR SCREEN



Objects detected by your radar are displayed as dots. A dot in the outer ring tells you your enemy is behind you. The innermost ring indicates the position of ships ahead of you. The other four sections place the detected object alongside, above or below you.

The dots on your radar are color coded:

- red indicates an enemy ship
- blue indicates a friendly fighter
- gray indicates the friendly space station
- yellow indicates an ejected pilot, data capsule or enemy missile streaking toward you

Left VDU (Visual Display Unit)

Damage Status. From time to time, the left VDU shows a profile of your fighter and its current status. When you begin taking damage, this profile appears on your left VDU along with a message indicating which system was damaged or destroyed. Pressing **[D]** also brings up a damage report, indicating how seriously your ship has been hit. Undamaged components appear in green, while damaged systems are displayed in red, along with an identification of the affected system.

Weapons. You can call up your weapons display by pressing **[W]** or **[G]** on the keyboard of your simulator console. The text on the screen tells you which guns and weapon systems are currently active. One type of gun and one weapons system can always be active at the same time. With the **FULL GUNS** option, all guns are active simultaneously. The ship profile displays where each weapon is located and which are damaged or missing. If you press **[W]** repeatedly, the simulator cycles you through available weapons systems (missiles, torpedoes, chaff pods). Typing **[Alt+Enter]** on your cockpit keyboard at any time during flight releases chaff pods into space. Pressing **[G]** allows you to see the different possible guns. (**Weapons of the Terran and Kilrathi Fleets** lists “guns;” all other systems are accessed through **[W]**.) With the **FULL GUNS** option, all guns are fired simultaneously, giving you maximum firepower. However, this option also consumes power at an alarming rate, so it should be used sparingly.

*Note: The Ferret is the most primitive patrol fighter in the simulator and has no left VDU in its cockpit. Pressing **[W]**, **[G]** or **[D]** will have no effect in this ship.*

Right VDU

The right VDU displays important information essential to the successful completion of a mission.

Communication Screen

Pressing **[C]** on the keyboard brings up the Communications screen, which shows you your communication options. These options include such important actions as giving your wingman orders or taunting the enemy. **[C]** also clears incoming communication messages from the VDU screen. **[V]** toggles between enabling or suppressing the video that accompanies incoming communication.

Targeting Screen

When you fire your ship's guns, the Targeting Screen appears automatically, indicating the status of the ship you are currently targeting. This screen can also be brought up by pressing **[T]** on your keyboard.

Note: The center VDU in the Ferret functions as the right VDU.

Armor and Shields Indicators

Displays on the screen of your cockpit indicate the status of your ship's shields and armor. These protective devices diminish with increasing damage to the ship. Shields gradually regenerate unless the shield generator has been destroyed. Once shields have been penetrated, armor begins taking damage. Unlike shields, armor cannot regenerate.

Fuel Indicator

This display tells you how much fuel you have. Using your afterburners may well be the best strategy to extricate yourself from a dangerous situation or zero in on the enemy, but your afterburners also expend a great amount of fuel.

Speed Indicator

The speed indicator consists of two gauges. “Set Speed” indicates the speed your fighter tries to maintain on its own (comparable to the cruise control in a car). “KPS” shows the ship's current speed in kilometers/second. Press **[+]** to increase your speed. To slow down, press **[-]**. (If you are flying your mission using a joystick or mouse, please refer to the *Reference Sheet* for the equivalent commands.) If you need to engage your afterburners, press **[Tab]**, double-click joystick button #2 or double-click the right mouse button. The longer you press, the longer they will remain active. However, don't forget that they require an enormous amount of fuel.

Blaster Indicator

This gauge indicates the power level of your ship's active guns. If you use your guns frequently, the power level of the gun capacitors tends to diminish. Neutron guns, reaper cannon and particle cannon use up blaster power more quickly than laser cannon or mass drivers, so use them with caution. The **FULL GUNS** option depletes your blaster power even more quickly. Your guns will not fire at all if you (temporarily) run out of power — you have to wait until the capacitors have at least partially recharged. A gun's power regeneration is slower if your shields are regenerating at the same time.

Eject Warning

If your fighter has sustained significant damage, the eject warning light will begin to flash. At this point you must assess the situation and decide whether or not to abandon ship. If you decide to keep fighting, your ship will probably “explode,” with you in it. The ramifications are much more severe in real life than in the trainer — don't get in the habit of ignoring the eject warning just because you can safely do so in the simulator.

If you eject (by pressing **Ctrl**[E]), the flight simulation will end and you will find yourself seated at the simulator console ready to fly a new mission. In real life, however, you would probably have to suffer a tongue-lashing, disciplinary action, a reduction in rank or even capture. On the other hand, you would probably also live to see another day. The choice is yours.

Gauntlet Mode

During a gauntlet run, typing **S** on your cockpit keyboard will command the TCSN simulator to show your current score, level and wave on your right VDU. In this way, you can keep track of your kills even during the simulation.

Other Cockpit Commands

Music and Sound Effects. Should you decide you want to activate or deactivate music or sound effects during your simulation, don't interrupt your space-flight. Typing **Ctrl**[M] and **Ctrl**[S] will toggle on and off music and sound effects, respectively.

Pause. If the action gets too hot or the outside world intrudes, press **P** to pause the game. Press any key or button to resume play.

Exit. If your time in the simulator is up or you want to interrupt your flight for some other reason, you can deactivate the simulator and return to the DOS area immediately by typing **Alt**[X].

Change Speed. If ships in the simulator are too fast for you, press **Alt**[+] to slow the simulator's frame rate. If they are too slow, press **Alt**[-] to increase the frame rate.

IN-FLIGHT SYSTEMS

Targeting System

When the Targeting System is activated by pressing **T**, your Targeting screen displays a profile of the ship you have targeted, as well as any damage the target has already suffered.

When the targeting feature is active, one ship in your view screen will automatically be targeted. Red brackets indicate an enemy ship. Friendly ships will be bracketed in blue. Even if there is more than one ship visible through your front view screen, brackets will only appear around one ship. Press **T** repeatedly to toggle through the different ships in sight and select your desired target.

Your targeting system automatically locks onto ships that appear through your view screen, providing you with a tracking mechanism that keeps an enemy ship in its sights. If you press **L** while a target is in your view screen, your targeting system will continue tracking the ship even if it disappears from view, allowing you (for example) to keep track of a particular ship you've already damaged. A perpetually locked target is indicated by a solid box instead of brackets. This targeting lock just keeps track of the position of various ships around you. It does not correspond to the locking system automatically used by an active missile to lock onto a target within a certain range before it is launched.

Improved Targeting and Tracking System (ITTS)

Many of the more sophisticated fighters employ the ITTS, a system that calculates how much you must lead your target in order to maximize your chance of a hit. When you lock onto a target while flying a ship with an ITTS, a red cross appears on the screen. If you line this cross up inside your main crosshairs, you are much more likely to hit your target. The *Ferret* and *Rapier* are not equipped with ITTS.

Tractor Beam System

To activate the tractor beam system (if you have one), go to your rear turret. Hit **G** to cycle through your guns until the tractor beam is selected. Once you have selected the tractor beam, a solid yellow box automatically appears around any retrievable object (a data capsule or an ejected pilot) within range. To activate the tractor beam, hit the fire button on your mouse, joystick or keyboard. *Be sure that you have selected the tractor beam, not an actual gun, before firing!*

Autopiloting System

To shorten the length of travel from nav point to nav point, you will normally want to engage the autopilot feature. The autopilot activates only if there are no hazards such as enemy ships, mines or asteroids in the area. When the coast is clear, press **A** to activate autopilot and AUTO will light. If there are still hazards in the area, the autopilot function will not activate.

The autopilot disengages a few thousand meters from your destination, or any time there is a threat nearby.

Communications System

The Communications System may be activated by pressing **C** on the keyboard of your simulator. The Communications screen then presents you with the potential recipients of your message — the currently targeted enemy or your wingman. If there is only one possible recipient in the area, you don't need to designate the receiver — the simulator will skip over this option screen and immediately present you with the next screen (see the following paragraph). Each receiver is listed by number. Select the desired receiver by pressing the appropriate number key.



Then, a second menu will appear with different messages you can send, listed by number. Press the appropriate number key to select your desired message. When other pilots communicate with you, a white box appears around their ship in your view screen. You can read their messages at the top of your screen. If you want the incoming messages to stay on your VDU longer or disappear more quickly, you can adjust the message speed by pressing **[M]** at any time during spaceflight. Pressing **[M]** repeatedly will cycle you through message speeds from 1 (shortest) to 5 (longest).

Wingman Orders

Break and Attack (**Alt B**). This commands your wingman to leave the current formation and engage all hostile fighters within 12,000 meters. However, he will not attack a capital ship until you do.

Keep Formation (**Alt F**). This commands your wingman to stay in formation if he has asked to break and attack on his own. It does not apply if your wingman is not currently in formation.

Form on My Wing (**Alt F**). This commands your wingman to return to your side and resume the formation you were flying in previously. This applies when your wingman has broken formation to attack an enemy.

Help Me Out Here (**Alt H**). This commands your wingman to engage the enemy attacking you.

Attack My Target (**Alt A**). This commands your wingman to attack the enemy you currently have targeted. This is the only way your wingman will attack an enemy capital ship. However, capital ships can only be destroyed with torpedoes, Mace missiles or Leech missiles — if your wingman doesn't have any of these, he will ignore this command.

Keep Radio Silence (no **Alt** combination). This prevents your wingman from communicating with you until the "Broadcast freely" message is sent.

Broadcast Freely (no **Alt** combination). This lets your wingman communicate with you. It is the opposite of "Keep Radio Silence."

Damage Report (**Alt D**). This commands your wingman to transmit a damage display of his ship, which appears in your right VDU and is automatically updated. You can cancel this command by pressing **[T]** or **[C]**.

Taunting the Enemy

When you have an enemy ship targeted, activating the Communications System (**C**) and selecting the enemy will bring up a menu of different taunts. Select one of these to insult and infuriate your target. You can also send a random taunt at any time during the game by pressing **Alt T**. In a real-life dogfight, taunting your enemy can serve a valuable purpose. An enemy that is furious and distracted makes fatal mistakes more easily. If you remain calm, it will be easier to spot your window of opportunity at the right moment.

SPACECRAFT OF THE TERRAN AND KILRATHI FLEETS

The ships in the Confederation and Kilrathi fleets come with a wide variety of designs and functions. The particular type of ship you fly during each mission will depend on your primary objective. For example, capital ships with phase shields can only be destroyed with torpedoes, Mace missiles and Leech missiles. The simulator will familiarize you with the advantages and drawbacks as well as the primary functions of each fighter. You will need to adjust your combat strategies according to what you're flying and what you're fighting. Even though you have already studied the different fighters in your *Confederation and Kilrathi Ships* class, this brief reference section should refresh your memory. Take a minute to read about each ship before you actually launch into simulator training.

Maximum Velocity/Cruise Velocity. Ship velocities are expressed in kilometers per second (kps). The numbers are always computed relative to a stationary body (or pseudo-body) near the ship, e.g. a nearby planet, an escorted destroyer or even a value derived from the movement of all ships in the area.

Acceleration. The ratings for ship acceleration range from Bad, Poor and Average to Good or Excellent.

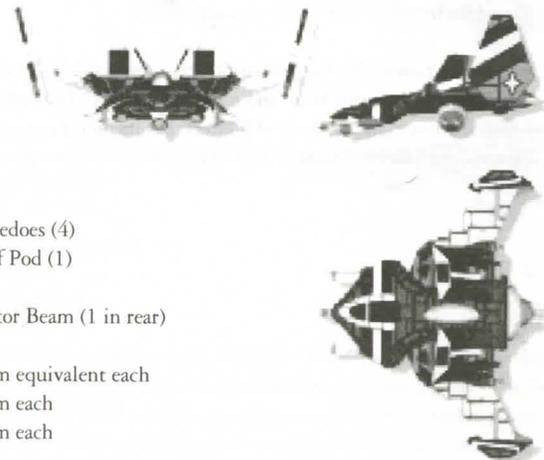
Max. YPR (Maximum Yaw, Pitch, Roll). Yaw describes the ability of a ship to turn to the right or left. Pitch refers to up and down movement. Roll measures the ability of the fighter to spin on its long axis. All numbers are expressed in degrees per second (dps).

Ship's Armor. The measurement of the ship's defensive armor is expressed in centimeters thickness of Durasteel (centimeters equivalent). The higher the numbers, the more effective the armor.

Broadsword

Class	Heavy Bomber
Length	36 m
Max. Velocity	320 kps
Cruise Velocity	150 kps
Acceleration	Poor
Max. YPR	5 dps
Mass	100 tonnes

Weapons	Torpedoes (4)
Mass Drivers (3)	Chaff Pod (1)
Pilum FF Missiles (4)	
Carrots (3)	
Turret Guns (2 per)	Tractor Beam (1 in rear)
Fore and Aft Shields	18 cm equivalent each
Front and Rear	15 cm each
Left and Right	13 cm each



The *Broadsword* was originally designed as a tractor bomber for enemy capital ships, but it also serves as an adequate all-purpose fighter. Poor acceleration and maneuverability may force the *Broadsword* to take several hits from hostile fighters, but strong armor and shields and a wide array of weapons make it a formidable enemy. Keep in mind that the *Broadsword* is equipped with turrets on both sides and the rear of the ship and several missiles. If it manages to get close enough to a capital ship, it can successfully penetrate phase shields with its four torpedoes. A tractor beam allows this ship to perform retrieve-and-rescue missions in space.

Crossbow

Class	Bomber
Length	24 m
Max. Velocity	370 kps
Cruise Velocity	200 kps
Acceleration	Average
Max. YPR	8 dps
Mass	40 tonnes

Weapons

Neutron Guns (2)	Torpedoes (4)
Pilum FF Missiles (3)	Mass Drivers (3)

Rear Turret

Turret Guns (2)

Armor

Fore and Aft Shields	25 cm equivalent each
Front and Rear	20 cm each
Left and Right	25 cm each

The *Crossbow* is a formidable Confederation anti-capital ship bomber. It combines impressive armor and shields with good maneuverability and traveling velocity. The fighter is equipped with torpedoes, Friend-or-Foe missiles and an array of blasters that include a rear turret. It was a contingent of *Crossbows* that destroyed the *Grakneth' Dak*, a Kiltrathi capital ship first sighted near Gorath.

Class
Length
Max. Velocity
Cruise Velocity
Acceleration
Max. YPR
Mass

Weapons

Particle Cannon (2)	Dart DF Missiles (2)
Javelin HS Missiles (2)	Chaff Pods (2)

Armor

Fore and Aft Shields	6 cm equivalent each
Front and Rear	3.5 cm each
Left and Right	3 cm each

The design of the *Epee* is very similar to that of the *Ferret*. It also demonstrates excellent acceleration and velocity, and maneuvers even better than the *Ferret*. While its shields and armor are equally unimpressive, it does carry missiles, chaff pods and more sophisticated blasters. The renowned Confederation pilot Dreddevil met his end in the Enigma Sector when his *Epee* fighter was downed by three *Jalkebi* pilots.

Ferret

Class	Patrol Fighter
Length	10.2 m
Max. Velocity	500 kps
Cruise Velocity	360 kps
Acceleration	Good
Max. YPR	8 dps
Mass	10.5 tonnes

Weapons

Mass Drivers (2)

Armor

Fore and Aft Shields	6 cm equivalent each
Front and Rear	6.5 cm each
Left and Right	4.5 cm each

The *Ferret* is the fastest light fighter in the Confederation fleet. Only the *Wraith*, a Confederation ship model currently in development, will be able to fly at higher velocities than this basic fighter. The *Ferret* has very simple cockpit features, e.g., only one VDU, and it's the ship most graduating rookie pilots will be first assigned to. The *Ferret* demonstrates good acceleration and maneuverability, but it is only equipped with mass drivers and has very weak shields and armor. It is not equipped to perform rescue-and-retrieve missions or to attack capital ships.

Morningstar

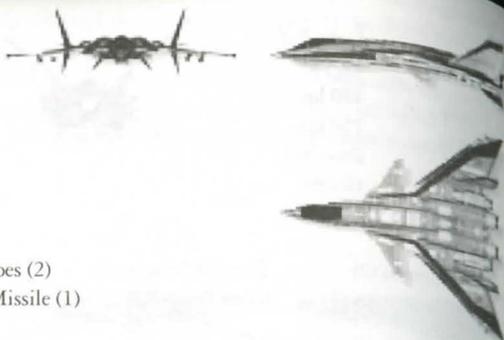
<i>Class</i>	Heavy Fighter
<i>Length</i>	20 m
<i>Max. Velocity</i>	400 kps
<i>Cruise Velocity</i>	220 kps
<i>Acceleration</i>	Excellent
<i>Max. YPR</i>	8 dps
<i>Mass</i>	20 tonnes

Weapons

Particle Cannon (3)	Torpedoes (2)
Spiculum IR Missiles (2)	Mace Missile (1)

Armor

<i>Fore and Aft Shields</i>	15 cm equivalent each
<i>Front and Rear</i>	20 cm each
<i>Left and Right</i>	20 cm each



The *Morningstar* is generally recognized as the current Confederation state-of-the-art capital ship destroyer. It combines strong shields and armor with high maneuverability and excellent acceleration. Particle cannon and missiles make it a dangerous opponent for any fighter. However, its true strength lies in its torpedoes and Mace missile. The Mace is the most powerful weapon currently employed in space combat. Equipped with a nuclear warhead, this weapon wields more explosive force than a torpedo.

Rapier

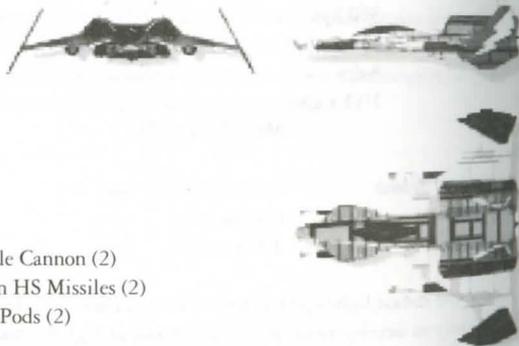
<i>Class</i>	Medium Attack Fighter
<i>Length</i>	19 m
<i>Max. Velocity</i>	450 kps
<i>Cruise Velocity</i>	250 kps
<i>Acceleration</i>	Excellent
<i>Max. YPR</i>	10 dps
<i>Mass</i>	15 tonnes

Weapons

Laser Cannon (2)	Particle Cannon (2)
Dart DF Missiles (2)	Javelin HS Missiles (2)
Pilum FF Missiles (2)	Chaff Pods (2)

Armor

<i>Fore and Aft Shields</i>	8 cm equivalent each
<i>Front and Rear</i>	6.5 cm each
<i>Left and Right</i>	5 cm each



...ly used on most carriers, the *Rapier* was an instrumental force in the Vega campaign. Heavy ... loadouts along with excellent acceleration and maneuverability make it a highly effective dog- ... ship. The *Rapier* is equipped with laser and particle cannon as well as a wide array of missiles ... chaff pods. Since its shields and armor are barely average, it is advisable to take evasive action ... to avoid enemy fire. *Dragon*, the famous Confederation pilot, flew most of the Vega campaign ... in *Rapiers*. He named it the best all-purpose dogfighter in the Confederation fleet.

Class

Heavy Attack Fighter

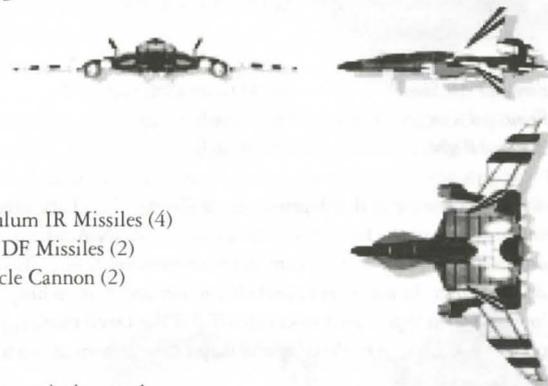
<i>Length</i>	23.6 m
<i>Max. Velocity</i>	400 kps
<i>Cruise Velocity</i>	220 kps
<i>Acceleration</i>	Excellent
<i>Max. YPR</i>	8 dps
<i>Mass</i>	22 tonnes

Weapons

Mass Drivers (2)	Spiculum IR Missiles (4)
Pilum FF Missiles (2)	Dart DF Missiles (2)
Chaff Pods (3)	Particle Cannon (2)
Turret	
Turret Guns (2)	

<i>Fore and Aft Shields</i>	10 cm equivalent each
<i>Front and Rear</i>	16 cm each
<i>Left and Right</i>	11 cm each

The *Sabre* is one of the best fighters ever designed by Terran scientists. It is equipped with multiple mis- ... mass drivers, particle cannon and a rear turret. Keep this in mind when you attempt a rear ... approach. In spite of its size, the ship is fairly maneuverable and accelerates well. When you are flying a ... you should be aware that its fore and aft shields are weak. Even though the armor is very strong, ... has no regenerating capabilities.



Wraith

Class	Medium Fighter
Length	16 m
Max. Velocity	600 kps
Cruise Velocity	400 kps
Acceleration	Excellent, by far the best acceleration of any of the ships
Max. YPR	10
Mass	13.5 tonnes

Weapons

Reaper Cannon (2)	Particle Cannon (2)
Leech Missiles (2)	Javelin HS Missiles (2)
Chaff Pods (2)	

Armor

Fore and Aft Shields	20 cm equivalent each
Front and Rear	10 cm each
Left and Right	10 cm each

The *Wraith*, currently in development at the Terran Tech Laboratories in New York, will herald a new technological age in the fighter ship field. At the TCSN Academy, we are already training our next generation of elite pilots to fly this Confederation medium fighter. It is equipped with incredibly strong shields and armor. In addition to particle cannon and heat-seeking missiles, it will also carry two newly developed weapon types: the reaper cannon and the Leech missile. Its maneuverability, speed and acceleration will make the *Wraith* the fastest ship in the known universe.

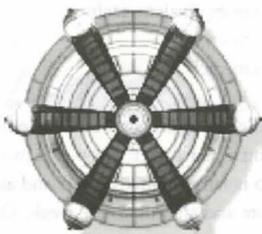
Candar Space Station

Class	Space Station
Length	400 m
Max. Velocity	20 kps
Cruise Velocity	10 kps
Acceleration	Bad
Max. YPR	1 dps
Mass	600 tonnes
Weapons	Flak Guns (2)

Armor

Top and Bottom Shields	100 cm equivalent each
Front and Rear	150 cm each
Left and Right	150 cm each

The simulator has implemented Candar Station so you will learn how to defend friendly space stations. Protected by flak guns as well as strong armor, it is a hard nut to crack. However, a Kilrathi force with formidable weapon loadouts could destroy Candar if they manage to dodge you and its flak volleys since the space station is not protected by phase shields.



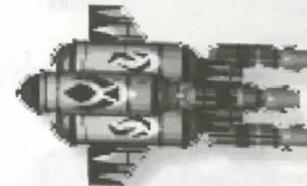
Dorkathi

Class	Transport (Military)
Length	95 m
Max. Velocity	200 kps
Cruise Velocity	100 kps
Acceleration	Poor
Max. YPR	2 dps
Mass	5000 tonnes
Weapons	Flak Guns (3)

Armor

Fore and Aft Shields	19 cm equivalent each
Front and Rear	17 cm each
Left and Right	16 cm each

The *Dorkathi* is one of the most commonly encountered Kilrathi capital ships. Being a transport, it is not equipped with phase shield protection. Its conventional fore and aft shields are fairly weak, but the *Dorkathi* armor will deflect most hits from attacking fighters. Avoid the deadly flak the ship will fire at you from its three turrets. If you follow the suggested attack strategy for capital ships in the back of this manual, however, this transport should be fairly easy to dispose of.



Drakhri

Class	Medium Fighter
Length	11.7 m
Max. Velocity	400 kps
Cruise Velocity	200 kps
Acceleration	Good
Max. YPR	7 dps
Mass	14 tonnes

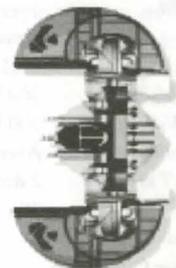
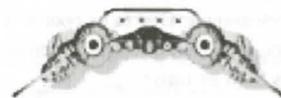
Weapons

Laser Cannon (3)	DF Missiles (4)
Chaff Pod (1)	

Armor

Fore and Aft Shields	5.5 cm equivalent each
Front and Rear	4 cm each
Left and Right	3.5 cm each

The *Drakhri* fighter is the lightest medium fighter of the Kilrathi fleet. Its velocity and acceleration are only slightly above average. The *Drakhri*'s weak shields and armor hardly protect it from enemy hits. Its loadout consists of laser cannon and dumb fire missiles. In spite of its unimpressive design, this ship can still become a formidable enemy in the hands of an accomplished Kilrathi ace. During my duty in the Vega campaign, I barely survived a grueling dogfight with a lone *Drakhri* flown by Khajja the Fang.



Grikath

Class	Heavy Fighter
Length	17.7 m
Max. Velocity	330 kps
Cruise Velocity	200 kps
Acceleration	Poor
Max. YPR	3 dps
Mass	27 tonnes

Weapons

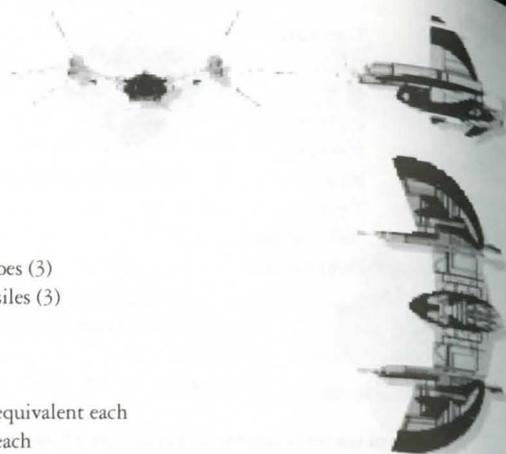
Neutron Guns (3)	Torpedoes (3)
Chaff Pods (3)	FF Missiles (3)

Rear Turret

Turret Gun (2)

Armor

Fore and Aft Shields	17 cm equivalent each
Front and Rear	16 cm each
Left and Right	14 cm each



When you see *Grikath* fighters attacking your space station, act quickly. This Kilrathi heavy fighter remains one of the most efficient capital ship destroyers ever designed, and played an instrumental part in the destruction of the *TCS Freedom* during the Tesla campaign. With its heavy torpedo loadout, it can wreak havoc if it gets close enough to its target. Armor and shields are strong, but maneuverability and traveling velocity are barely above average. Due to its poor acceleration, the *Grikath* is not particularly suited to dogfighting encounters. However, be careful when approaching from the rear, since it can defend itself with deadly volleys from its turret.

Jalkehi

Class	Heavy Fighter
Length	25.2 m
Max. Velocity	360 kps
Cruise Velocity	200 kps
Acceleration	Average
Max. YPR	2 dps
Mass	20 tonnes

Weapons

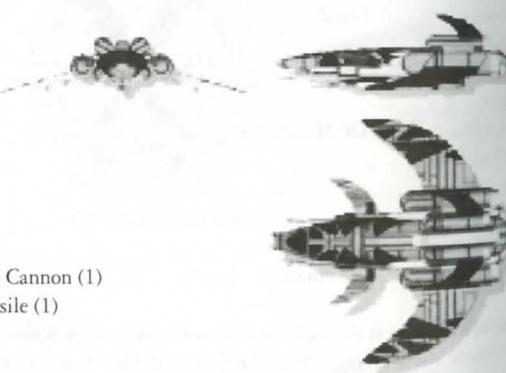
Laser Cannon (4)	Particle Cannon (1)
IR Missiles (4)	DF Missile (1)

Rear Turret

Turret Guns (2)

Armor

Fore and Aft Shields	15 cm equivalent each
Front and Rear	13 cm each
Left and Right	11 cm each



The *Jalkehi* is one of the best heavy fighters in the Kilrathi fleet. Even though maneuverability and velocity are only average, strong armor and shields can absorb several enemy hits. When you are fighting the *Jalkehi*, you should rely on side attacks to avoid fire from the rear turret. Remember to move quickly, so the *Jalkehi* IR missiles won't have time to "memorize" your ship type. The laser and particle cannon provide the *Jalkehi* with good blaster capabilities.

Jrathek

Class	Medium Fighter
Length	20 m
Max. Velocity	500 kps
Cruise Velocity	350 kps
Acceleration	Excellent
Max. YPR	10 dps
Mass	15 tonnes

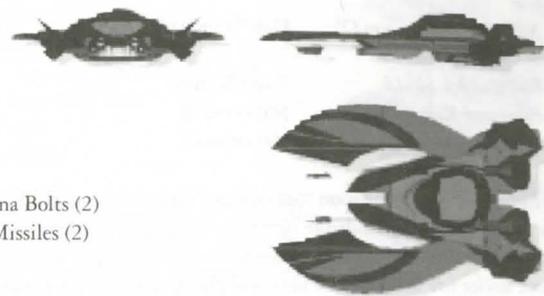
Weapons

Photon Cannon (2)	Plasma Bolts (2)
FF Missiles (2)	DF Missiles (2)
Chaff Pods (1)	

Armor

Fore and Aft Shields	15 cm equivalent each
Front and Rear	20 cm each
Left and Right	18 cm each

When Hajjnah, the renowned Kilrathi scientist and engineer, defected to the *TCS Viking*, he brought with him blueprints detailing the design of a Kilrathi ship currently in development. This *Jrathek* fighter has been prototyped in the TCSN simulator to prepare our students for the newest Kilrathi threat. Similar to the *Wraith*, the *Jrathek* will be equipped with strong shields and armor; in addition, its maneuverability and speed will make it the fastest Kilrathi fighter ship. However, its weapon loadout is less impressive. The *Jrathek* is the only Kilrathi ship you can both pilot and fly against in your simulation training.



Ralatha

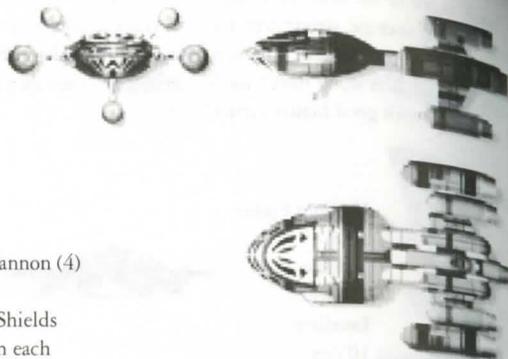
Class	Destroyer
Length	394 m
Max. Velocity	250 kps
Cruise Velocity	150 kps
Acceleration	Poor
Max. YPR	1 dps
Mass	11,000 tonnes

Weapons

Anti-Matter Cannon (2) Flak Cannon (4)

Armor

Fore and Aft Shields Phase Shields
Front and Rear 500 cm each
Left and Right 500 cm each



The *Ralatha* is one of the most sophisticated capital ships of the Kilrathi fleet. The destroyer is equipped with phase shields and multiple turrets as well as anti-matter guns. These huge blasters allow the *Ralatha* to attack other capital ships and space stations. I personally witnessed the demise of the *TCS Viper* when it came under fire from an attacking *Ralatha* destroyer in the Gwynedd sector.

Sartha

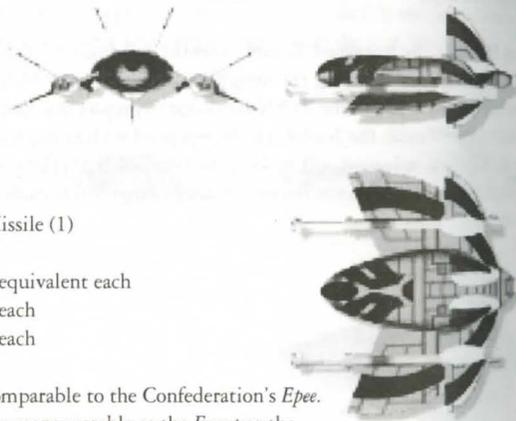
Class	Light Fighter
Length	8.3 m
Max. Velocity	400 kps
Cruise Velocity	220 kps
Acceleration	Good
Max. YPR	4 dps
Mass	12.5 tonnes

Weapons

Neutron Guns (2) DF Missile (1)

Armor

Fore and Aft Shields 5 cm equivalent each
Front and Rear 4 cm each
Left and Right 3 cm each



The Kilrathi *Sartha* is a light fighter comparable to the Confederation's *Epee*. The Kilrathi fighter is slower and not as maneuverable as the *Ferret* or the *Epee*. Shields and armor are extremely weak. At close ranges, the *Sartha* can inflict damage with its neutron guns and one dumb fire missile, but these ships only pose a real threat if they surround your fighter in large numbers. During my service in the Gwynedd system, I lost a wingman to a swarm of *Sartha* pilots.

Strakha

Class	Medium Fighter
Length	17 m
Max. Velocity	320 kps
Cruise Velocity	200 kps
Acceleration	Poor
Max. YPR	4 dps
Mass	15 tonnes

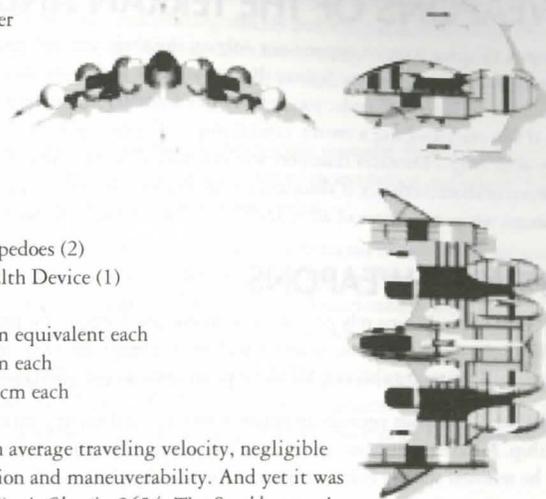
Weapons

Laser Cannon (2) Torpedoes (2)
DF Missiles (2) Stealth Device (1)

Armor

Fore and Aft Shields 4 cm equivalent each
Front and Rear 4 cm each
Left and Right 3.5 cm each

The *Strakha* is a medium fighter with average traveling velocity, negligible shields and armor, and poor acceleration and maneuverability. And yet it was this fighter that destroyed the *TCS Tiger's Claw* in 2654. The *Strakha* was the first (and, to this date, only) Kilrathi ship equipped with a previously-unknown cloaking device that allowed the ship to vanish from sight without a trace. With its torpedoes, the *Strakha* contingent then proceeded to annihilate the *Tiger's Claw*. We have since received confirmation of this device through Hajjnah, the brilliant Kilrathi scientist and engineer who defected to the Terran Confederation two years ago.



WEAPONS OF THE TERRAN AND KILRATHI FLEETS

Strategies in space combat depend not only on the ships you and your opponents are flying, but also on the weapon loadouts of every fighter. For example, if you know your enemy only has short range blaster capabilities and no chaff pods, you will try to eliminate him at long range with particle cannon and missiles. If you are attacking an enemy capital ship with phase shields, you will use different weapons than if you're attacking a *Dorkathi* transport without such defenses. An intimate knowledge of ship loadouts and weapon characteristics is absolutely vital to your survival in space. This section summarizes the most important weapon features of all Kilrathi and Confederation weapon systems.

DEFENSIVE WEAPONS

Flak Gun. Capital ships rely primarily on heavy flak barrages for protection. The massive explosive force and the high velocity of these weapons will down almost any ship immediately. With their great accuracy, flak guns are also employed for point-defense against torpedoes.

Chaff Pod. Chaff pods provide an efficient method of diverting missiles that are currently targeting your ship. Missiles will home in on the chaff, rather than your ship, and explode harmlessly. Chaff pods must be released shortly before impact of the missile. Once you have released chaff, hit your afterburners and escape from the danger zone. Chaff only diverts missiles currently targeted on you. Any missiles that lock onto you after the pod has already been released will not be diverted.

Phase Shield. These protective devices are the latest in defense technology and render any capital ship impervious to fighter guns and most missiles. Torpedoes, Leech missiles and Mace missiles are the only weapon systems capable of penetrating these shields.

Stealth Device. Kilrathi forces have developed stealth technology that renders their ships completely invisible to our detection technology. We have emulated this phenomenon in our simulation of the *Strakha* ship.

OFFENSIVE WEAPONS

When a weapon is named below (e.g., Dart or Javelin), its description applies specifically to a Confederation system. However, in most cases, there is a closely corresponding Kilrathi weapon.

Missiles

Dart Dumb Fire Missile (DF). This missile system is a point-and-shoot weapon with no homing capabilities. Reserve this weapon for use against slow targets at medium to close range when you can easily anticipate the enemy's next movement.

Javelin Heat-Seeking Missile (HS). This weapon zeroes in on any recognizable source of heat, so it can only lock on to a target's engine and/or exhaust system. When you have a Javelin ready, wait until you are behind your targeted enemy and the right VDU indicates a missile lock, then fire. Be careful, though. If your opponent manages to elude the missile, it will lock onto any other heat source it can find, including your own ship or that of your wingman.

Leech Missile. This missile was designed for the *Wraith* fighter currently in development. It drains its budget of all energy for approximately 10 seconds, inactivating shields and weapon systems alike. Within those 10 seconds, you should have no trouble destroying your defenseless enemy. Leech missiles are anticipated to be especially effective against capital ships, where they will be capable of temporarily incapacitating phase shields and flak guns.

Mace Tactical Nuclear Missile. This missile is equipped with a nuclear warhead. Even though it has no homing capabilities, its high velocity and incredible explosive force can annihilate any enemy fighter or capital ship. Use this missile on slow targets at medium to close ranges.

Pilum Friend-or-Foe Missile (FF). This missile recognizes a distinctive signal broadcast by all registered ships of the Terran Confederation. (Hijacked Confederation ships will have been deleted from the registry.) An FF missile targets the nearest ship that isn't broadcasting. This means it will also zero in on Confederation ships with damaged broadcasting systems, including your own.

Spiculum Image-Recognition Missile (IR). If you want to shoot an IR missile at your enemy, you need to keep him in your sights for several seconds. The weapon system "memorizes" the ship type you are targeting. Then it will track the enemy until it is outpaced or it hits. This missile is a particularly lethal weapon in space combat.

Guns

Laser Cannon. Effective at ranges up to 4800 m, laser cannons demonstrate long-range capabilities far better than the neutron gun or mass driver. Laser cannons do not inflict much damage on the enemy, but they also require little power, allowing for more shots at a time.

Mass Driver. Effective at medium ranges, for average damage, the mass driver depletes blaster power a bit more quickly than a laser cannon. Although laser cannons and neutron guns may be more effective in certain situations, mass drivers can always be employed with good results.

Neutron Gun. This weapon inflicts relatively heavy damage on its target. However, it is only effective at fairly close ranges, and depletes blaster power quickly.

Particle Cannon. This cannon combines the long-range capabilities of a laser cannon with the damage potential of neutron guns, creating a highly efficient blaster.

Photon Gun. This weapon system will be part of the *Jratbek* fighter currently in development in Kilrathi shipyards. Even though photon guns deplete blaster power quickly, they also inflict significant damage on their target. With their long-range effectiveness and their high velocity, photon guns will be the only blaster weapons approaching the sophistication of reaper cannons.

Plasma Bolt. This basic blaster is being implemented on the new Kilrathi *Jratbek* fighter. Plasma bolts are only effective at very short ranges and don't inflict much damage. On the other hand, they expend very little blaster energy, allowing the pilot to employ them indefinitely.

Reaper Cannon. Similar to a particle cannon, this blaster also combines long-range effectiveness with powerful damage potential. Reaper cannons are even more powerful than neutron guns, but they also deplete blaster power very quickly. Currently in development for use on the new Confederation *Wrath*, these weapons represent our latest advances in blaster technology.

Turret Gun. This swivel-mounted gun is very similar to the neutron gun. Designed specifically for turrets on fighter ships, it can defend a fighter against rear and side approaches. A medium-range gun with high firing rates, it depletes blaster power rather quickly.

Other Systems

Torpedo. Many Confederation and Kilrathi capital ships have phase shields that render them invulnerable to most fighter weapons. Only Torpedoes and Mace missiles can penetrate these powerful shields. (Torpedoes can only lock onto capital ships.) However, during the twenty seconds they need to lock onto their target, you can't maneuver, thus exposing you to greater danger.

Tractor Beam. This retrieval system will lock onto small targets and pull them into your ship. The tractor beam is a vital tool for retrieving ejected pilots and data capsules from space.

Anti-Matter Gun. This ponderous weapon is found on capital ships and is usually only employed against other capital ships. Like a torpedo, it penetrates shields instantly and directly attacks armor. It is hard to aim and is not used to down fighter-sized craft. If you happen to get in the way, however, a single hit from this weapon is sure to annihilate your ship before you have any hope of ejecting.

MANEUVERS AND STRATEGIES

At this point, I would like to call your attention to some of the most important strategies in space combat. We have already gone over innumerable strategies and maneuvers in class at the Academy. However, it is easy to forget theoretical training in the face of a formidable enemy heading straight for you and your wingman. Even a simulator can only prepare you to some extent for this terrifying experience. The tactics listed below are of such vital importance to your survival in real-life combat that they should be kept in mind at all times. Before you launch into simulator training, you should memorize these hints until they become second nature when you are seated in a fighter cockpit.

GENERAL COMBAT STRATEGIES

Do not rely solely on spin and turn maneuvers when you are trying to take evasive action. In-flight computer systems will have no trouble keeping a lock on your ship if you are simply performing turns at constant speed.

Varying your travel velocity is the most effective way of escaping enemy fire. Hit the afterburner key while you are changing direction so you can add an element of unpredictability that will confuse your opponent.

Stopping your ship with **[Backspace]** on the console is similarly effective. However, you must immediately increase your speed again or you will become a "sitting duck" and an easy target for your enemy.

Limits to Afterburners. While afterburners are the most effective method of escape, they also use up an alarming amount of fuel. You should therefore use them sparingly and in short bursts. It is a good idea to always keep a finger on the afterburner key in case you should suddenly need to escape from a danger zone.

Guns, then Missiles. Many enemy fighters are equipped with fairly strong shields and armor reinforcements. In a crowded dogfight it is advisable to weaken your opponents' shields and armor with gun fire first. Then it will be a lot easier to finish your foe off with a missile.

Missiles and Blasters. Once you have launched a missile against an enemy ship, make sure you give the missile some time to hit its target before you follow up with your blaster weapons. If you shoot your guns too quickly, you may hit the missile while it is still on its way to the target and it will explode harmlessly, leaving your enemy unscathed.

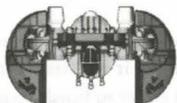
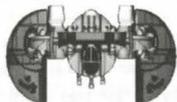
Maximize Blaster Power. In general, the most successful pilots are those which seek to maximize blaster power at all times. Do not open fire randomly and at long ranges or you will waste valuable power. Instead you should attempt to take evasive action until you see a window of opportunity. A few well-placed shots with full blaster power at short range will be far more effective than a barrage of shots at long range.

Afterburner Slide. One of the most effective tactics in space combat is the afterburner slide. As I have already pointed out, enemy computer systems have no difficulty keeping you in their sights if you are maneuvering at constant speeds. Velocity changes help, but they are no guarantee for your safety. If you punch the afterburners, however, then turn hard to the right or left, your ship will begin to slide. This movement is not translated perfectly by tracking systems, making it a highly effective defensive tactic. When enemy forces are approaching you head-on, a slide will remove you from the line of fire and put you in a perfect position for a side attack on the first ships. When your enemy is about 3500 m away, begin turning to the right at an angle of approximately 30°. As soon as the hostile ships are barely visible on the left side of your viewscreen, hit the afterburners and accelerate to full speed. Then turn hard to the left. Try to maintain your current elevation when your ship begins to slide. This maneuver should place you in a perfect position to open fire on your target.

Concentrate on One Foe. Once you have hit an enemy, it is advisable to keep that particular fighter in your sights until he is destroyed. If you switch between targets, each will have time to regenerate its shields and blaster power and it will be harder to finish them off.

Cooperate with your Wingman. Learning how to cooperate with your wingman in dogfights and other missions is one of the most vital skills you will ever acquire. You have already learned the objectives of wing commanders and wingmen in class. This simulator concentrates on teaching you how to be a wing commander and direct your wingman in a way that will ensure the safety and survival of both you and your companion.

AFTERBURNER SLIDE



4. At a range of 1000 - 1500 meters, the nose of your ship should be aiming at the lead enemy ship. Thumb the fire button for maximum effect, then turn and follow the enemy wing.



3. At a range of about 2000 meters, turn hard to the right. Make sure you don't change elevation during the turn.



2. Straighten out and immediately punch your afterburners hard, making sure you achieve maximum velocity.



1. At a range of 3000 - 3500 meters from your target, turn left about 30 degrees.



Directing your Wingman. There is no explicit command that allows you to direct your wingman to a specific target. If you want him to go after a particular ship, however, simply lock onto the desired target yourself and order your wingman to "Attack my Target." This command will send him after your locked objective, while you are free to pursue other ships with your guns or dumb-fire-missiles which do not require a lock. This tactic is only successful if you keep your original target locked.

Asteroids and Mines. When you hit the edge of an asteroid or mine field, it is advisable to slow down. 250 kps is generally thought to be the safest navigation velocity when you are forced to cross obstacle fields.

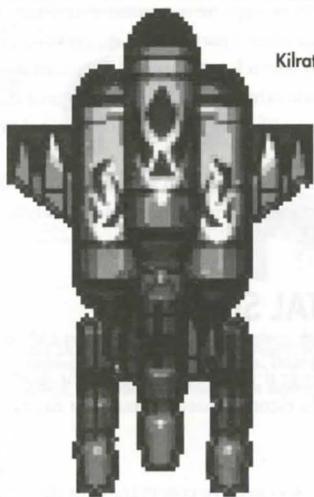
ATTACKING A CAPITAL SHIP

Attacking a capital ship is one of the most difficult missions you can fly. The flak guns from the capital ship will instantly destroy your fighter if you do not dodge their deadly fire in time. You will also have to eliminate a contingent of Kilrathi escort fighters if you want to get anywhere near your primary objective.

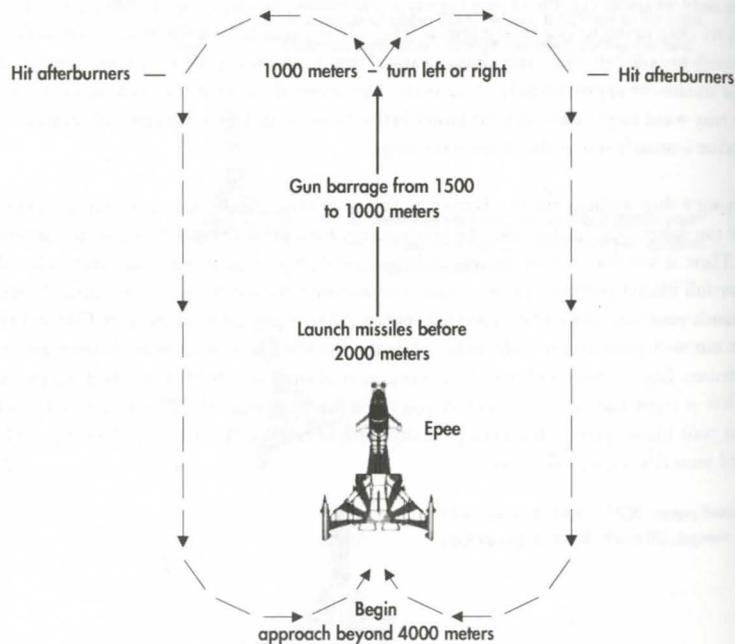
Once you have taken out the escort, you need to concentrate on the capital ship itself. Many capital ships, e.g. the *Ralatha*, have phase shield defenses which effectively counteract any damage from missiles or guns. The only weapons capable of penetrating these shields are torpedoes. Other capital ships and transports are only protected by strong armor. They can eventually be destroyed with missiles and guns. The Leech missile can effectively drain a capital ship of its energy, thereby taking out its flak guns and its phase shields for approximately 10 seconds. This leaves the capital ship defenseless for your attack. You may want to get close to your target before firing your Leech, because flak guns can more easily neutralize a missile if it is shot from long range.

If you are flying a ship without the Leech missile, flak from the capital ship's turrets make a side approach far too dangerous. In this case, the best strategy for a capital ship attack is a maximum velocity rear attack. There is less laser fire in the rear and the capital ship's rear armor is usually weaker. Make sure you have full blaster power before you start your maximum velocity approach from a distance of 4000 m. Launch your torpedoes when you are between 3000 m and 2000 m away. A *Dorkathi* transport can be taken out with guns and missiles only, while the *Ralatha* and *Candar* Space Station are protected by phase defenses. Begin firing with your heaviest gun at about 1500 m. At 1000 m distance, break hard to the left or right and circle back before you begin another approach. This will give you some time to regenerate your blaster power. If you employ this form of rear attack with torpedoes, you will soon be able to record your first capital ship kill.

ATTACKING A CAPITAL SHIP



Kilrathi Dorkathi-class Transport



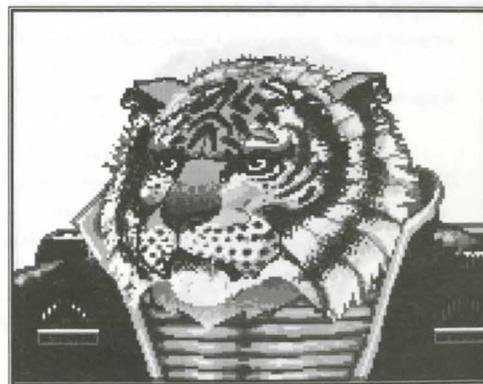
WINGMEN PROFILES



Maniac

When you are flying a mission with Maniac, remember that you are on your own. You cannot rely on him obeying your orders even though his dogfighting and piloting skills are excellent. Flying with a wingman like Maniac in simulated missions will give you an idea of how important it is to obey your wing commander's orders. It will also teach you how to survive when you cannot rely on protection from your wingman.

You have probably all heard of Hobbes, the Kilrathi ace who defected to the Terran Confederation because he was disgusted by the ruthless expansionism of the Kilrathi Empire. Many fighter pilots refused to fly with him because they were suspicious of his motives and saw him as a traitor. After I got to know Hobbes, I was fortunate enough to fly several missions with him. He is one of the most formidable pilots I have ever known. Small wonder that the Kilrathi empire is such an awesome foe when they are fighting with pilots of Hobbes' caliber. With his brilliant piloting and dogfighting skills, as well as his loyalty and dependability as a wingman, he is the epitome of everything



Hobbes

a fighter pilot should be. I incorporated him in the simulation program because Hobbes' example will teach you the merits of an accomplished and loyal wingman and show you the gifts of a rare pilot.

Angel, Captain Jeannette Devereaux, has flown countless missions for the Terran Confederation. She is one of the steadiest, most consistent fighters we have put in the field. She has never failed to loyally protect her wing commander and has always managed to keep her head in even the most heated dogfight. She is also an exceptionally beautiful and mysterious woman, but that is another matter.... I flew many missions with her before we were separated at my request. Becoming emotionally involved with your flying partner can cloud your judgement in the heat of battle. Flying with Angel in the simulator will show you why she is one of the most successful pilots in the Terran Confederation. Her level-headed approach and her unwavering loyalty to her commander have kept her alive through all the difficult missions she has flown.



Angel



Lightspeed

I included **Lightspeed** in the simulator as a tribute to my brother, Bryan Lombard, who flew to his death barely three months after graduating from the Academy. Eager, impulsive and trigger-happy, he and his wing commander unexpectedly ran into a Kiltrathi force on a routine reconnaissance mission. Lightspeed presumably panicked and chased after an enemy *Sartha*. He didn't realize he was being lured away from his commander so the Kiltrathi could finish off both ships separately. He didn't stand a chance against the experienced enemy fighters. As a wing commander in the simulator, you should learn how to protect an inexperienced wingman like Lightspeed and give him orders that are feasi-

ble for him to follow. If I had had the chance to train my brother in this simulator, he might have been more prepared for the Kiltrathi when they came after him that fateful day.

TROUBLESHOOTING

Q: My mouse is not working with WCA. My mouse works with all of my other software applications; why not with WCA?

A: If your mouse is not working with WCA, you should first check to see if your mouse has been loaded in DOS (in your AUTOEXEC.BAT file) or onto the boot disk you are using to play the game. Windows and many other "multi-tasking" environments load their own built-in mouse driver. These mouse drivers will not operate outside of their shell environment. Loading a mouse driver into the DOS environment can be as simple as typing MOUSE [Enter] at the command prompt. For example:

```
C:\>MOUSE [Enter]
```

This command can differ from mouse driver software to mouse driver software. Please consult your mouse user's guide and Mouse Set-up (above) for further details.

Q: Why doesn't my joystick work correctly? It works with WC and WCII.

A: Be sure that your joystick has been calibrated correctly. Once within a mission, press [J] or [Shift][J] to recalibrate your joystick. Also, because of the close interaction between the mouse and the joystick, be sure that your mouse driver is 100% Microsoft-compatible. Please consult your mouse user's guide and Mouse Set-Up for further details.

Q: When I boot the game, it says "Expanded memory not detected," but I have two megs of RAM. What's wrong?

*A: First, not all types of extra RAM are equal. There are two basic kinds—exTENDED and exPANded. If you have no expanded memory, you must configure your extended memory as expanded memory. If you have expanded memory but WCA still won't acknowledge it, most likely some other piece of software, such as a disk cache or RAM disk, is using up all your expanded memory. Check your CONFIG.SYS and AUTOEXEC.BAT files for such programs, and consult the documentation that came with those programs to find out how to reduce their memory consumption. Also consult **Optimizing Your System**.*

Q: WCA threw me out to DOS. It said I had an "Out of memory error." When I tried to re-start, it did it again.

or

Q: My copy of WCA is defective. Every time I play, it throws me to DOS with a Memory Allocation Error.

A: Both are trying to play with less than 586K (601,000 bytes) free. If the game does this, use the DOS command CHKDSK and read the last line of output. It should say "XXXXXX bytes free." This is the amount of free RAM available. If this number is less than 601,000 bytes, modify your AUTOEXEC.BAT and CONFIG.SYS files.

*You may want to sue a system boot disk instead of modifying the CONFIG.SYS and AUTOEXEC.BAT files on your hard drive. Please refer to **Optimizing Your System** for instructions on making a system boot disk for the WCA game.*

Q: *The game still doesn't work after I modified my AUTOEXEC.BAT and CONFIG.SYS files.*
A: Copy down the information the computer provided when it dumped you to DOS, then see **ORIGIN Customer Service** at the end of this manual.

Q: *My game runs slowly and occasionally locks up.*

A: You may be loading other software that is not compatible with WCA. First, try running your game from a system boot disk. Refer to **Optimizing Your System** to create a boot disk. The WCA game is only compatible with Microsoft DOS versions 5.0 or higher. This software is not compatible with 286 PCs. Please use a 386 or 486 PC.

Q: *Why does my computer crash when I try to play WCA while I am logged into our LAN (local area network)?*

A: LAN software often tries to take over the same system resources that WCA uses. Sometimes the two can coexist, but often they can't. If you have strange problems with WCA while your LAN drivers are loaded, try booting from a clean boot disk that does not load your LAN drivers. Please refer to **Optimizing Your System**.

Q: *Why does my computer crash when I try to play WCA through Microsoft Windows (or OS/2, Desqview or DOS 5.0 Task Swapper)?*

A: "Multi-tasking environments"—*Windows, Desqview, Software Carousel, DOS 5.0 Task Swapper*, and so forth—often conflict in their use of memory and other system resources with *Wing Commander Academy*. We do not recommend playing WCA under these circumstances. Even if you do run the game under a multi-tasker, do not swap to another application while playing. Your system will crash if you try to suspend WCA to run another program. In general, we recommend that you log out of *Windows* (or similar applications) and play from the DOS prompt.

REFERENCE SECTION

CONSOLE COMMANDS

Select	Enter	Selects feature currently under cursor
Next	Tab	Moves to next command button
Clear	C	Clears action sphere
Ship	P	Selects ship
Wingman	W	Selects wingman
Load	L	Loads game
Save	S	Saves mission
Execute	X	Runs mission
Escape	Esc	Returns to simulator room

SPACEFLIGHT COMMANDS

To Fire

Gun/Tractor	G	Cycles through guns (or tractor beam)
Weapon	W	Cycles through weapon systems
Targeting Comp.	T	Selects targeting computer/changes target
Lock Target	L	Locks targeting computer (or activates ITTS, if available)
Chaff	Alt Enter	Fires chaff pods

To Fly

Afterburners	Tab	Fires afterburners for as long as key is pressed
Stop	Backspace	Brings ship to immediate stop
Autopilot	A	Engages autopilot
Damage	D	Displays ship's damage screens
Communications	C	Selects communications panel (or clears incoming communication)
Video	V	Enables or suppresses comm video

Simulator Options

Message Duration	[M]	<i>Changes message duration</i>
Music	[Ctrl][M]	<i>Toggles music on/off</i>
Sound	[Ctrl][S]	<i>Toggles sound effects on/off</i>
Score	[S]	<i>Displays score (in gauntlet mode) on right VDU</i>
Pause	[P]	<i>Pauses game</i>
Slower	[Alt][+]	<i>Slows speed of game</i>
Faster	[Alt][-]	<i>Increases speed of game</i>
Exit	[Alt][X]	<i>Exits to DOS</i>
Eject	[Ctrl][E]	<i>Ejects from ship and returns to simulator room</i>

Camera Views

Front	[F1]	<i>Front view</i>
Left	[F2]	<i>Left view / go to left turret if available</i>
Right	[F3]	<i>Right view / go to right turret if available</i>
Rear	[F4]	<i>Rearview / go to rear turret if available</i>
Chase	[F5]	<i>Chase plane view</i>
Battle	[F6]	<i>Battle view</i>
Tactical	[F7]	<i>Tactical view</i>
Missiles	[F8]	<i>Missile camera view</i>
Tailing	[F9]	<i>Tailing view; cycles through ships</i>

Messages

"Attack my target."	[Alt][A]
"Break and attack."	[Alt][B]
Request wingman damage report	[Alt][D]
"Keep formation."	[Alt][F]
"Form on my wing."	[Alt][F]
"Help me out here."	[Alt][H]
Random taunt to targeted enemy	[Alt][T]

USING A JOYSTICK

Between Missions. Move the joystick to maneuver the arrow-shaped pointer around the on-screen picture. When the pointer's shape changes into a cross, press button #1 to select function.

In Space:

Joystick Only:

Forward	<i>Dive</i>
Right	<i>Turn right</i>
Left	<i>Turn left</i>
Back	<i>Climb</i>
Button 1	<i>Fire selected gun</i>

Joystick and Button #2:

Forward	<i>Increase speed</i>
Right	<i>Roll right</i>
Left	<i>Roll left</i>
Back	<i>Decrease speed</i>
Buttons 1 & 2	<i>Fire selected missile</i>
Double click & hold Button #2	<i>Afterburners</i>

USING A MOUSE

Between Missions. Move the mouse to maneuver the arrow-shaped pointer around the on-screen picture. When the pointer's shape changes into a cross, press the left mouse button to select game functions.

In Space. When you move the mouse, a white, circular pointer appears in the view-screen. Your ship homes in on the pointer. Maneuver by moving the mouse until the pointer is where you want to go. You travel in that direction until you move the mouse to a new position.

Mouse Only:

Forward	<i>Dive</i>
Right	<i>Turn right</i>
Left	<i>Turn left</i>
Back	<i>Climb</i>
Left Button	<i>Fire selected gun</i>

Mouse and Right Button:

Forward	<i>Increase speed</i>
Right	<i>Roll right</i>
Left	<i>Roll left</i>
Back	<i>Decrease speed</i>
L & R Buttons	<i>Fire selected missile</i>
Double click & hold Right Button	<i>Afterburners</i>

USING A KEYBOARD

Between Missions. Use **↓**, **↑**, **←**, and **→** (or the numeric keypad) to move the arrow pointer. When the pointer's shape changes into a cross, press **Enter** to select functions.

In Space. Both the numeric keypad (with **Num Lock** off) and arrow keys are active for controlling flight. For sharp turns, climbs and dives, press **Shift** simultaneously.

Numeric Keypad:

Dive	8
Right	6
Left	4
Climb	2
Roll Right	.
Roll Left	0
Decrease Speed	-
Increase Speed	+
Fire Selected Missile	Enter
Fire Afterburner	*

Hold for longer burn

Other Keys:

Fire Afterburner	Tab
Decrease Speed	-
Increase Speed	+
Fire Selected Gun	Spacebar
Decrease Speed Quickly	Backspace

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WELCOME TO GENERAL CHUCK YEAGER'S AIR COMBAT

KEYBOARD PROCEDURES FOR NON MOUSE USERS

Tab	Moves cursor arrow sequentially through options "buttons."
Spacebar	Selects option beneath cursor arrow.
Enter	Selects option with >"text"< (arrows) on either side. Note: this may be different than the button the cursor arrow points to, so you can hit Enter to save time.
Esc	Exit to previous screen.
Backspace	Backup one screen when creating a custom mission.
"Hot keys"	Most options can be selected by pressing the first letter of the first word. For example, "Test Flight" is selected from the main menu by pressing T.

Note: On the Historical Mission Selection screen, pressing 1, 2, or 3 will select the first, second, or third mission visible on the screen.

YEAGER AIR COMBAT KEYBOARD REFERENCES

VIEWS

F1	Forward
F2	Back
F3	Left
F4	Right
F5	Up (Look up at 45° from forward view)
F6	Down (Look down at 45° from forward view)
F7	Plane to target
F8	Target to plane
F9	Map (in playback screen, this activates the "3D box view")
F10	Fly-by

Shift-F1	Behind your airplane, looking forward
Shift-F2	In front of your airplane, looking back
Shift-F3	Alongside the right wing of your airplane
Shift-F4	Alongside the left wing of your airplane
Shift-F5	From below looking up at underside of your airplane
Shift-F6	From above looking down at the top side of your airplane
Shift-F7	Target's cockpit
Shift-F8	Following target
Shift-F9	Circling external view or airplane
Shift-F10	Following missile

(Cursor Arrows) Slew view angle. If you're using the keyboard to control the flight stick, or if you're on the FILM PLAYBACK screen, then you have to press Ctrl along with the arrow keys.

Ctrl-PgUp/PgDn

After you've selected "fly-by-view" these keys will change the altitude of your view position.

- Decrease view magnification

+ Increase view magnification

FLIGHT CONTROLS

1 to 5

Set throttle (0%, 25%, 50%, 75%, 100%)

6

Afterburner (Vietnam Era aircraft only)

7

Throttle -5%

8

Throttle +5%

G

Landing gear up/down

F

Flaps in/out

B

Air brakes and wheel brakes on/off

COCKPIT CONTROL

Backspace

Display/Hide instrument Panel

]

Select previous weapon

[

Select next weapon

Spacebar,

Button A

Fire weapon

Enter, Button B

Select next target to right of current target

' (apostrophe)

Select target closest to center of screen

9

Fire chaff (on MiG-21 and F-4 only)

0

Fire Flare (on MiG-21 and F-4 only)

R

Radar on/off (on MiG-21 and F-4 only)

, (comma)

Decrease RWR magnification (on MiG-21 and F-4 only)

. (period)

Increase RWR magnification (on MiG-21 and F-4 only)

W

Next waypoint

Shift-W

Previous waypoint

Shift-E

Eject

Ctrl-R

Change HUD (Heads Up Display) color

Ctrl-F

Toggle flight info on/off

D

Show how much damage you've absorbed (as % of max damage)

MISCELLANEOUS — DURING FLIGHT

Esc

Toggle flight menus on/off

Ctrl-P

Pause

Ctrl-S

Sounds on/off

Ctrl-Q

End mission

Ctrl-A

Direction to nearest friendly plane

Ctrl-Z

Direction to nearest enemy plane

T

Toggle time compression (1x, 2x, 4x)

MENU COMMANDS

Esc	Toggle flight menus on/off
Left, Right (arrows)	Previous/Next menu
Up, Down (arrows)	Previous/Next item
PgUp, PgDn	Previous/Next item group ("group"=one or more items separated by line)
Home, End	First/Last item
Enter	Make selection and remove menus

HELP FUNCTIONS

Ctrl-I	Invincibility on/off
Ctrl-E	Easy Aiming on/off
Ctrl-L	Easy landings on/off
Ctrl-U	Unlimited ammo on/off
Ctrl-T	Target information on/off
Ctrl-B	Blackouts and redouts on/off
Shift-1	Map window on/off
Shift-2	Flight envelope window on/off
Shift-3	Target view window on/off
Shift-4	Yeager window on/off

Note: Using a help function will prevent you from advancing in Campaign Mode. The Nearest Friend (**Ctrl-A**) and Nearest Enemy (**Ctrl-Z**) features do not count as Help Features in Campaign Mode. **KEYBOARD AND MOUSE USERS:** Because it's more difficult to aim while controlling your airplane with the keyboard or a mouse, you can select Easy Aiming from the Help Menu and still complete a Campaign.

FILM PLAYBACK SCREEN

P	Brings up film playback screen when in flight
Home	Go to start of film
End	Go to end of film
;	Move back five seconds
' (apostrophe)	Move forward five seconds
[Move back 1/20th of a second
]	Move forward 1/20th of a second
5 (keypad)	Stops film
Left Arrow	Play in slow motion
Right Arrow	Play in normal speed
Pg Dn	Play at 2x normal speed

Ctrl-(Cursor Arrows) Slew view angle (Also activated by the tab key and by moving the cursor arrow. These can also be used to rotate perspectives in Box View).

(Function Keys) Set the view mode. All commands remain the same as, except that F9 activates **BOX VIEW** instead of **MAP VIEW**, which is not available on the Film Playback screen.

Enter	Next Target button (only works in Review Film on main menu)
+	Zoom in
-	Zoom out
L	Load film (only works in Review Film on main menu)
S	Save film
Esc	Exit Film Playback Screen

The following commands work only in "Box View."

F9	Activates Box View
H	Always follow plane's heading (default=off)
P	Always follow plane's position, keeping player centered in the box (default=off)

EXITING TO DOS

Ctrl-C Exit to DOS. You will be asked to confirm this by pressing Y.

GAME NOTE

In Campaign Mode and Ace's Challenge you **MUST** come to a full stop at your home base to get credit for a completed mission. In some missions (notably escort missions) the scenario will end after the bombers have reached their final waypoint. You must land at your home base before they reach their final waypoint.

INSTALLING YEAGER AIR COMBAT

To play Yeager Air Combat, you need 640K of memory and a CGA, EGA, MCGA, or VGA compatible video adapter.

Use the Install utility included on the CD-ROM to install the game on your hard drive.

Note: The install utility creates a directory named YEAGER on your hard disk. You need 1.4 megabytes of free space on your disk.

1. Boot your computer with DOS (any version from 2.1 or later)
2. Insert CD-ROM into your CD-ROM drive.
3. Type **D:** and press **Enter**. (Type the appropriate drive letter of your CD-ROM drive.)
4. Type **CD\YEAGER** and press **Enter**.
5. To install, type **Install** followed by the CD-ROM drive letter you are installing FROM and the drive letter you are installing TO. For example, to install from drive **D:** to drive **C:**, you would type **INSTALL D: C:** and press **Enter**.
6. The game is copied into the YEAGER subdirectory on your hard drive.

TO START YEAGER AIR COMBAT

1. Type **C:** and press **Enter**. (If your hard drive isn't C:, enter the correct letter.)
2. Type **CD \YEAGER** and press **Enter**.
3. Type **YEAGER** and press **Enter**. To answer the question on the screen, find the correct answer in the *Airplane Description* section, type the answer, and press **Enter**. There is no time limit, and if you answer incorrectly you get two additional chances.

4. The game will load and you'll see the title screen. Press the spacebar to continue.

The program automatically detects the best graphics mode for your computer and starts the game in that mode. If you want to play the game in a different graphics mode or use an AdLib music card, see Startup Parameters for instructions on these options.

Note: You may need to remove TSRs present in your system (terminate-and-stay-resident programs, such as Sidekick[™]) before starting Yeager Air Combat. You can temporarily avoid these TSRs by booting from your original DOS disk. See *Problems with Game/Technical Support/Warranty* section for information on removing your TSRs.

At any time during the game, you can press **Ctrl-P** to pause the game, and any key will resume. You can also press **Ctrl-C** to quit the game (press Y to confirm).

STARTUP PARAMETERS

When you start Yeager Air Combat, the program automatically detects the best graphics mode for your computer and starts the game in that mode. However, if you want to start the game in a different graphics mode, you can do so by adding a few extra characters (called arguments) to the start command.

EXAMPLE: Let's say you want to load the game with EGA graphics mode and use a joystick. You'd type **YEAGER EGA JOYSTICK** and press **Enter**.

The order of the extra arguments doesn't matter as long as there's a space between each argument.

These are the arguments you can use:

EGA	Loads game with EGA graphics.
MCGA	Loads game with MCGA graphics (Same graphics as VGA, but slower. Maintains compatibility with PS/2 25 and 30).
VGA	Loads game with VGA graphics.
SLOWCARD	When you are in MCGA or VGA mode, if the game freezes on startup, or if you get sound but the wrong colors or no colors at all, try this parameter. It slows down the interface between the computer and the video card.
FASTCARD	Deactivates Slowcard.
JOYSTICK	Loads game with joystick flight control.
KEYBOARD	Loads game with keyboard flight control.
MOUSE	Loads game with mouse flight control.
MOUSE2	Loads game with high-resolution mouse flight control.
LOW	Loads game in low graphics detail mode (less detail speeds up game play).
MEDIUM	Loads game in medium graphics detail mode (less details speeds up game play).
HIGH	Loads game in high graphics detail mode.
NOSOUND	Loads game with sound turned off.
NOSPEECH	Loads game with digitized speech turned off.
PC	Loads game with PC internal speaker sounds.
ADLIB	Loads game with AdLib sound card sounds.
BLASTER	Loads game with Sound Blaster sound card sounds.

ALL

CAMPAIGN

If you want to be able to play all missions without having to win each one, type this parameter to make all missions available immediately. This is a default parameter. Starts new campaign. In order to advanced in Campaign Mode, you will need to land safely at your home base after successfully completing each missions. (See "Playing in Campaign Mode.")

Note: when you quit the game, the program automatically remembers all of that game's startup parameters, as well as all the items checked on the drop-down menus. The next time you start the game, just type YEAGER and press Enter, and those same parameters and menu items will be in effect. Also, if you quit the game in the middle of a Campaign, and you want to return to where you left off, be sure not to select the Campaign parameter the next time you start up the game, as that will put you at the beginning of a new campaign.

QUICKSTART TO AIR COMBAT

HOW TO USE THIS MANUAL

This manual is designed for easy use. All of the game controls and essential information are explained in five succinct chapters:

Mission Menus	Tells you how to select missions, test airplanes, and review films.
Instrument Check in the Cockpit	Tells you how to read all the various instrument panels. Tells you how to fly your airplane, change views, operate various on-board systems, and use <i>Air Combat's</i> special help features.
Flight Recorder	Tells you how to control the Flight Recorder.
Air Combat in Three Eras	Tells you the answers to the Copy Protection questions.

These sections are marked by a black border so you never have trouble finding the sections with the essential gameplay information.

The rest of the manual explains aerodynamics, fighter tactics, maneuvers, and gunnery skills, as well as providing the background for *Air Combat's* Historic Missions. These chapters all contain information and hints that can be directly applied to the game; however, you don't need to read them in order to take to the air and start shooting down airplanes.

QUICKSTART

If you want to jump right into combat with a minimum of reading, use the Quickstart to *Air Combat*. The Quickstart will lead you through a custom mission in which you intercept B-17 bombers in a FW-190. You'll be introduced to *Air Combat's* flight controls as well as useful features like the Target Window and Flight Recorder.

TACTICAL OVERVIEW

At the end of the Quickstart is a section called Tactical Overview. This section explains two basic concepts in air combat: speed and maneuverability. In the end, you'll understand how good tactics are more important than superior hardware.

QUITTING AIR COMBAT

At any point in the game, you can exit to DOS by pressing **Ctrl-C**.

PREPARATIONS

You're going to need to know how to control your airplane, views, and weapons. Take a moment to skim over the flight and weapons control in the chapter called *In the Cockpit*. The sections you want to briefly review are: Flight Stick Controls, Throttle Controls, and Gear, Brakes, and Flaps.

CREATE A CUSTOM MISSION

There are two kinds of missions in *Air Combat*: Custom and Historic. Custom Missions are combat scenarios that you design. You choose the airplanes, the opponents, and the tactical situation. Historic Missions are real missions drawn from three wars.

For this Quickstart, you're going to create a custom mission and fly it. Select Create Mission from the Main Menu.

HOW TO "SELECT" OPTIONS

If you're using a mouse, select options by pointing the mouse cursor and clicking a mouse button.

If you're using the keyboard, press the **Tab** key to move the cursor to the different options. When the cursor is over the option you want, press the **spacebar**. To exit a menu and return to the previous screen, press **Esc**.

CHOOSE THE FW-190

When you create a custom mission, you fill in the details of a war story like you're a veteran fighter jock recounting his exploits over mission whiskey. For this Quickstart, you're going to tell your pals at the O Club how you flamed some bombers in your hot German fighter. Select FW-190 as your plane.

PLACE YOURSELF AT 10,000

The Focke-Wulf 190 A-8 is primarily a ground attack airplane. As such, it maneuvers best at low altitudes. Choose "10,000" feet.

TACTICAL POSITION

Your next step is to tell who had the advantage in the fight. To "jump" an opponent is to come barreling down on his head from behind and above. Since this is your first mission, you should take the advantage. Select "jumped."

CHOOSE YOUR OPPONENTS

Now you need to say how many opponents there were. You're going to go up against bombers, so you can afford a few extra targets. Select "three."

Three of what? You could duel any of the airplane types shown below. However, for the purpose of this Quickstart, your going to shoot down bombers. Select "B-17."

In any Custom Mission, you can fight up to three types of airplanes. You can choose 1-5 airplanes per type, for a maximum of 15 enemies. Whether you choose to be historically accurate or not is up to you — you can mix and match airplanes of different eras, if you like. However, you have enough targets for this mission, so choose "...".

CHOOSE THE ENEMY'S EXPERIENCE LEVEL

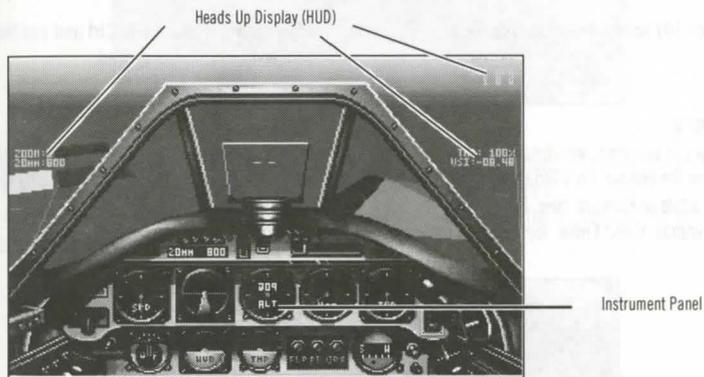
Every pilot knows that the machine is only as good as the guy driving it. No war story is complete without saying whether your opponents were real pros or real pudknockers. In this mission, you're going up against some real lame ducks. Select "amateur."

You're now ready to begin the mission. You'll be placed somewhere behind and above the three B-17s. Select Done to begin.

If you need to pause the game at any point in this mission, press **Ctrl-P**.

BEGIN THE MISSION

You find yourself in the cockpit of a Focke-Wulf 190, diving on your opponents.

**HIDE THE INSTRUMENT PANEL WHEN SEARCHING**

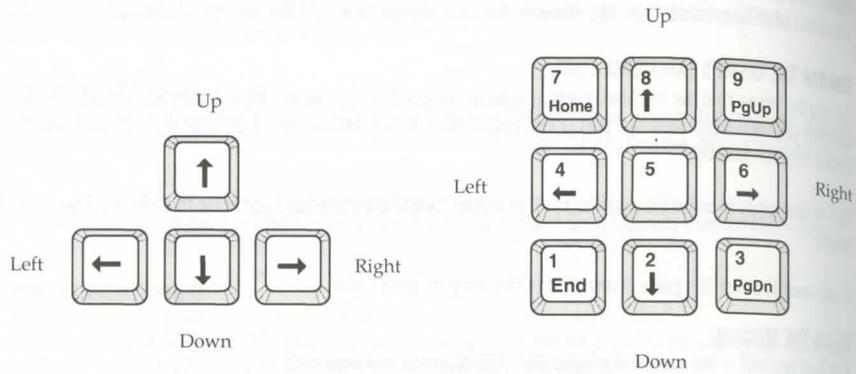
In any combat situation, your first task is to find the enemy. Since you're "jumping" them, you know they're somewhere below and in front of you.

Backspace

When looking for the enemy, it's usually a good idea to hide the Instrument Panel. This gives you a clearer view of what's in front of you. To hide the Instrument Panel, press **backspace**. (If later you want to display the Instrument Panel again, press **backspace**.)

USE THE SCAN KEYS TO ROTATE YOUR VIEW

If you can see the bombers right now, go to the next step. If you can't see the bombers right now, they're probably just a little ways off of the screen. You can use the View Keys to look around your airplane, but since you know the enemy is somewhere in front of you, you should stay in Forward View and use the Scan Keys to scan left, right, and from side-to-side.

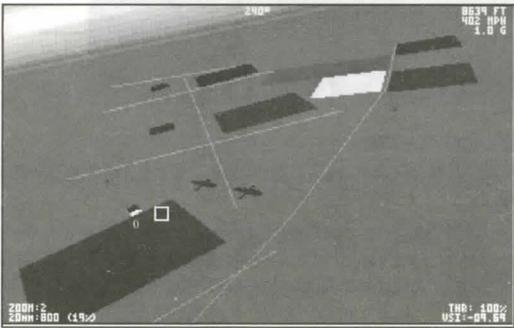


Extended 101 users: Use the cursor keys

AT keyboard users: Press **Ctrl** and use the numeric keypad.

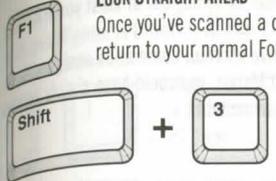
TARGET A BOMBER

Once you spot the bombers, you need to target one. *Targeting* helps you identify, pursue, and obtain valuable information on the enemy. (In Vietnam missions, targeting is essential for firing missiles.) You can only target an enemy plane while in Forward view. Note: When you Scan, you're still in the current view. To target an enemy, press **Enter**. Joystick and mouse users, press button B.



LOOK STRAIGHT AHEAD

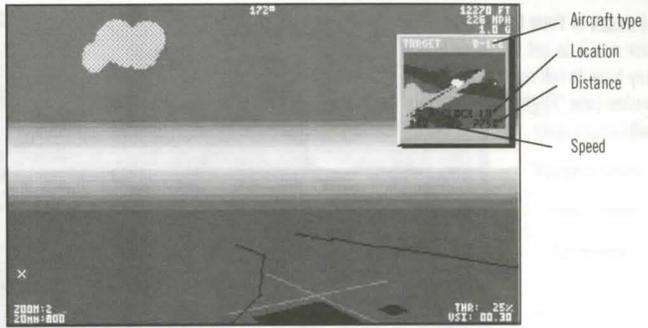
Once you've scanned a direction, it's difficult to scan back to where you're looking straight ahead. To return to your normal Forward View, press **F1**.



TURN ON THE TARGET WINDOW

The Target Window option is located in the Help Menu; but rather than open the Flight Menus, use the shortcut command. Press **Shift-3** to turn on the Target Window.

The Target Window gives you a view of the currently selected target and shows his relative position to you, *regardless of how far away he is*. Here is some other useful information the Target Window provides:



INVINCIBILITY?!

The bomber's gunners are amateurs, so they're not very accurate. On the other hand, there are lots of them shooting at you. Give yourself the ultimate advantage — become invincible to enemy weapons! Press **Esc** to bring up the Flight Menus. Press the right cursor key (→) to move the highlighted bar to the Help Menu. "Invincible" is already highlighted, so press **Enter**.



You're now invincible, so don't worry about those gunners. You'll still feel and hear every hit, but at least you'll have plenty of time to shoot down all three bombers.



Note: Many of the Flight Menu options have shortcut commands assigned to them. Rather than bringing up the Flight Menus, you could have simply pressed the shortcut command, **Ctrl-I**, to select Invincibility.



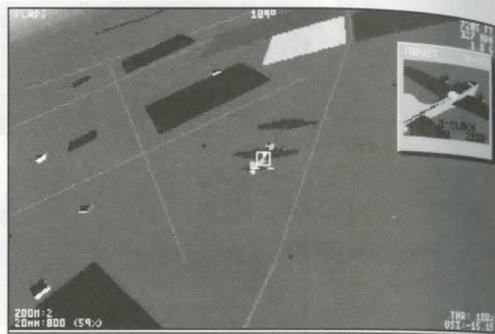
DIVE ON THE B-17S

You're ready to attack. Because you want plenty of time to shoot at the bombers, you don't want to pick up too much speed in the dive. Press **F** to lower your flaps. This will slow your airplane down while you're in the dive and keep you from exceeding your maximum speed limit.

To begin your dive, push your flight stick forward (see "Flight Stick Controls" in *In the Cockpit*).

GET A BOMBER IN YOUR GUN SIGHTS

The trick now is to get the bomber in your sights. You may have to roll right or left to get a bead on the bomber (see "Flight Stick Controls" in *In the Cockpit*).



WHEN YOU'RE IN RANGE, FIRE

In the lower left corner of the Heads Up Display is some weapons information: "20mm :800 (%)." The "20mm" is the currently selected weapon — a 20 mm MG 151/20 cannon. "800" is the number of rounds this weapon has. The percentage sign is your average percentage chance to hit this target at this range.

Watch the percentage closely. When it rises above 20%, start firing. To fire, press the **spacebar**. Joystick and keyboard users, press button A.

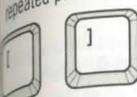


Wait until your chances of hitting are good

As you fire, you'll have to pull back on the flight stick to keep the bombers in sight. Maneuvering and firing is rarely easy, but it must be learned.

WOP 'EM UP

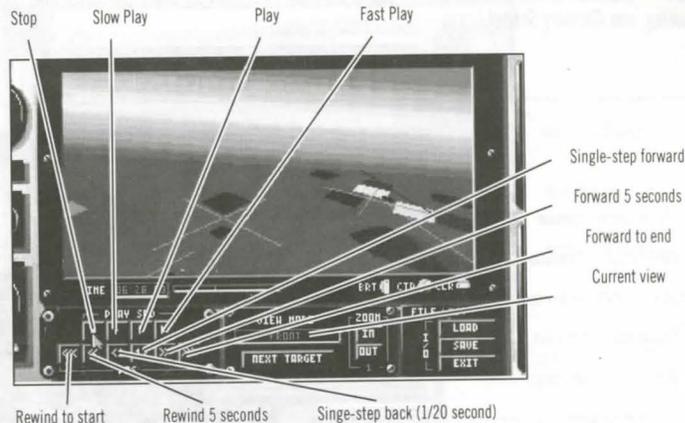
Since your fighter is traveling at over 300 mph, you'll eventually overtake your target. You'll have to circle around for repeated passes.



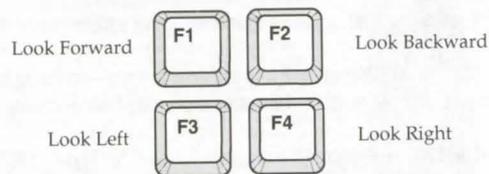
If you run out of ammo, you'll have to switch to one of the FW-190's other weapons. To select a different weapon as the current one, press the right bracket (**]**) or left bracket (**[**) key.

REVIEW THE MISSION

Once you've blasted the bombers out of the sky, you can review the mission with *Air Combat's* Flight Recorder. To bring up the Film Playback, press **P**.



Use the View Keys to change your view of the action. Below is a summary of some of *Air Combat's* more important View Keys (see View Keys in *In the Cockpit* for a more complete listing).



When you're done experimenting with the flight recorder, select EXIT to return to the mission. Once you return to the mission, you can practice some basic maneuvers (see *Basic Maneuvers*).



EJECT AND END THE MISSION

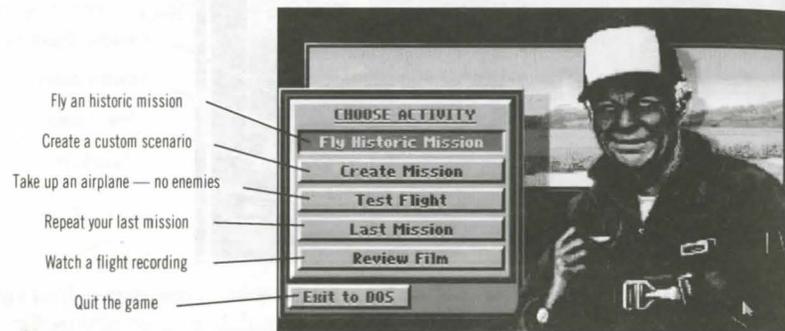
When you're done practicing flying, press **Shift-E** to eject. (There are plenty of Focke-Wulfs where that one came from.) The mission will end automatically when you touch the ground.

If you want to end the mission sooner than that, press **Ctrl-Q**.

STATS SCREEN

When the mission ends, the Stats screen appears. Take a look at your bullet accuracy. Don't worry if you didn't hit much — there are plenty of airplanes for you to practice your gunnery skills (for hints that could improve your shooting, see *Gunnery School*).

MISSION MENUS



Fly an historic mission

Create a custom scenario

Take up an airplane — no enemies

Repeat your last mission

Watch a flight recording

Quit the game

SELECTING OPTIONS FROM THE MISSION MENU

Mouse Users: To select an option, point the mouse cursor and click a mouse button.

Keyboard Users: Press the **Tab** key to move the cursor to the different options.

When the cursor is over the option you want, press the **spacebar**. To exit a menu and back up to the previous screen, press **Esc**.

In addition, most options in the Mission Menus have keys assigned to them — pressing that key selects the option for you. The key is usually the first letter of the option. For example, pressing **F** while viewing the Main Menu selects Fly Historic Mission.

See the *Yeager Air Combat Keyboard References* for a complete listing of the keys for each Game Screen.

FLYING AN HISTORIC MISSION

Though the historic missions have dates next to them, you can fly them in any order you like. But if you want a challenge, you can set the game up so you have to fly the missions in each era as part of a larger campaign. See "Playing in Campaign Mode" in this chapter.

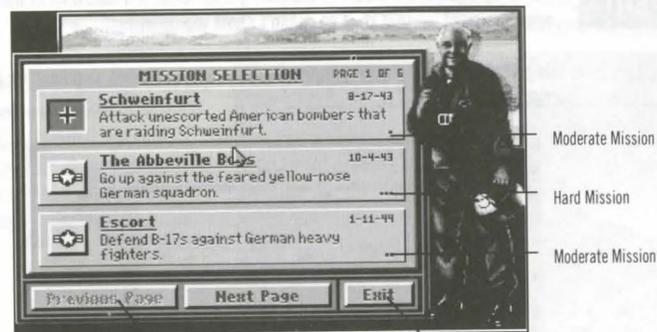
1. Choose Fly Historic Mission from the Main Menu.

2. Choose which conflict you want to participate in.

A single small square below the mission descriptions indicates an easy mission. Two small squares indicate a moderately difficult mission, and three tell you that the mission is especially difficult.

A check (✓) by the mission indicates that you've accomplished the mission fully without any help (see "Ace's Challenge" under "Ending an Historic Mission" in this chapter.)

3. Choose the mission you want to fly.



Moderate Mission

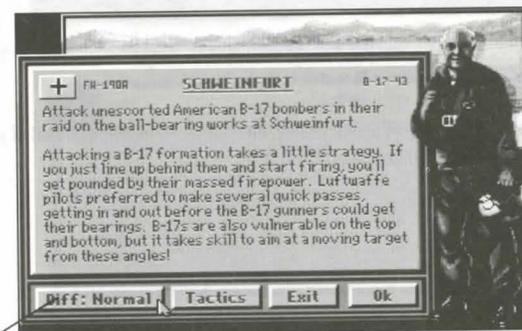
Hard Mission

Moderate Mission

Choose Next Page and Previous Page to review other missions.

Choose Exit to go back to the Conflict Selection screen.

4. Set the Difficulty level for this mission.



To change the Difficulty level, move the cursor to the Diff. button and press a mouse button or the **spacebar**.

DIFFICULTY LEVELS

Difficulty levels affect the skill and experience of your opponents.

EASY

Most of the opponents you face are green. They tend to stay on the defensive and are relatively inaccurate with their weapons. Call this a *target-rich environment*.

NORMAL

You face both skilled and unskilled opponents. Only good judgement will tell you if the guy you're facing is a turkey or an eagle.

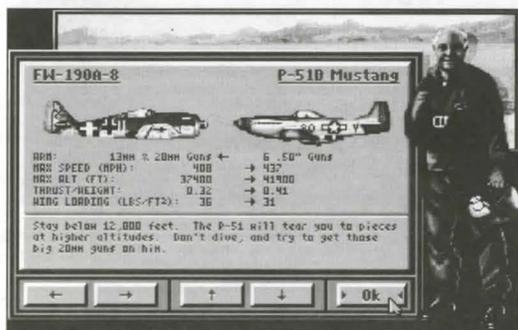
HARD

Expect to see mostly experienced pilots in the air. They'll do everything in their power to get you in their sights and when they shoot, they'll hit.

EXPERT

You're up against the cream of the enemy's air force. It'll take a lot of maneuvering to get the enemy in sight — that is, if he doesn't shoot you down first.

5. Choose Tactics to compare your airplane with the enemy's. This does *not* select airplanes for the mission — it allows you to compare two airplanes before you head out.



Choose ← → to cycle through the airplanes on the left.
Choose ↑ ↓ to cycle through the airplanes on the right.
Choose **OK** to return to Mission Description

The Tactics screen compares your fighter's weapons, ceiling, and maximum weight with that of your opponent. The arrows indicate which plane has the advantage over the other.

6. Choose OK to start your mission.

TAKE THE ACE'S CHALLENGE

Here's something else to shoot for. Take the Ace's Challenge. For each mission you must:

- Achieve the mission objectives
- Don't use *any* help features. The help features include any of the options in the Help Menu. Keyboard and Mouse Users: Because it's more difficult to aim when controlling your airplane with a mouse or the keyboard, you can select Easy Aiming from the Help Menu and still take the Ace's Challenge.
- Land on the runway of your home base, cut throttle to 0%, and come to a complete stop

If you're in a mission and you're not sure whether you've used any help features, press **Esc** to bring up the Flight Menus. If a square appears on the right end of the menu bar, you've used a help feature; no square means you haven't. Note: Once you've started a mission with a help feature active, you're automatically disqualified from the challenge. If a square did appear in the menu bar, you must start the mission again. If you successfully do all of the above, a check (✓) appears by the mission's date.

ENDING AN HISTORIC MISSION

You can end an historic mission anytime. There are three ways to end a mission:

- Press **Ctrl-Q**. Alternately, you can press **Esc**, and then select End Mission from the ? Menu.
- You can fly to your home base, land on the runway, cut the throttle to 0%, and come to a complete stop (see "Navigating" in *In the Cockpit*).
- Eject out of your airplane. You can only do this safely at speeds of 500 mph or less and at an altitude of 300 ft or more.

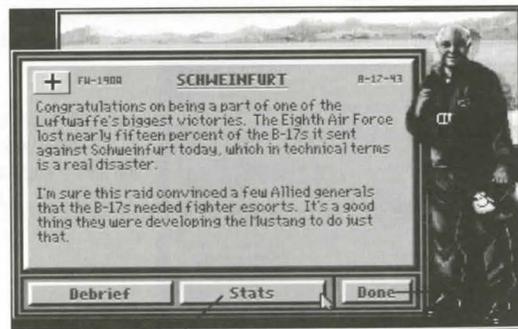
When you've accomplished your mission objectives, a MISSION ACCOMPLISHED message appears at the top of the HUD. If the Yeager Window is on, Yeager delivers the good news.



If you didn't accomplish the mission objectives, it's assumed that you successfully bugged out and got home.

MISSION DEBRIEFING

When you're done flying an historic mission, Yeager tells you how you did.



Select Stats to see details of your mission.

Select Done to return to the Main Menu.

STATS SCREEN

The Stats screen provides information on kills and losses, accuracy with your weapons, how long the mission lasted, and your airplane's condition.

Select Debrief to see Yeager's message again. Select Done to return to the Main Menu.

PLAYING IN CAMPAIGN MODE

When you choose to do a campaign, you're signing up for the long haul — you're committing yourself to fly and fight over 15 missions in order.

To play in Campaign Mode, you must use the campaign parameter (CAMPAIGN) when typing the command line. See "Starting Features" in *Loading Air Combat* section. To start a new campaign, type "Yeager Campaign".

CAMPAIGN RULES

There are six pages of missions in each war. You must successfully complete the current missions before you can go to the next page.

Success means *achieving the mission objectives* as Yeager described them. If the mission objective is to protect bombers, then you must protect bombers; if your mission was to strafe ground targets, then you must destroy any ground targets in your patrol sector.

Don't use *any* help features or your victories will not count and you won't be able to progress to subsequent pages of the campaign. The help features include any of the options in the Help Menu. Keyboard and Mouse Users: Because it's more difficult to aim when controlling your airplane with a mouse or the keyboard, you can select Easy Aiming from the Help Menu and still complete a campaign.

CREATING CUSTOM SCENARIOS

This is your chance not only to tell some outrageous war stories, but to actually go up and fly them. You can set up swarms of inferior opponents for a big turkey shoot, or put yourself in the worst possible situation and see if you can claw your way out of it. Try giving yourself a prop airplane and letting a jet bounce you.

You begin with the words "There I was in my..." You fill in the details. At any point in this sequence, you can select Back Up or press the **backspace** key to return to the previous screen.

1. Choose Create Mission from the Main Menu.
2. Choose the airplane you want to fly.
3. Choose the altitude you want start at.
4. Choose your tactical position.

Tactical Positions

Your tactical position determines where you are in relation to your opponent.

EASY

You're above and behind your opponent, and he's unaware of your presence. You have the tactical advantage.

SAW

You're heading toward each other at roughly the same altitude, completely aware of the other. You're on equal footing with your opponent.

WAS JUMPED BY

Your opponent is somewhere above and behind you, prepared to attack. He has the tactical advantage.

5. Choose a number of opponents.
6. Choose the type of aircraft your opponents are flying.
7. Choose "." to end the sentence, or choose "and" to add more opponents to the scenario.
8. Choose the experience level of your opponents.

Experience Levels

In general, inexperienced opponents will be less aggressive in a dogfight and will try to evade you (diving, jinking, etc.). Experienced pilots will confront you if possible and do everything possible to get a good bead on you. If you manage to get on the tail of an experienced pilot, he'll break, climb, twist, and dive in order to shake you.

Experienced pilots are also better marksmen and will use their weapons more efficiently.

9. Choose Done to fly your custom mission.

ENDING A CUSTOM SCENARIO

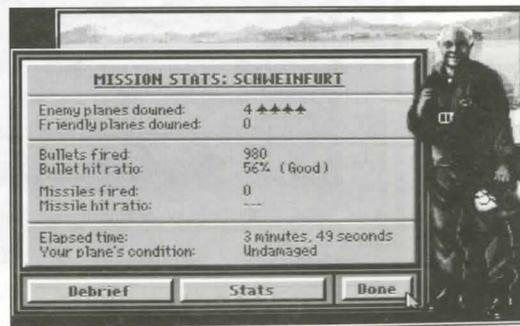
You can end a custom scenario anytime. There are three ways to end a mission:

- Press **Ctrl-Q**. Alternately, you can press Esc, and then select End Mission from the ? Menu.
- You can fly to your home base, land on the runway, cut the throttle to 0%, and come to a complete stop (see "Navigating" in *In the Cockpit*).
- Eject out of your airplane. You can only do this safely at speeds of 500 mph or less and at an altitude of 300 ft or more.

Stats Screen

The Stats screen provides information on kills and losses, accuracy with your weapons, how long the mission lasted, and your airplane's condition.

Select Done to return to the Main Menu.



TEST FLIGHT

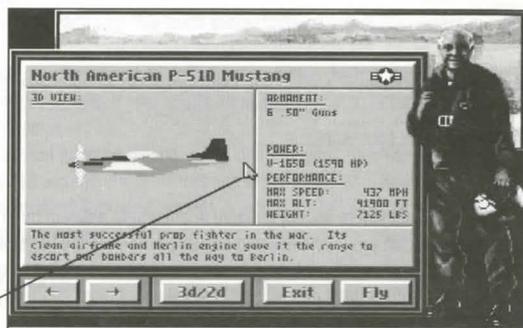
Select Test Flight to take up any of the six featured fighters in *Air Combat*. You can also get performance and armament data as well as Yeager's comments on any of the fighters encountered in the game. (For info on bombers and liaison aircraft, see the aircraft recognition manuals in the historic era description sections in this manual.)

←, →

Select the arrow buttons to cycle through the aircraft.

3d/2d

Select the 3d/2d button to switch between a two-dimensional bitmapped view of the airplane and the three-dimensional polygon view you see in the game. In 3d view you can rotate the airplane to view it from any possible angle.



To rotate the airplane, use the mouse or **Tab** to move the cursor onto the window. Press the **spacebar** or a mouse button.



Click in box with cursor arrow to rotate airplane

Exit

Select Exit to return to the Main Menu.

Fly

You can fly any of the six featured planes in a *non-hostile environment*. Select Fly when viewing the featured planes:

P-51D Mustang	MiG-15 Fagot
FW-190	F-4E Phantom II
F-86 Sabre	MiG-21 Fishbed

The Fly option is greyed out when viewing any airplanes other than the six featured ones.

When you test fly an airplane, the Location Menu appears in the Flight Menus. The Location Menu lets you quickly change your location so you can test your airplane's performance at different altitudes and practice takeoffs and landings. The locations are:

On Runway	On the runway, ready for take off.
Final Approach	Final approach for landing
10,000 ft	10,000 ft up
40,000 ft	40,000 ft up

There are three ways to end a mission:

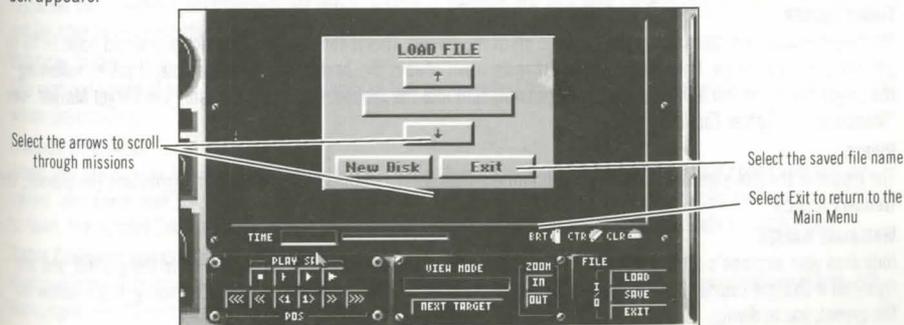
- Press **Ctrl-Q**. Alternately, you can press **Esc**, and then select End Mission from the ? Menu.
- You can fly to your home base, land on the runway, cut the throttle to 0%, and come to a complete stop (see "Navigating" in *In the Cockpit*).
- Eject out of your airplane. You can only do this safely at speeds of 500 mph or less. At higher speeds, there's a chance you could rip your head from your shoulders!

LAST MISSION

Select Last Mission to bypass the mission screens and go directly to the last mission you flew (whether Historic, Custom, or Test Flight). The mission will start without introduction, so keep on your toes.

REVIEW FILM

Review Film lets you load and watch any previously saved flight recording. Once you select Review Film, a select file box appears:

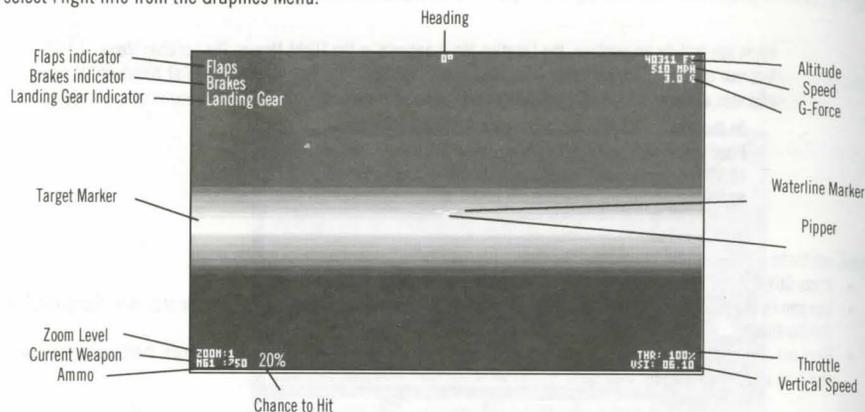


Select the mission you want to load. For more details on saving and loading missions, see *Flight Recorder*.

INSTRUMENT CHECK

HEADS UP DISPLAY

The Heads Up Display or HUD is a transparent sheet spread across the glareshield upon which critical information is electronically projected. The HUD reduces the need to look down at your instruments. Although HUDs of this complexity were not used until recently, every airplane in *Air Combat* can have one. To turn the HUD on or off, press **Ctrl-F** or select Flight Info from the Graphics Menu.



ALTITUDE

Indicates your altitude above sea level.

TRUE AIR SPEED

This displays your forward velocity

HEADING

The compass direction you're heading. 0° is north, 90° is east, 180° is south, and 270° is west.

TARGET MARKER

The target marker indicates where the target is off of the screen. This is the shortest direction you would have to fly to get into a firing position. Note that the shortest route is not always the *best* route — for example, if you're following the target marker at low altitudes, you could possibly turn into the ground. For details on using the Target Marker, see "Maneuver" in *Fighter Tactics*.

PIPPER

The pipper is the gun sight for Korean and Vietnam era fighters (for details on using the gun sights and the pipper, see *Gunnery School*).

WATERLINE MARKER

Indicates your airplane's attitude relative to the ground. When the waterline marker is parallel to the ground, you are flying on a straight course. If the waterline marker is above the horizon (in the blue), you're climbing. If it's below (in the green), you're diving.

LANDING GEAR INDICATOR

Indicates that your landing gear is down. Press **G** to raise or lower landing gear.

FLAPS INDICATOR

Indicates that your flaps are down. Press **F** to raise or lower flaps. For details on flaps, see *Ground School*.

BRAKE INDICATOR

In the air, indicates that your air brakes are on. On the ground, this shows that your wheel brakes are set. Press **B** to set your air brakes or wheel brakes. For details on air and wheel brakes, see *Ground School*.

Note: WW II era airplanes do not have air brakes. Pressing **B** only sets or releases their wheel brakes.

G-FORCE

The number of g's you and your airplane are experiencing. A g is the basic unit of load factors on your airplane — it's often used to measure the severity of a turn. For details on the effects of g's on flight, see *Ground School*.

TIME COMPRESSION

Press **T** to toggle Time Compression on and off. When Time Compression is on 2x, events happen at twice their normal rate, or 4x where events happen at four times their normal rate (hitting **T** a third time turns Time Compression off, and the symbol disappears from the HUD). Time Compression is useful for reducing the amount of time it takes to reach destinations. But be careful; you'll have to react twice as fast to enemy attacks.

ZOOM LEVEL

The level of visual magnification — 1x, 2x, 4x, 8x, 16x, and 32x. The default zoom level setting is 2. To increase visual magnification, press **+**. To decrease visual magnification, press **-**.

CURRENT WEAPON

The weapon currently activated by the weapon control. To change the currently selected weapon, press "[" or "] " on the keyboard. Note: Some fighters only have one type of weapon. For details on weapon control, see "Selecting Your Weapon" in *In the Cockpit*.

AMMO

The ammo (in rounds) available for the currently selected weapon.

CHANCE TO HIT

Your percentage chance to hit the selected target with the current weapon.

THROTTLE

Current throttle setting, displayed as a percentage of maximum engine power. If your afterburners are on, THR: will be replaced by AFT:. (Note: Afterburners are only available in Vietnam era airplanes.) If your engine is damaged, you may not be able to increase throttle to 100%.

VERTICAL SPEED

The vertical speed of your aircraft in thousands of feet per minute. This number is positive when ascending, negative when descending.

LANDING READINESS

When you are on your final landing approach, you need to lower your flaps, reduce your vertical speed and your air speed, and lower your landing gear. When you've lowered your gear and your flaps and reduced your air speed enough to land, the symbol "xxx" appears next to your vertical speed indicator, at which time it is safe to touch down.

RADIO COMMUNICATIONS/WARNING MESSAGES

Radio communications and warning messages appear at the top of the screen. For details on communications and messages, see "Communications and Warnings" in *In the Cockpit*.

INSTRUMENT PANEL

The Instrument Panel displays the necessary information for controlling your aircraft. The Instrument Panel shown below belongs to the F-4 Phantom. The Instrument Panels of *Air Combat's* other aircraft are illustrated at the end of this chapter.

**LANDING GEAR INDICATOR**

Shows whether the landing gear is up or down. Press **G** to raise or lower landing gear. The green light indicates the landing gear is up. The red light indicates the landing gear is down, enabling safe landing.

FLAPS INDICATOR

Shows whether the wing flaps are up or down. Press **F** to raise or lower flaps. For details on flaps, see *Ground School*. The green light indicates the flaps are up. The red light indicates the landing flaps are down.

BRAKE INDICATOR

In the air, this shows whether your air brakes are on or off. The green light indicated the brakes are off. The red light indicates the brakes are on. On the ground, the red light indicates that your wheel brakes are set. Press **B** to set your air or wheel brakes. For details on air brakes and wheel brakes, see *Ground School*.

Note: WW II era airplanes do not have air brakes. Pressing **B** only sets or releases their wheel brakes.

CHAFF/FLARE INDICATOR

The number of chaff and flare bursts you have left. Press **0** to drop flares and **9** to drop chaff. For details on firing chaff and flares, see "Countermeasures" in *In the Cockpit*.

RADAR MONITOR

Displays objects seen by your active radar. Press **R** to turn your radar on and off. For details on using radar, see "Detecting by Radar" in *In the Cockpit*.

WAYPOINT INDICATOR

Indicates the direction you need to fly to get to the next waypoint. Press **W** to change the next waypoint you want to head toward. See "Navigating" in *In the Cockpit* for more details.

SPEED INDICATOR

Registers the speed of the airplane in miles per hour (mph).

ARTIFICIAL HORIZON

Shows the wing's degree of bank. Artificial horizons in Korean and Vietnam era cockpits show the degree of pitch as well.

ALTIMETER

Measures the height in feet of the airplane above sea level. *Air Combat's* airports and open terrain are at sea level.

RADAR WARNING RECEIVER (RWR)

The RWR is a passive detection device that senses any active radar currently aimed at your airplane. For details on RWR, see "Radar Warning Receiver" in *In the Cockpit*.

HEADING INDICATOR

Like a compass, this shows which direction the plane is flying — north, south, east, west, or points between. For navigation tips, see "Navigating" in *In the Cockpit*.

VERTICAL SPEED INDICATOR

Indicates whether the airplane is climbing, descending, or in level flight. The rate of climb is measured in thousands of feet per minute.

FUEL GAUGE

Indicates how much fuel you have left. When you run out of fuel, your engine quits.

CURRENT WEAPON

The currently selected weapon and the number of rounds left.

TEMPERATURE WARNING GAUGE

Shows when your engine temperature is above normal. At normal engine temperature, this gauge is at 0. At maximum temperature, your engine will soon overheat and catch on fire.

OIL PRESSURE GAUGE

Indicates oil pressure in your engine. If your engine is damaged, oil pressure may drop and your engine will overheat.

THRUST GAUGE

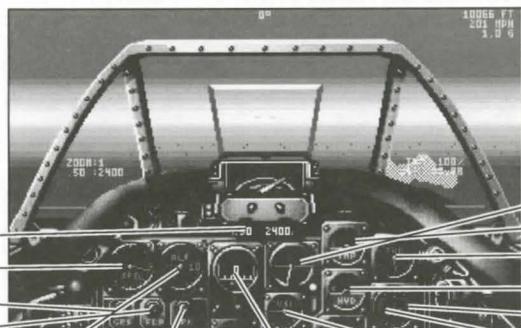
Indicates your thrust. A green light on in the F-4 indicates that your afterburners are on. No light on in the F-4 indicates no afterburners. In the MiG-21, a red light indicates that your afterburners are on. A green light on in the MiG-21 indicates no afterburners.

HYDRAULIC FUEL GAUGE

Monitors the pressure in your hydraulic system. If your hydraulic system is damaged, pressure will drop. In hydraulically-controlled airplanes (F-4, F-86, and MiG-21), low hydraulic pressure limits the effectiveness of the flight stick. In all *Air Combat* airplanes, a loss of hydraulic pressure prevents you from dropping flaps, air brakes, and landing gear.

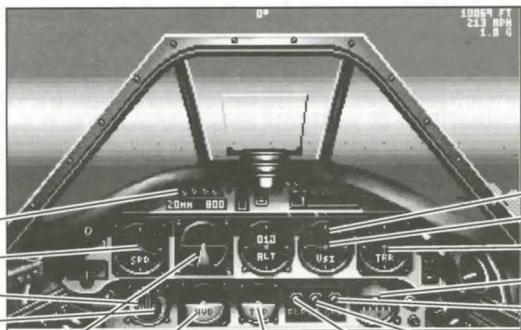
COCKPITS

P-51 MUSTANG



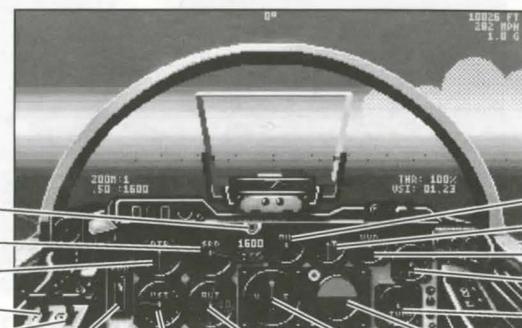
- Weapon Indicator
- Speed Indicator
- Landing Gear Indicator
- Flaps Indicator
- Altimeter
- Brake Indicator
- Heading/Waypoint Indicator
- Vertical Speed Indicator
- Artificial Horizon
- Temperature Gauge
- Throttle
- Hydraulic Pressure Gauge
- Fuel Gauge
- Oil Pressure Gauge

Focke Wulf-FW190



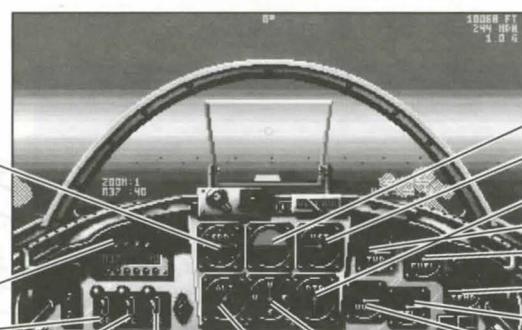
- Weapon Indicator
- Speed Indicator
- Oil Pressure Gauge
- Fuel Gauge
- Altimeter
- Vertical Speed Indicator
- Throttle
- Heading/Waypoint Indicator
- Landing Gear Indicator
- Artificial Horizon
- Hydraulic Pressure Gauge
- Temperature Gauge
- Flaps Indicator
- Brake Indicator

F-86 SABRE



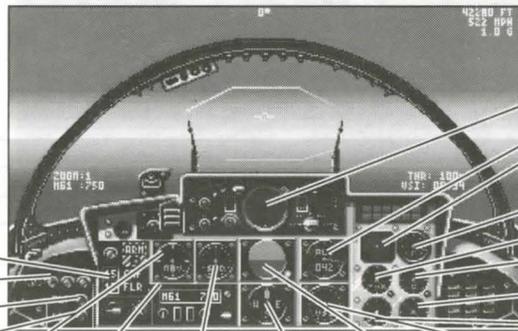
- Weapon Indicator
- Speed Indicator
- Waypoint Indicator
- Flaps Indicator
- Landing Gear Indicator
- Brake Indicator
- Vertical Speed Indicator
- Altimeter
- Heading/Waypoint Indicator
- Artificial Horizon
- Oil Pressure Gauge
- Temperature Gauge
- Hydraulic Pressure Gauge
- Fuel Gauge
- Throttle

MIG-15 FAGOT



- Speed Indicator
- Weapon Indicator
- Brake Indicator
- Flaps Indicator
- Landing Gear Indicator
- Altimeter
- Heading Indicator
- Artificial Horizon
- Vertical Speed Indicator
- Waypoint Indicator
- Throttle
- Fuel Gauge
- Temperature Gauge
- Hydraulic Pressure Gauge
- Oil Pressure Gauge

F-4 PHANTOM II

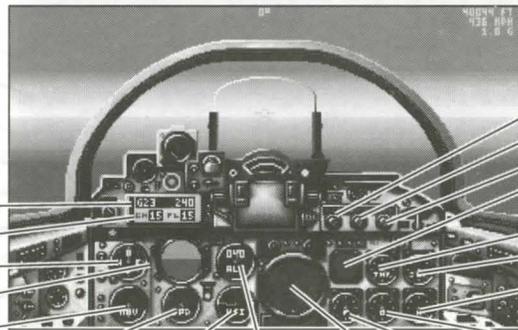


Chaff/Flare Indicator
Landing Gear Indicator
Flaps Indicator
Brake Indicator

Waypoint Indicator
Weapon Indicator
Speed Indicator
Heading Indicator
Artificial Horizon

Radar Monitor
Altimeter
Radar Warning Receiver (RWR)
Fuel Gauge
Thrust Gauge
Oil Pressure Gauge
Hydraulic Pressure Gauge
Temperature Gauge
Vertical Speed Indicator

MIG-21 FISHBED



Weapon Indicator
Chaff/Flare Gear Indicator
Heading Indicator
Artificial Horizon
Waypoint Indicator

Speed Indicator
Vertical Speed Indicator
Altimeter
Radar Monitor
Fuel Gauge

Flaps Indicator
Brake Indicator
Landing Gear Indicator
Radar Warning Receiver (RWR)
Throttle
Temperature Gauge
Hydraulic Pressure Gauge
Oil Pressure Gauge

IN THE COCKPIT



SOME IMPORTANT GAME KEYS

Look Forward



Look Backward

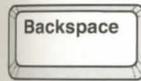
Look Left



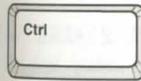
Look Right



Pauses the game and brings up the Flight Menu. Options on the Flight Menu let you configure the game to your liking. See Flight Menu in this chapter.



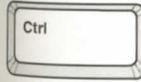
Display/hide Instrument Panel.



+



Pauses the game. Press any key to continue.



+



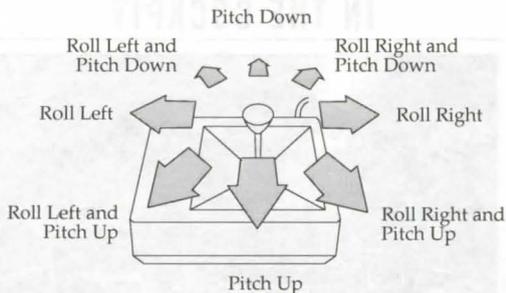
End mission.

FLIGHT STICK CONTROLS

A pilot uses the flight stick to roll, climb, and dive. In *Air Combat*, the flight stick automatically coordinates the rudder to produce even turns.

You can control the flight stick with a joystick, mouse, or the keyboard. To change your control device, press **Esc** to bring up the Flight Menu. From the System Menu, select Joystick, Keyboard, Mouse, or Hi-Res Mouse.

JOYSTICK

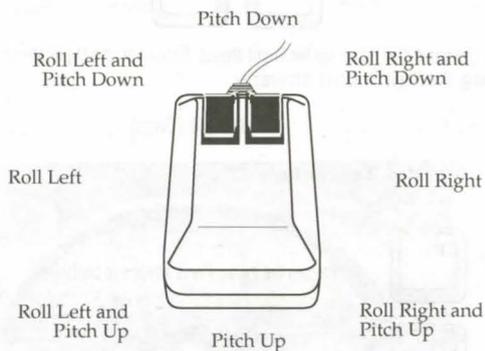


Calibrating Your Joystick

If you notice your airplane isn't flying level but tends to "drift," you need to recalibrate your joystick. To calibrate your joystick:

1. Press **Esc** to bring up the Flight Menu.
2. Select Joystick from from the System Menu.
3. At the prompt, move your joystick to the upper left corner and press a button.
4. At the prompt, move your joystick to the lower right corner and press a button.
5. Return the joystick to center.

MOUSE

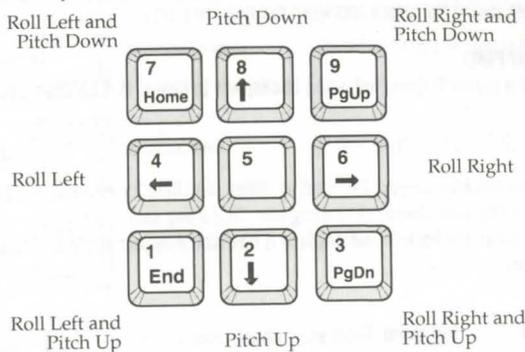


Centering the Flight Stick

To center your flight stick, press / (or 5 on the numeric keypad).

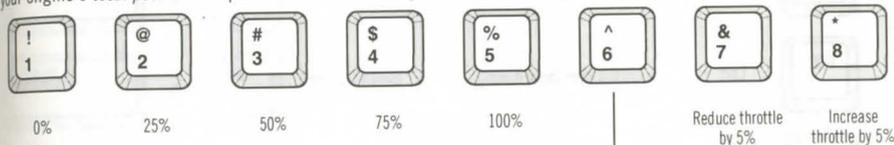
KEYBOARD

Use the numeric keypad to control your airplane. Hold down a key to initiate a roll, climb, dive. When you release the key, the flight stick automatically centers.



THROTTLE CONTROLS

The throttle controls the amount of energy your aircraft's engine produces. This energy is measured as a *percentage* of your engine's *total potential output*. The throttle can only be controlled using the keyboard.



Increase throttle to 100% and turn on afterburner (only applies to Vietnam era airplanes). To turn off the afterburner, press any other throttle key.

GEAR, BRAKES, AND FLAPS

Your gear, brakes, and flaps are controlled with the keyboard.



On the ground: Set/release wheel brakes

For detailed explanations of these flight controls, see *Ground School*.

VIEW KEYS

Air Combat's 18 view keys not only make for dashing cinematic sweeps of aerial acrobatics — they have tactical uses as well. While patrolling, combat pilots must constantly scan the sky for bogeys. In a dogfight, visual contact with the enemy is critical — both during the attack and when evading the enemy.

DISPLAY/HIDE INSTRUMENT PANEL

If the Instrument Panel is currently displayed, press **backspace** to hide it. If it's hidden, press **backspace** again to display it.

COCKPIT VIEWS

The Cockpit Views let you quickly view your surrounding. When searching for a bandit, you can press all six keys in rapid order and have a pretty good chance of spotting him. That being said...

Stay alert! The area below and in back of your airplane is obstructed by your airplane. This is a blind spot the enemy would love to hit you from!



Forward

Look ahead. This is your "normal" view



Back

Look over your tail at what's behind you



Left

Look over the left wing



Right

Look over the right wing



Up 45°

Look up at a 45° angle from Forward View



Down 45°

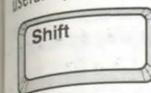
Look down at a 45° angle from Forward View



You can only target opponents from Forward View. Note that you can still target opponents while *scanning* in Forward View (see "Scan Keys" in this section).

EXTERNAL VIEWS OF YOUR AIRPLANE

External Views can be used to get a wider view of your airplane and its surroundings. External Back View is especially useful if you're worried about visitors at 6 o'clock low.

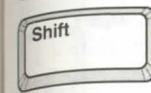


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External Forward

Behind your airplane, looking forward.

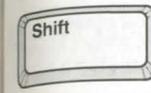


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External Back

In front of your airplane, looking back.

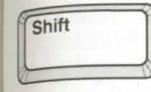


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External Right

External looking right.

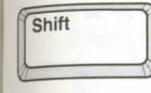


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External Left

External looking left.

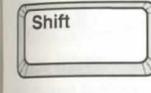


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External below

From below looking up.



+



External above

From above looking down.

OTHER VIEWS



Plane → Target

View of your airplane (foreground) in relation to current target (background). You must have a target to select this view (see "Targeting and Firing" in this chapter).



Target → Plane

View of current target (foreground) in relation to your airplane (background). You must have a target to select this view (see "Targeting and Firing" in this chapter).



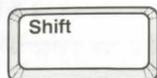
Map

A map of the area with waypoints (see "Navigating" in this chapter for details on using the Map).



Fly-By

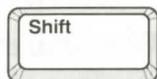
View from a fixed point below your airplane as it flies overhead. Press **Ctrl-Pg Up** to elevate your view of the airplane as it passes by. Press **Ctrl-Pg Dn** to lower your view.



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**Target's Cockpit**

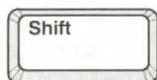
In the cockpit of the current target. You must have a target to select this view (see "Targeting and Firing" in this chapter).



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**External Target**

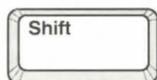
Behind your current target. You must have a target to select this view (see "Targeting and Firing" in this chapter).



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**Circling**

Circling external view of your airplane.



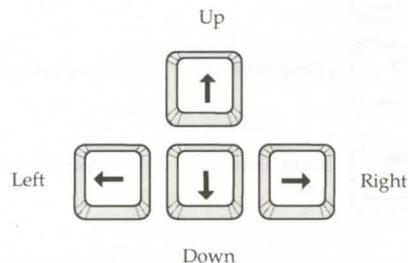
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**Missile**

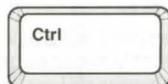
External view from behind your missile as it speeds through the air. You must have fired a missile to select this view (see "Firing Missiles" in this chapter).

SCAN KEYS

Use the Scan Keys to rotate your view. You can scan from any of the 18 views.



AT Keyboard Users: If you're controlling the flight stick with a joystick or mouse, use the cursor keys on the numeric keypad to scan. If your flight stick is controlled from the keyboard, press **Ctrl** with the cursor arrow keys to scan.



If you're using the keyboard to control the flight stick, press **Ctrl** with the cursor arrow keys to scan.



When you scan, use **F1** to return to forward view quickly.

SELECTING YOUR WEAPON

Except for the P-51 and F-86 (with their powerful complements of six .50 caliber machine guns), all of your aircraft have multiple weapons on board. The current weapon is fired when you press the fire button. Use the following keys to select the current weapon.



Select next weapon



Select previous weapon

TARGETING AND FIRING

You can use the joystick, mouse, or keyboard to target and fire.

JOYSTICK USERS

The joystick buttons control targeting and firing. Joysticks vary greatly — experiment to see which button on your joystick is button A and which is button B.

A button — Fire currently selected weapon.

B button — Select target to right of current target.



Target object closest to aiming crosshair

MOUSE USERS

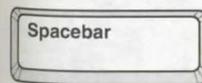
The mouse buttons control targeting and firing.

Left button — Fire currently selected weapon.

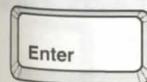
Right button — Select target to right of current.



Target object closest to aiming crosshair

KEYBOARD USERS

Fire Currently Selected Weapon



Target next object to right of current target



Target object closest to aiming crosshair

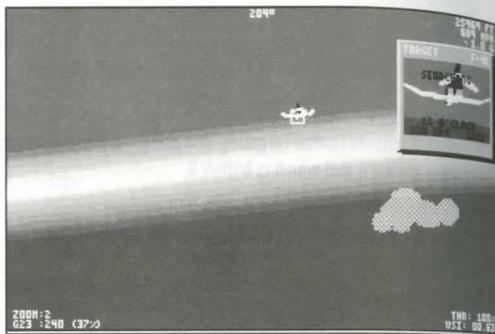
FIRING MISSILES

In Vietnam scenarios, you have air-to-air missiles at your disposal as well as guns. Unlike your guns, you must target an enemy aircraft and get a lock on it before you fire the missile.

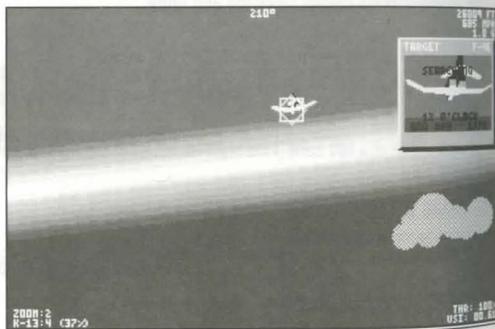
INFRARED-GUIDED MISSILES

Infrared-guided (or heat-seeking) missiles are sensitive to infrared radiation emitted by your target's jet engines (they're not sensitive enough to lock onto prop-driven engines). The F-4 Phantom is armed with four AIM-9 Sidewinder heat-seeking missiles. The MiG-21 carries the East's copies of the Sidewinder — four K-13 Atolls. The infrared missiles of the Vietnam era were not as sensitive as those used today. To get a proper target lock, Vietnam pilots had to be more or less staring down their opponent's tailpipe.

Get on the target's six so his engines are clearly visible. Select your infrared missile as your current weapon. A low buzzing noise tells you that the missile is active and ready.



When the diamond appears, your missile has a lock on the target (the buzzing noise becomes higher pitched). Watch your percentage chance to hit and keep in mind that Vietnam era missiles were highly inaccurate.



For missile tactics, see "Attacking with Missiles" in *Fighter Tactics*.

RADAR-GUIDED MISSILES

Radar-guided missiles use your on-board radar to home in on your opponent. The F-4 Phantom is armed with four AIM-7 Sparrow radar-guided missiles. The MiG-21 has no radar-guided missiles.

Once you've targeted your opponent, turn on your radar (press R). Select your radar-guided missiles as your current weapon. A high-pitched beeping noise tells you that the missile is active and ready.

When the diamond appears, your missile has a lock on the target (the beeping noise turns into a long "hum"). Watch your percentage chance to hit and keep in mind that Vietnam era missiles were highly inaccurate — especially the radar-guided Sparrow.

For missile tactics, see "Attack" in *Fighter Tactics*.

RADAR WARNING RECEIVER

The Radar Warning Receiver (RWR) is a passive detection device that senses any active radar in the vicinity of your airplane. An RWR blip could indicate friendly or enemy search radar, or it might be announcing an imminent radar-guided missile attack. All Vietnam era aircraft are equipped with these "fuzzbuster" units.

Your airplane appears in the center of the RWR screen. Enemy airplanes will blink depending on their current "state" or intentions:

Searching — Enemy planes that are searching for a target will typically flash their radar about once every two seconds. They appear on your RWR monitor as *slow-blinking dots*.

Tracking — Opponents that are tracking a target will leave their radar on. They're displayed as *solid dots* on the RWR screen.

Preparing — Enemies with a radar missile lock on your airplane are displayed as *fast-blinking dots*. When targeted by an enemy plane, your airplane's radar warning alarm is sounded (a low-pitched beeping sound). If the missile has been launched, the active missile alarm is sounded (a high-pitched beeping sound). Note: There is no audible warning for heat-seeking missile attacks.

RWR sensitivity radiates from your airplane in a sphere. Depending on the range of your opponents, you may want to increase or decrease the range of this sphere. If opponents are at long range, decrease RWR magnification. If opponents are in close proximity, increase magnification so you can get a better sense of their relative locations.



If blips are clustered around your aircraft, increase magnification.



Increase RWR magnification



Decrease RWR magnification

COUNTERMEASURES

Countermeasures are the procedures you take to avoid missiles fired at your aircraft. The countermeasure you take depends on the type of missile being launched.

A *chaff* cartridge releases a cloud of metal strips into the air. These strips momentarily act as a decoy for *radar-guided* missiles. A *flare* is a container of burning metal such as magnesium — flares serve as decoys for *heat-seeking* missiles.



Fire chaff (counters radar-guided missiles)



Fire flare (counters infrared-guided missiles)

DETECTING BY RADAR

The F-4 Phantom is equipped with search/track radar for air-to-air interception. The radar control switch is used for both locating enemy aircraft and providing radar reflection for the radar-guided AIM-7 Sparrow missile (see *Firing Missiles* in this chapter).

Since it only carries infrared-guided missiles, the MiG-21 requires only a simple search radar unit.



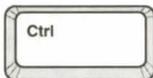
Radar on/off

The radar's search area is limited to a narrow cone emanating from the nose of your aircraft. You can only detect planes you are facing — you *cannot* detect airplanes behind you (use your RWR for that). Unlike your RWR systems, radar *can* detect infrared missiles.

When you turn on your radar, the radar monitor on the Instrument Panel is illuminated. The small white dot at the bottom of the readout indicates your aircraft. Other dots indicate aircraft or recently launched missiles in your path. Since Vietnam era radar did not possess IFF (Identify Friend or Foe), the only way to identify an aircraft on your radar screen is to draw close enough to make visual contact.

QUICKLY LOCATING FRIENDLIES AND ENEMIES

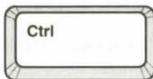
Two keys increase your Situational Awareness by giving you the clock coordinates of the nearest enemy or friendly plane. Some fighter pilots have reported irrationally *sensing* that another plane is in the vicinity — this is the equivalent of that intuitive knowledge.



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Direction of nearest enemy plane ("Bogey")



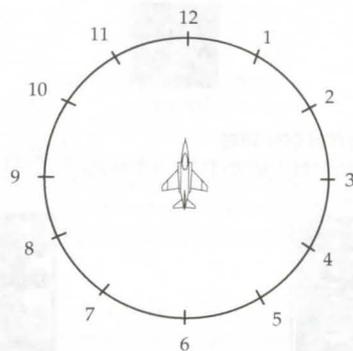
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Direction of nearest friendly plane ("Friendly")

If no bogeys are in the area when you press **Ctrl-Z**, a message — "Can't find any bogeys" — appears in the Warning/Communications line at the top of the HUD." Likewise, pressing **Ctrl-A** with no friendlies in the sky gets you a "Can't find any friendlies" message.

THE CLOCK



Ever since radio accompanied pilots into the air, the clock has been used to communicate the general direction of bogeys (unidentified aircraft) relative to the pilot. Imagine your aircraft as the fixed point in the center of a huge clock. The nose of your plane always points to 12. Enemy aircraft are identified as being located at positions on the face of the clock, with relative altitude indicated as low or high. For example, "Bogey at 3 o'clock" would indicate an aircraft to the right; "Bogey at 3 o'clock low" would indicate an aircraft below and to the right.

NAVIGATING

Navigating is only a concern when flying Historic Missions. Your mission's success depends on you accomplishing your mission objectives and returning home safely.

You navigate by flying to a designated *waypoint*, changing course, flying to the next waypoint, and so on. Use the waypoint indicator to set your heading toward the current waypoint.

P-51 AND FW-190 WAYPOINT INDICATORS

The two red dots below your compass are your waypoint indicator. A single red light indicates the direction you should turn to get back on course. Two red lights indicate that you're heading in the right direction.



Red dot here means 'turn right'



Two red dots means you're on course

F-86 WAYPOINT INDICATOR

The waypoint indicator is on the the compass. The light red needle is the direction you're currently headed. The dark red needle indicates the direction to the next waypoint. To get on course, turn until the light red needle covers the dark red needle, and then level out.



Turn right

F-4, MIG-21, MIG-15 AND F-86 NAVIGATION COMPUTERS

The gauge marked DIR or NAV indicates the direction to the next waypoint. When the needle is at 12 o'clock (straight up), you're headed in the right direction.



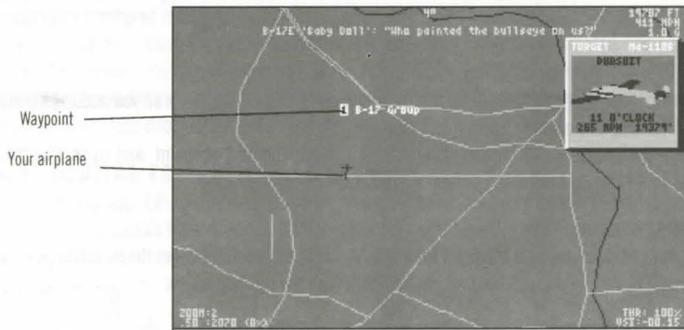
Turn right



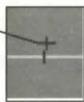
Waypoint is directly behind you

HEADING TO THE NEXT WAYPOINT

The waypoint indicator will not tell you when you've reached a waypoint. To find out the distance to the waypoint, press **F9** to bring up the Map.



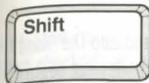
The short end of the cross indicates your heading.



At any time during the mission, you can instruct the waypoint indicator to indicate the direction to a different waypoint.



Direction of the next waypoint



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Direction of the previous waypoint

COMMUNICATIONS AND WARNINGS

Radio communications and warning messages appear at the top of the HUD. Communications can be anything from a simple exclamation ("They're taking the bait!") to an enemy location ("Fighters at 3 o'clock"). Messages warning you about dangerous flight conditions ("APPROACHING STALL") also appear at the top.

DAMAGE

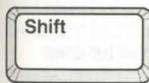
Press **D** to briefly display a status message at the top of your HUD telling you how much damage your aircraft has sustained as a percentage of the total damage it can withstand. For example, 50% damage means if you take as much damage as you've already absorbed your plane is destined to become part of the landscape.

EJECTING

If you let the enemy maul your airplane bad enough, you may be forced to hit the silk. It's always better to jump than to follow a lost airplane into the ground.

You can only eject safely at speeds of 500 mph or less — at higher speeds, you risk ripping your head from your shoulders. Your altitude in any jump should be a minimum of three hundred ft.

If you do jump, take advantage of the splendid view. Use the View keys to take a look around.



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Eject.

TIME COMPRESSION

In time compression mode, the game runs at twice or four times normal speed. If you're too far away from your targets, you can use time compression to reduce the time it takes you to get to them. It's also useful for flying back to home base after a successful mission.



Time compression

Press **T** to let the game run at 2x its normal speed. Press **T** again for 4x normal speed. To turn off time compression, press **T** a third time.

Stay awake while flying in time compression mode. Your opponents are twice as fast, too. If you detect enemies while flying in time compressed mode, *turn it off* before you attempt any maneuvers. It's easy to put yourself into an irrecoverable dive or spin if you maneuver in time compression mode.

BLACKOUTS AND REDOUTS

After a few seconds at positive high g loads, the vessels in your legs and lower extremities expand and the blood begins to drain into your lower body. Your heart loses its ability to pump blood to your brain, and the pilot begins to have problems. Peripheral vision is the first thing to go, followed by forward vision. If the turn is held too long, consciousness itself will fade away and the pilot will typically auger in.

A similar phenomenon occurs when you pull high negative g's, only in this situation the blood rushes to your head and you experience a redout.

To recover from a blackout or redout, ease up on the stick until your vision returns. You can avoid both blackouts and redouts by pressing **Ctrl-B**.

CHANGING THE HUD COLOR

You may want your HUD readout to be more or less noticeable. Press **Ctrl-R** to cycle through the different HUD colors available to you.

FLIGHT MENUS

The Flight Menus contain options that let you configure the game to your liking. Press **Esc** at any time during the mission to bring up the Flight Menus.



See the options in the previous menu



See the options in the next menu



Move the highlighted bar up



Move the highlighted bar down



Go to first option in menu



Go to last option in menu



Go to next group up separated by line



Go to next group separated by line

Air Combat automatically configures itself to your graphics adapter sound and control devices, but there are many options you can set yourself. When you quit the game, *Air Combat* saves your current configuration. The next time you start the game, your configuration will be the same as when you quit your last game.

Many of the Flight Menu options are features that can be turned on or off. For example, selecting Map Window from the Help Menu displays the Map Window. A check (✓) appears by any feature that's been activated.

Almost every option has a shortcut key that lets you select the option without opening the Flight Menu. For instance, pressing **Ctrl-I** while in flight makes you invincible without bothering to find the option in the menus.

? MENU

Film Playback Screen

Pressing **P** brings up the Flight Recorder. See *Flight Recorder* for details.

Auto-Save Film

When checked (✓), this option automatically saves the last several minutes of your last mission. With Auto-Save Film active, you don't need to worry about saving a recording before you end the mission. To see your last mission, select Review Film from the Main Menu. If you want to keep the flight recording, select SAVE and rename the film (see *Flight Recorder*).

End Mission

Pressing **Ctrl-Q** ends the mission. If you were flying an historic mission, the Mission Debriefing screen appears. If you were flying a custom mission, the Stats screen appears.

Exit to DOS

Pressing **Ctrl-C** quits *Air Combat* and returns you to DOS.

About Yeager

Brings up the official game credits and copyright date. Press any key to continue.

SYSTEM MENU

Pressing **Ctrl-S** brings you to the System Menu.

Sound

When checked (✓), you'll hear all of the sound effects checked below. This option must be active to hear Background, RWR, and/or Stall Sounds. If Sound is not checked, *no* sound effects are produced.

Engine Sounds

When checked (✓), you hear the sound of your engine. (In Target → Plane mode, you'll hear the sound of your *enemy's* engine). The Sound option (above) must be active to hear Engine Sounds.

RWR Sounds

When checked (✓), a warning sounds when an enemy has a radar lock on you (a low-pitched beeping sound) or when an inbound radar-guided missile has a target lock on you (a high-pitched beeping sound). The Sound option (above) must be active to hear RWR Sounds.

Stall Sounds

When checked (✓), you hear a warning for stalls. The Sound option (above) must be active to hear Stall Sounds.

Lock Sounds

When checked (✓), you hear a warning telling you when your missile is locked on the target. The Sound option (above) must be active to hear Lock Sounds.

Keyboard

When checked (✓), selects the keyboard as your flight stick and weapon control device.

Joystick

When checked (✓), selects the joystick as your flight stick and weapon control device. You can also select this option to calibrate your joystick. Follow the on-screen prompts.

Mouse

When checked (✓), selects the mouse as your flight stick and weapon control device.

Hi-Res Mouse

When checked (✓), if your mouse seems too sensitive, select Hi-Res Mouse as your control device. With Hi-Res Mouse active, you have to move the mouse farther to get the same effect.

1x Time

When checked (✓), the game runs in normal or "real" time. You can press T to switch from normal time to time compression mode.

2x Time

When checked (✓), game time is compressed so that everything runs at twice the normal speed. You can press T to switch from time compression mode to mega-time compression mode.

4x Time

When checked (✓), game time is compressed so that everything runs at four times the normal speed. You can press T to switch from mega-time compression mode to normal time.

VIEW MENU

You can switch views using the view commands or by selecting options from the View Menu. For view commands and descriptions of each of the views, see *View Keys* in this chapter.

GRAPHICS MENU**Low Detail**

When checked (✓), all objects are displayed with minimum detail to increase simulation speed.

Medium Detail

When checked (✓), all objects are displayed with medium detail.

High Detail

When checked (✓), all objects are displayed with maximum detail.

Simple Planes

When checked (✓), you never see the most complex shapes for planes regardless of the detail setting above. This is useful if your machine is slow but you want to keep your display speed fast during combat.

Dithered Horizon

When checked (✓), the horizon is dithered to give the illusion of distance. This feature is only available in VGA and MCGA 256-color modes. You can turn off the dithered horizon to increase simulation speed.

Clouds

When checked (✓), you may or may not see clouds at varying altitudes. You can turn off the cloud effects to increase simulation speed.

Bitmap Explosions

When checked (✓), you see bitmapped explosions when planes blow up. You can turn off the bitmapped effects to increase simulation speed. This feature is not available in CGA mode.

Flight Info

When checked (✓), the HUD (Heads Up Display) is displayed on your screen. Press **Ctrl-F** to activate or deactivate. For details on the HUD, see "Flight Instruments" in *Instrument Check*.

HELP MENU**Invincible**

When checked (✓), your airplane is invincible to enemy weapons. Press **Ctrl-I** to activate or deactivate. Note, however, that you can still crash and rip your wings off.

Unlimited Ammo

When checked (✓), you have unlimited ammo. Press **Ctrl-U** to activate or deactivate.

Easy Aiming

When checked (✓), you can be a little less accurate aiming because more of your misses will be counted as hits. This goes for missiles as well as bullets. Press **Ctrl-E** to activate or deactivate.

Note: If you're using a keyboard or mouse to control the airplane, this feature is not considered a help. Keyboard and mouse users can take the Ace's Challenge with Easy Aiming active (see "Ending the Historic Mission" under "Historic Campaigns" in *Mission Menus*.)

Easy Landings

When checked (✓), you cannot crash *no matter how hard you land!* Press **Ctrl-L** to activate or deactivate.

No Blackout

When checked (✓), you can pull any number of g's without experiencing blackouts or redouts. Press **Ctrl-B** to activate or deactivate.

Target Info

When checked (✓), target information is displayed below each target. Press **Ctrl-T** to activate or deactivate.

The color of the target info indicates your opponent's awareness of your location — red means he's located you, black means he hasn't.

The percentage indicates your *average* chance of hitting the target at this range with the currently selected weapon.



At this range, this F-86 pilot has about a 84% chance of hitting the MiG-15 with his .50 caliber guns.

Map Window

When checked (✓), the Map Window is displayed on your screen. Press **Shift-1** to activate or deactivate. The Map Window provides you with the location of all friendly and hostile aircraft in the area.

You can magnify the range of the Map Window by pressing period (.). At full magnification, fighters appear as a single pixel (one dot) and bombers as two (two dots). To decrease the range of the Map Window, press comma (,).

Map Identification Key

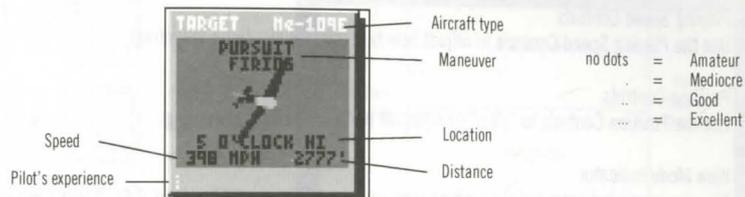
White	Your airplane
Dk. Red	Bogey below
Lt. Red	Bogey above
Dk. Blue	Friendly below
Lt. Blue	Friendly above
Yellow	Missile (with target lock)
Grey	Missile (no target lock)

Envelope Window

When checked (✓), the Envelope Window is displayed on your screen. Press **Shift-2** to activate or deactivate. For details on the Envelope Window, see *Ground School*.

Target Window

When checked (✓), the Target Window is displayed on your screen. The Target Window provides you with useful information about the currently selected target. Press **Shift-3** to activate or deactivate.



For hints on getting the most out of the Target Window, see "Detection" in *Fighter Tactics*.

Yeager Window

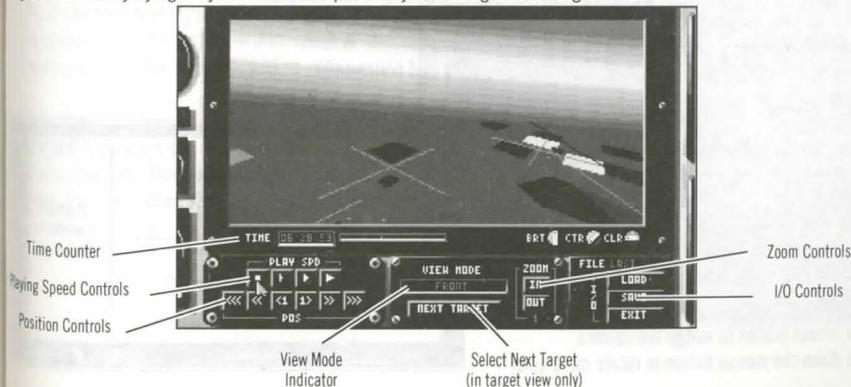
When checked (✓), the Yeager Window is displayed on your screen. Yeager watches your six, tells you how to correct dangerous flight performance problems, and gives you tips on flying and fighting. Press **Shift-4** to activate or deactivate.

FLIGHT RECORDER

The Flight Recorder lets you review and/or save your progress in a current mission as well as load any previously saved flight recordings. VCR style controls let you rewind, fast forward, or watch events frame by frame, while *Air Combat's* standard view keys let you watch your best dogfights from an infinite number of viewpoints. You can also use the unique Box View to see a large-scale overview of any mission.

PLAYING BACK YOUR CURRENT MISSION

To review the last several minutes of the mission you're currently flying, press **P** (or press **Esc** to bring up the Flight Menu, and then select Film Playback Screen from the ? Menu). When you press **P**, you can only play back the mission you're currently flying — you cannot load previously saved flight recordings.



Time Counter

Shows current position in the flight recording.

Playing Speed Controls

Use the Playing Speed Controls to adjust how fast you play the flight recording.

Position Controls

Use the Position Controls to "skip" to different parts of the flight recording.

View Mode Indicator

The view mode indicator tells you which view you're currently watching from. See "View Commands" in *In the Cockpit* for more on views.

Next Target

You must be in a target view to use the Next Target option:

F7	Plane → Target
F8	Target → Plane
Shift-F7	Target's Cockpit
Shift-F8	External Target

When you're in a target view, select Next Target to cycle through the targets in the mission, regardless of whether they are currently within sight of your airplane. You can also press **F7**, **Shift-F7**, **F8**, or **Shift-F8** repeatedly to cycle through the targets.

Zoom Controls

Use the Zoom Controls to zoom in and out on the action. From the default zoom setting of 1, you can zoom in to 2, 4, 8, 16, or 32.

I/O Controls

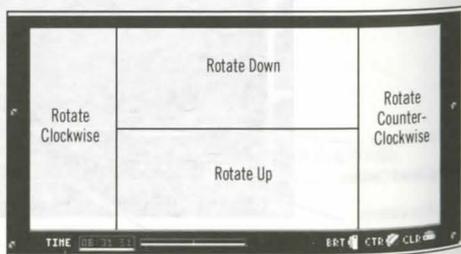
Use the I/O Controls to save a flight, load a previously saved flight recording, or exit the Flight Recorder. See *Saving a Flight Recording* and *Reviewing a Previously Saved Flight Recording* in this chapter.

ROTATING THE CAMERA

In any view, you can rotate the camera angle 360° vertically and horizontally.

Mouse Users

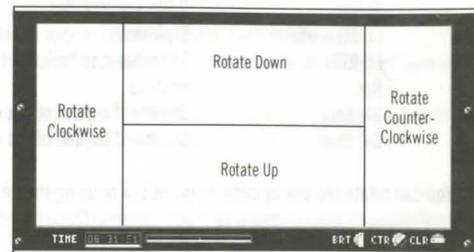
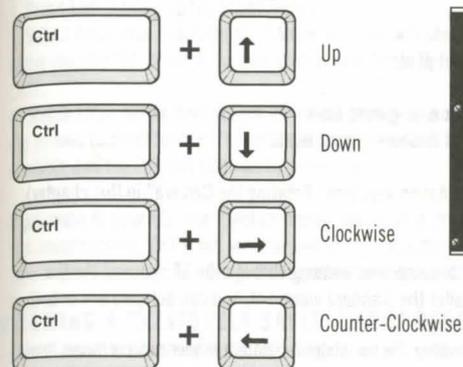
To rotate the camera, move the mouse cursor to one of the defined quadrants.



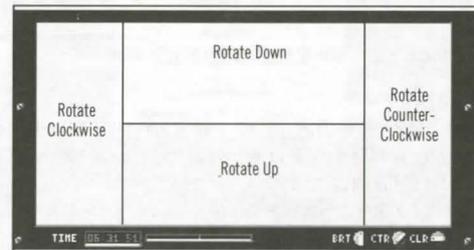
Click a mouse button to nudge the camera, or hold down the mouse button to rotate more quickly.

Keyboard Users

Press **Ctrl** with the cursor arrow keys to rotate the camera.



Alternatively, press **Tab** repeatedly until the cursor lands on a rotation hotspot, and then press the **spacebar** to rotate your view.

**SWITCHING VIEWS**

All of the View keys function in the Flight Recorder except the Map View (**F9**), which is replaced by the Box View.

Box View

The Box View gives you a large-scale, 3D view of the recording. Press **F9** to switch to the Box View. Press any other View key to switch back to normal viewing.



Identification Key for Box View

White	Your airplane
Yellow	Bullets or missiles
Lt. Magenta	Explosions
Lt. Blue	Friendlies and bailed out pilots
Red	Hostiles
Dk. Grey	Shadow if bottom of box is at ground level
Dk. Blue	Shadow if bottom of box is above ground level

You can rotate the box by clicking in the box or using the rotation keys (see "Rotating the Camera" in this chapter).

Viewpoints in the Box

The standard viewpoint in Box View is from a fixed point, the airplanes weaving through the 3D space of the box. However, there are two options that allow you to slightly alter the standard viewpoint. You can activate one or both of these options:

Heading — Press **H** to have your view follow your fighter's heading. The box rotates horizontally as your airplane travels through the air. Imagine a camera following your airplane.

Position — Press **P** to keep your airplane in the center of the box.

Zoom Keys

Use the zoom keys (+, -) to increase or decrease magnification of your view.

SAVING A FLIGHT RECORDING

While you're flying, *Air Combat* temporarily records the last several minutes of the mission. The length of this recording varies depending on your computer and the number of aircraft in the mission, but on the average *Air Combat* will record the last four to six minutes of the mission. If you're flying a long mission, you may want to save segments of it so you don't lose them. For example, if you've flown for four minutes and you're still not done with the mission, you should save a segment; after eight minutes you should save again; etc.

SAVING A FLIGHT RECORDING WHILE FLYING

To save a flight that's in progress, press **P** to bring up the Flight Recorder. Select **SAVE** from the I/O Controls. You'll be asked to name the recording.

Type a name for the flight recording (up to 8 characters) and press **Enter**. The flight recording is saved in the game directory as a file with the extension ".F". For example, if you named the file "AWESOME," it would appear in the game directory as "AWESOME.F". When you're ready to continue the mission, press **Esc** or select **EXIT** from the I/O Controls. You can save as many segments of the mission as you like, but you can only watch the last several minutes played. To review earlier segments that you've saved, select **Review Film** from the Main Menu (see *Reviewing a Previously Saved Flight Recording* below).

THE AUTO-SAVE FILM FEATURE

When active, the Auto-Save Film feature automatically saves the last several minutes of your mission as a flight recording. With Auto-Save Film active, you don't need to worry about saving a recording before you end the mission.

To activate Auto-Save Film:

1. Begin any mission.
2. Press **Esc** to bring up the Flight menus.
3. Select **Auto-Save Film** from the ? Menu. A check (✓) should appear beside the Auto-Save option.

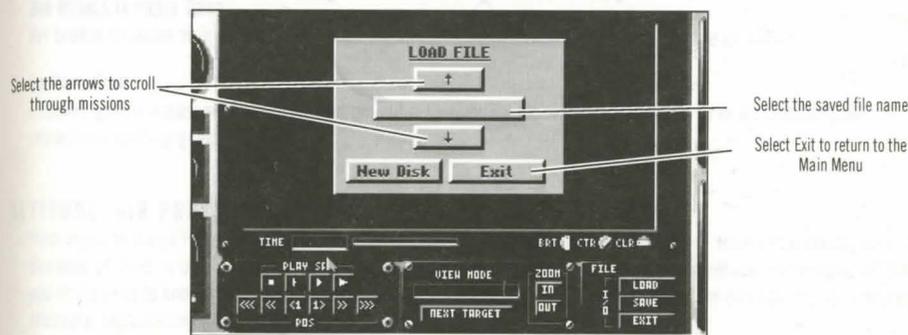
When you end the mission, the last several minutes of the mission are temporarily saved as a flight recording named **LAST**.

To watch **LAST**, select **Review Film** before you engage in any other missions. When the **LOAD FILE** box appears, select the arrows to scroll through the missions you've recorded. When **LAST** appears, select it. Use the **Playing Speed Controls** and the **Position Controls** to review the film.

If you want to save the new flight recording, select **SAVE** from the I/O Controls. You'll be asked to name the recording. You *must* rename **LAST** if you want to keep it — if you don't, **LAST** will be overwritten the next time you fly a mission. Type a new name for **LAST** (up to 8 characters) and press **Enter**.

REVIEWING A PREVIOUSLY SAVED FLIGHT RECORDING

To load a previously saved flight recording, select **Review Film** from the Main Menu.



When the **LOAD FILE** box appears, select the arrows to scroll through the missions you've recorded. When the name of the file you want to watch appears, select it. Use the **Playing Speed Controls** and the **Position Controls** to review the film.

DELETING FLIGHT RECORDINGS

Each flight recording is saved as a separate file in the game directory — any file with a ".F" extension is a flight recording. You can only delete flight recordings by exiting to DOS. Refer to your DOS manual for information on deleting files.

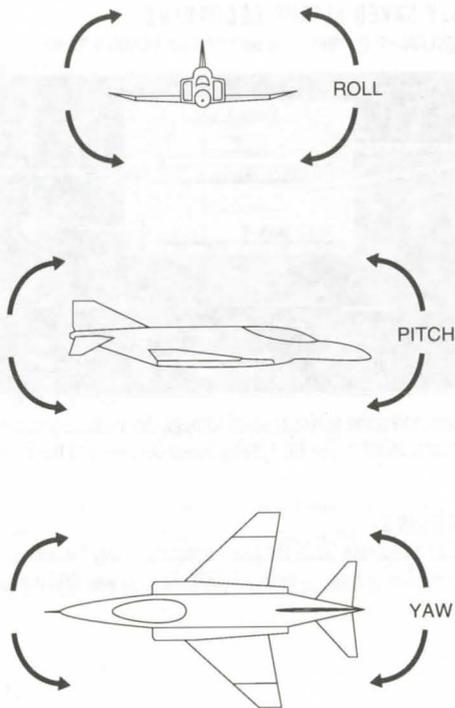
GROUND SCHOOL

Air Combat models the real flight envelopes of eighteen different aircraft. Each aircraft performs differently according to its airspeed, altitude, and structural limits. These factors affect everything from maneuverability — how quickly an airplane can turn — to minimum and maximum speeds.

The basic aerodynamics explained here have very real applications in *Air Combat*. Knowing — not guessing — how your airplane performs can mean the difference between painting a flag on your fuselage or drilling a 50 ft. hole in Mother Earth.

AIRPLANE MOVEMENT

The pilot controls the airplane by moving a flight stick and pedals in the cockpit. These in turn move *control surfaces* on the wings and tail, causing the airplane to change direction. An airplane can rotate in three dimensions while in flight: it can roll, pitch, or yaw.



PARTS OF AN AIRPLANE

AILERONS CONTROL ROLL

To turn an airplane, you must bank the wings by moving the flight stick left or right. For example, moving the flight stick to the right raises the right aileron and lowers the left, which in turn rolls the airplane to the right.

ELEVATORS CONTROL PITCH

Pulling back on the flight stick raises the elevators, causing the airplane to pitch up (climb). Pushing forward on the flight stick lowers the elevators, making the airplane pitch down (dive).

RUDDER CONTROLS YAW

The rudder works in conjunction with the ailerons to coordinate turns.

FLAPS INCREASE LIFT AND DRAG

Flaps increase wing surface and curvature, thus increasing both lift and drag. They're useful for landing, since they lower your stall speed.

AIR BRAKES INCREASE DRAG

Air brakes increase drag, thus slowing down the airplane. Prop-driven airplanes don't have air brakes.

LANDING GEAR

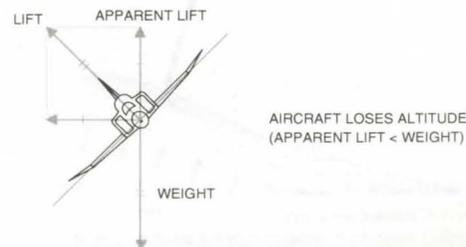
Landing gear is necessary for landing and ground maneuvering. All of the airplanes you fly in *Air Combat* have retractable landing gear.

ALTITUDE, AIR PRESSURE, OXYGEN

Your airplane doesn't move through a vacuum but rather through a varied environment — the earth's atmosphere. The dynamic of flight is nothing more than an interaction between the atmosphere and your airplane. Fortunately, all that you really need to know for a basic understanding of aerodynamics is this — the higher the altitude, the lower the *air pressure, temperature, and oxygen content*.

FOUR FORCES

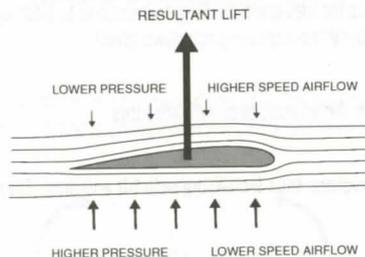
Four basic forces influence the airplane in flight: lift, weight, thrust, and drag. These are actually forces and *counter-forces*. Lift pushes the airplane up while weight pulls it toward the earth. Similarly, thrust pushes the airplane forward while drag slows it down.



When an airplane is flying *level* (neither climbing or diving), lift and weight are exactly opposed or *balanced*. In the same way, a *constant speed* means that thrust equals drag.

LIFT VS. WEIGHT

As the jet engines or propellers move the airplane, air rushes over the wings. Since the wing is unevenly shaped — flat on the bottom, arched on the top — the air does not move at a constant speed over both surfaces. The air moves faster over the arch.



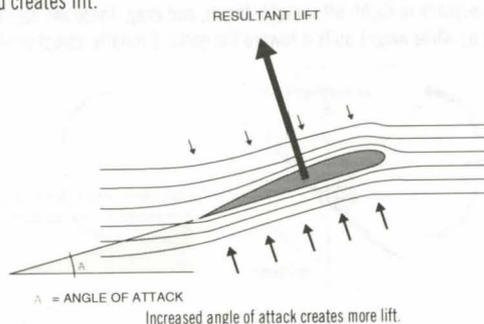
The air traveling over the top of the wing must go a greater distance to get to the trailing edge. It must go *faster* in order to get there.

In fluid dynamics, the law is: The faster a gas or liquid moves, the less pressure it exerts. Since the air, as we know, is moving faster over the arched top, there's less pressure there than on the underside of the wing. This inequality between pressure states is what creates *lift*.

Like any heavier-than-air object, an airplane's natural inclination is to fall to the earth. The force of gravity pulling on the object is what's known as the airplane's *weight*.

ANGLE OF ATTACK

The *angle of attack* is the angle at which the wing meets the airflow. An increased angle of attack creates more pressure and therefore more lift. This is how you climb — pulling back on the stick pulls up the nose, which increases the angle of attack and creates lift.



Everything has a cost. As you increase your angle of attack, the increased lift and large surface area meeting the airflow create more drag. This has the effect of slowing down the airplane.

THRUST VS. DRAG

Both a spinning propeller and a jet engine spitting superheated gases create *thrust*. In order for the airplane to move forward, its thrust must be greater than the *drag* created by air molecules striking the airplane's surface.

MAXIMUM SPEED

As the airplane climbs to higher, oxygen-poor altitudes, thrust decreases. At the same time, however, drag is reduced in the thinning atmosphere. Thus each airplane has an altitude at which the best thrust/drag ratio is achieved — typically at low altitudes for prop airplanes and high altitudes for jet fighters.

MINIMUM SPEED AND WING LOADING

As stated earlier, air pressure progressively decreases the higher you fly. To overcome the loss of air pressure, an airplane must go faster to maintain flight (to get the same amount of air flowing over the wings as at lower speeds at lower altitudes).

Minimum speed is a function of the shape of the wing and *wing loading*. Wing loading is the amount of weight the wing surfaces must carry. The more weight the wing carries, the faster the airplane must travel to produce enough lift for level flight. High wing loading is better if you want to go faster; low wing loading is better if you want to turn harder. Additionally, airplanes with long, thin wings tend to perform better at high altitudes than airplanes with short, stubby wings.

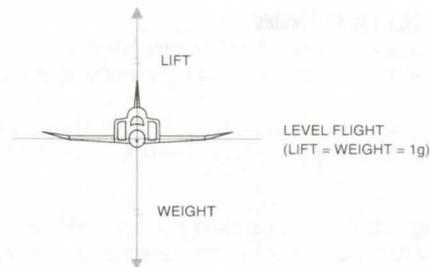
THREE MEASURES OF TURN

G FORCE

A "g" is a unit that measures acceleration. This is often used as a measure of centrifugal force. One g is equal to the force of gravity exerted on a stationary object on earth — the force a person standing on the ground experiences.

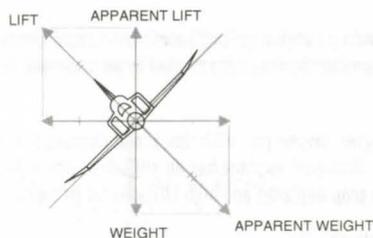
WHY YOU PULL UP THE NOSE IN A TURN

To remain in level flight, the lift vector (arrow) must equal the weight vector.



When an airplane rolls over to turn, lift is diminished. Why? The lift created by the wings remains perpendicular to the wingplane. Remember, it's the wingplane that creates the lift. At the same time, however, the weight of the airplane remains pointed to the ground — after all, it's the earth that's pulling the aircraft down. Only the vertical component

of the lift compensates for the weight of the airplane — the horizontal component makes the airplane turn. As the airplane banks, the lift vector tilts, decreasing its vertical component and increasing its horizontal component while the total (resultant) lift remains the same.



To generate more lift to overcome the airplane's weight, the pilot pulls back on the flight stick — a process called "trimming" — thereby increasing the angle of attack and creating more lift to increase the vertical component enough to counteract the airplane's weight. At the same time, more lift creates more drag, slowing down the airplane. This is why maneuvering in combat is an energy-depleting activity.

THE EFFECTS OF G IN THE COCKPIT

Every vector has a *counter-vector*. When lift is increased in a turn, its counter-vector is the *apparent weight* of the airplane — the pilot in the airplane feels heavier, what is called *apparent weight* or *g-load*. This is the same force at work when you're pinned to your seat in the tight turn of a roller-coaster.

The more the airplane banks, the greater the g load experienced by the airplane.

TURN RADIUS — HOW WIDE YOUR TURN IS

Simply put, *turn radius* is how big of a circle you make in the sky. The size of the circle depends on how fast you're flying and how tightly you're turning. A jet can turn more tightly than a prop airplane but still make a wider circle by virtue of its higher speed.

RATE OF TURN — HOW QUICKLY YOU'RE TURNING

Rate of turn tells you how quickly you're turning. To put it simply, rate of turn is how fast you can haul your nose (and weapons) around to put the enemy in your gun sights. The higher your speed at a given altitude, the lower your maximum rate of turn.

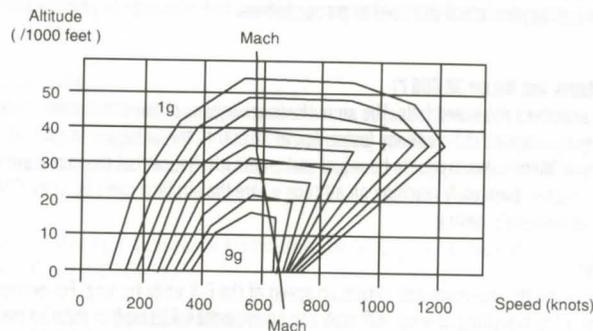
The importance of your rate of turn in air combat can't be understated. You need a good rate of turn for both offensive and defensive purposes — to turn sharply enough to get the enemy into your sights, or to stay ahead of *his*.

MAXIMUM RATE OF TURN

If you're breaking with an opponent and he remains ahead of your gun sights, you must somehow turn more tightly so you can shoot him down. In a turning contest such as this, your rate of turn compared to your opponent's becomes crucial. Does your airplane turn faster than his? Rather than finding out by waiting for his bullets to tear up your airplane, you can compare flight envelopes.

THE FLIGHT ENVELOPE

A flight envelope is a graph that shows the interaction of an airplane with its environment and the limits of its performance. Below is the flight envelope for the F-4 Phantom.



On the vertical axis of the graph is the airplane's altitude; on the horizontal axis is the airplane's speed. Plotted on the graph are curved lines. The outside line contains the airplane's performance at 1 g (level flight). Within that boundary are curves which contain the airplane's performance at higher g's (banking or climbing).

Lift limit — The limit beyond which the airplane stalls due to a lack of lift.

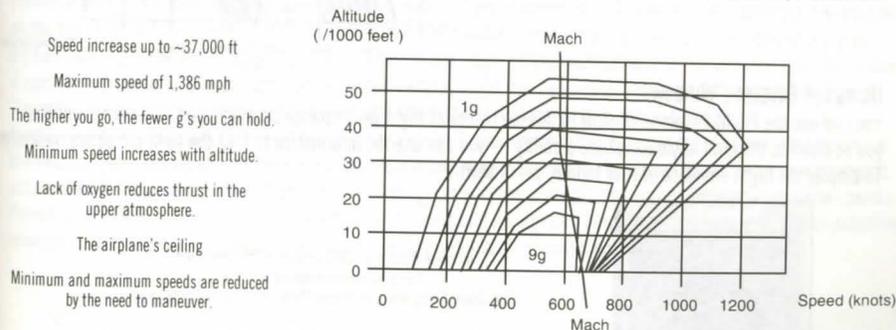
Thrust limit — The limit beyond which the engines can't generate enough thrust to accelerate.

Structural limit — The limit beyond which the airframe can't withstand the air resisting it. Continuing beyond this limit will weaken the airframe and eventually rip your wings off.

What follows are some examples of how to read flight envelopes.

THE F-4'S MINIMUM SPEED

The flight envelope contains all the information on an airplane's performance. The left edge of the 1 g envelope shows that the airplane's minimum speed increases with altitude. The higher you go, the faster the F-4 needs to go in order to generate lift. This is related to the steadily decreasing air pressure of the atmosphere — the less air, the less lift.



THE F-4'S MAXIMUM SPEED

The right edge of the envelope shows the F-4's top speed of 1,386 mph. Notice that this speed only occurs around 38,000 ft. This is the altitude at which the engines produce the maximum thrust against the minimum drag. This number has an obvious application: if you need to get somewhere fast, climb to the altitude where your maximum speed is greatest.

SPEED DIMINISHES ABOVE AND BELOW 38,000 FT

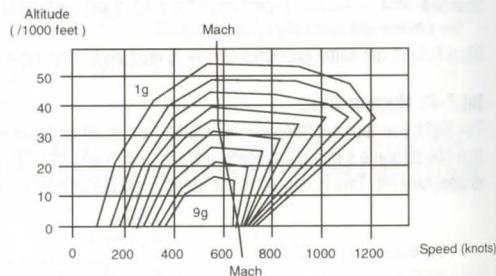
Below 38,000, the airplane's top speed falls. The air in the lower regions of the atmosphere is too thick for the airframe — it would actually disintegrate if it went any faster. Above 38,000 ft, thrust begins to give out. As the air thins out in the upper atmosphere, there's less oxygen to burn fuel and create lift. Notice that the maximum speed decreases as the airplane climbs higher, eventually reaching an altitude where the airplane can't fly at all. This absolute height limit is known as the airplane's *ceiling*.

THE INNER ENVELOPES

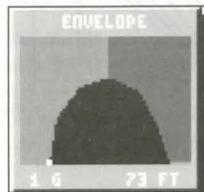
The inner envelopes show the minimum and maximum speed of the F-4 while turning. For example, an F-4 at 10,000 feet in a 9 g turn must be travelling at least 500 mph and no more than 710 mph in order to maintain the 9 g's. Notice, too, that it's not even *capable* of doing a 9 g turn at altitudes greater than 16,000 ft!

As stated before, you want the best rate of turn possible if you're trying to out-turn and outmaneuver your opponent. Your best rate of turn is achieved by pulling as many g's as you can at your current altitude, but at the lowest speed necessary for that number of g's. For example, if you're flying the F-4 at sea level, your maximum rate of turn will be the lowest speed in the 9 g envelope.

Achieving the maximum rate of turn for an F-4 Phantom at sea level is accomplished by pulling a 9 g turn at the lowest speed possible: 425 mph.

**USING THE ENVELOPE WINDOW**

You can use the Flight Envelope Window to foresee potential flight performance problems and — in the event that you've flown to the limit of your airplane's ability — you can use the information to take the right corrective measures. To display the flight envelope of your fighter, press **Shift-2**.



Increase throttle to 100% and point the nose down
Decrease speed or reduce altitude
Slow down! Flaps down, air brakes if possible, even landing gear!

FLIGHT PERFORMANCE RECOVERY**HOW NOT TO EXCEED MAXIMUM SPEED**

The airplane's maximum speed is also limited by the strength of its airframe. A sustained dive at 100% throttle can very well rip your wings off. If you know that you're exceeding maximum speed, cut the throttle, put down flaps and air brakes, and pull back on the stick.

STALLS AND HOW TO RECOVER

If the angle of attack is increased too much, the low pressure area degenerates quickly and a stall occurs. The airplane will lurch suddenly into a dive. You recover from a stall by increasing speed and repositioning the wings such that a smooth airflow over them is regained. When the stall warning appears, set the throttle at 100% and push the flight stick forward.

It's important that you act quickly. A stall at low altitudes can be fatal, because you won't have the room to put your nose down. Take the stall warning seriously!

USE FLAPS TO POSTPONE A STALL — DANGEROUS MANEUVER

If you're about to enter a stall but you need to postpone it a few seconds (say you're trying to keep your nose up long enough to finish someone off), dropping your flaps will buy you a little extra time. When your flaps are down, your stall speed decreases due to extra wing surface. However, this is a two-edged sword. Your speed bleeds off *much* faster with flaps down — when you finally stall, your extreme low speed will put you in even deeper trouble if you haven't finished off your opponent.

USING A STALL TO DIVE — DANGEROUS MANEUVER

If you're near stall speed, your nose is pointed up, and you need to dive quickly, entering a stall will give you an additional downward turning motion over what you could do with the stick alone.

THE ENERGY STATE

In air combat studies, an airplane's potential to perform at any given moment is often measured as its *energy state*, which is a function of its *potential* and *kinetic* energy.

Potential energy is a function of an object's position within a gravitational field. To use a classic example, the boulder at the top of the hill has greater potential energy than the boulder at the bottom. Likewise, an airplane at a higher altitude has a greater potential energy reserve than the one flying 10,000 feet below it. If the airplane goes into a dive, it converts its potential energy (altitude) into kinetic energy (velocity). The airplane didn't get this energy for free. It "bought" this energy by climbing to the higher altitude in the first place (that is, burning fuel).

Kinetic energy is a function of from an object's momentum. If two airplanes are flying at equal speeds, the heavier of the two has more kinetic energy (because it has more momentum). The heavier airplane "bought" this energy when it accelerated to the speed of the lighter airplane. (The lighter airplane invested less energy getting to the same speed.) Potential and kinetic energy can be exchanged, by climbing and diving. Climbing converts kinetic energy into potential energy (as you gain altitude you lose velocity), while diving converts potential energy into kinetic energy.

FLIGHT SCHOOL

You begin training with a few simple maneuvers that every pilot must know. Take Off and Landing are necessary for getting on and off the ground, while Level Flight, Climb, Dive, and Break are the fundamentals of almost every other combat maneuver you will learn.

LEVEL FLIGHT

Level Flight is flying with your wings parallel to the ground, neither gaining nor losing altitude.

Generally speaking, when the waterline marker on your HUD is even with the horizon, you're in Level Flight. However, when landing, the waterline can be above the horizon while you're still maintaining your present altitude — this is due to the increased angle of attack as you approach the runway.

CLIMB

A climb is a sacrifice of speed for altitude.

CLIMBING

1. Increase power to 100% and pull back on the flight stick. Watch your vertical speed indicator (VSI). Prop-driven airplanes can climb steadily at about 2000 ft/min, jets much faster. Keep an eye on your airspeed — if you're close to stalling, don't climb so fast. A good rule of thumb is to maintain 180-200 mph during the climb.
2. When you reach the desired altitude, push the flight stick forward to level out, and then return the flight stick to center.

DIVE

A dive is a sacrifice of altitude for speed.

DIVING

1. Push forward on the flight stick to initiate the dive, and then return the flight stick to center. The length of time you hold the flight stick forward determines how steeply you dive. If the dive is very steep, you may have to cut power and/or drop flaps or air brakes in order to avoid going too fast.
2. As you reach the desired altitude, pull back on the flight stick to level out. Return the flight stick to center.

EMERGENCY PROCEDURES (POWER DIVE)

Exceeding maximum speed in a dive — known as a power dive — can rip your wings off if you don't pull out of it. If you find yourself in this unlucky situation, cut the throttle (if it's not already) and pull back on the flight stick. If you're still accelerating too quickly, try applying air brakes (if you're in a jet), lowering flaps, or — as a last ditch maneuver — lowering your landing gear to create drag.

BREAK

A Break is a hard defensive turn to the left or the right. It's immediate purpose is survival — to get you out of your attacker's gun sights. It's secondary purpose is to make a closely pursuing attacker overshoot, thus putting you in his six o'clock.

BREAKING

1. Increase power to 100% and move the flight stick right or left. You want to turn such that you roll the airplane across the attacker's path.
2. When your wings are at a 90° angle to the ground, center the flight stick and pull back hard. Whenever you go into a steep turn, you lose vertical lift. If you want to maintain your altitude, move the flight stick in the opposite direction.
3. Continue the turn until your opponent overshoots, or try a different maneuver.

ALWAYS ROLL ACROSS THE ATTACKER'S PATH

With an enemy on your tail, the instinctive response is to move away from his path. This is exactly what you shouldn't do. The correct response is to roll across the attacker's path. You will pass in front of your opponent's guns, but only for a short time — your deflection angle will be so high that it's unlikely that he'll hit you. Breaking across your opponent's path quickly creates "angle-off" (see Attack for a description of angle-off).

COUNTERING THE DEFENDER'S BREAK

When your target breaks, it's best to break with the target and stay on his tail.

If your rate of turn is equal to or better than your target's, it's relatively easy to keep him in sight. However, if his rate of turn is better, you can maneuver with a High or Low Yo-Yo (Banked Versions), Barrel Roll Attack, or Scissors (see *Basic Maneuvers*). This reduces your forward velocity and keeps you from overshooting your opponent.

The danger in performing any of these maneuvers is that your opponent slips out of your sight for a moment — and a moment is all it takes for him to give you the slip. Another tactic is to reduce your speed just enough to pull behind him — either by dropping flaps or using your air brakes. Note, however, that you only want to reduce speed when you're:

- At or near your own maximum speed
- In a high thrust/weight plane like the F-4 or MiG-21, in which it's easier to get your speed back.
- Real sure of yourself and your situation.

TAKE OFF

To take off, your airplane must accelerate from a standstill to an airspeed that generates enough lift to overcome gravity.

Taking Off

1. Increase power to 100%. Your airplane begins to accelerate down the runway. *Air Combat's* prop-driven airplanes are all equipped with tail wheels — the nose will drop as the airplane picks up speed

The airplane must reach take off speed before you can pull it up. Take off speeds are:

Prop-driven airplanes	95-100 mph
Korean era jets	135-145 mph
Vietnam era jets	140-150 mph

- When you reach take off speed, pull the flight stick back until your vertical speed is about 1500 ft/min. Return the flight stick to center.
Your vertical speed is displayed in the lower right corner of the HUD or on the vertical speed indicator on the Instrument Panel.
- Press **G** to retract your landing gear.
- Wait for your speed to pick up before you increase your VSI.

Warning! Don't pull the nose into too sharp of a climb or your airplane will stall! At low altitudes, where you don't have hundreds of feet to recover, a stall is lethal.

LANDING

When landing, your airplane must be traveling close to its minimum speed while still maintaining enough lift (avoiding a stall). On short military runways, you'll need to use flaps to come in at a steep angle of descent.

LANDING

- Line up with the runway. Optimally, you want to be about 1000 feet up and five miles out.
 - Press **F** to lower flaps and **G** to lower your landing gear.
 - Aim the waterline marker on the spot on the runway where you want to touch down.
 - Reduce the throttle until you are at your normal stall speed.
With your flaps down, you won't stall at normal stall speed. If you need a visual guide, use the Envelope Window. When the airplane borders on the lift limit, you're at the right speed.
 - If you're still going too fast, use air brakes to reduce speed (Korean and Vietnam era airplanes only).
As you cross the end of the runway, you should be about 100 ft up.
- Note:** When you've lowered your gear and your flaps and reduced your air speed enough to land, the symbol "xxx" appears next to your vertical speed indicator, at which time it is safe to touch down.
- Cut the throttle and pull back gently on the flight stick.
The object is to stall just as you touch down. Watch your VSI and make sure you're still descending (your vertical speed should remain a negative number).
 - As soon as you touch down, apply your wheel brakes.

BASIC MANEUVERS

Every fighter pilot must learn and practice the basic maneuvers and their counters. They do not insure the pilot that he will become a top-scorer — that takes something more — but without them, he'll be a sitting duck.

JINK

"Jinking" is randomly banking and bobbing. It's a purely defensive maneuver designed to upset your opponent's aim while you look for an opportunity to steer into a more advantageous position.

Jinking is effective only against opponents who are within close range. If your opponent is at long range, your jinking will only produce slight movements out of his gun sights — movements that he will find easy to compensate for.

PURSUIT

When an opponent is in "Pursuit," he's turning in order to get onto your tail. When you see Pursuit up in the target window, it indicates more of an intention than a particular set of maneuvers.

SCISSORS

Scissors are a series of banks along an axis that reduce downrange travel without cutting engine power. The name comes from the criss-crossing motion of both planes — the pursued pilot banks to get his attacker to overshoot him, which calls for a similar reaction on the part of the attacking pilot, which causes the defender to bank the opposite direction, and so on. Both pilots weave back and forth as they jockey for the advantageous 6 o'clock position, creating a scissor pattern. The more maneuverable airplane has the advantage in this situation, though the pilot's speed and agility are important factors as well.

VERTICAL SCISSORS

This is the same as the Scissors but is performed in the vertical plane — either a climb or a dive.

LOOP

The Loop has remained a standard evasive maneuver since it was first implemented in World War I dogfights over Europe. It's extremely effective when the attacker is close behind you, but it should be used with caution at longer ranges because of the time it allows opponents to fire on you.

PERFORMING A LOOP

- Increase power to 100% and pull back on the flight stick.
When the inverted horizon comes into view, check your six o'clock (F2 and scan up). You'd better know where he went.
- When the upright horizon comes into view, return the flight stick to the center position.

COUNTERING THE DEFENDER'S LOOP

Follow your opponent into the loop, taking any shots at him that you can. You may want to turn your loop into an Immelmann so you maintain an altitude advantage over your opponent. Make sure you keep a close eye on where he's going.

SPLIT S

Consisting of a half roll and a descent into the second half of a loop, the Split S lets you change heading while simultaneously gaining speed.

PERFORMING A SPLIT S

- Roll the airplane into the inverted position.
- Once you're in inverted flight, pull back on the flight stick.
Watch your speed. You don't want to get above your corner velocity. If you need to slow down in your dive, use flaps (press **F**) or air brakes (press **B**). If you're still going too fast, drop your landing gear (press **G**) and/or cut throttle.
- When the upright horizon comes into view, return the flight stick to the center position.
If you've lost track of your opponent, use the view keys to spot him.

COUNTERING THE DEFENDER'S SPLIT S

You still hold the altitude advantage when your opponent goes into a Split S. You can dive after your opponent, wait in the skies above for a more advantageous dive attack, or disengage.

IMMELMANN

The Immelmann consists of a half loop or vertical climb followed by a half roll. The Immelmann gives you the double advantage of changing heading while simultaneously gaining altitude. The Immelmann can allow you to make abrupt changes to heading.

PERFORMING THE IMMELMANN

1. Increase power to 100% and pull back on the flight stick as if you were performing a loop.
2. When the inverted horizon comes into view, return the flight stick to its center position.
If you've lost track of your opponent, use the view keys to spot him.
3. Pull the flight stick left or right and half roll the airplane to level flight.

COUNTERING THE ATTACKER'S IMMELMANN

An attacker might pull an Immelmann because he's about to overshoot you or because he holds a speed advantage against your superior maneuverability. If he's about to overshoot you and you have the speed, counter him with an Immelmann of your own. If you don't have the speed to chase him, wait to see which direction he goes when he pulls out of the Immelmann. Dive the opposite direction if you want to disengage. If you want to press the attack, initiate a shallow climb (such that you keep gaining speed) and try to follow his course. The last thing you want to do is leave him with a short route between his nose and your tail.

COUNTERING THE DEFENDER'S IMMELMANN

If you have speed, follow your target. There's no use giving him altitude over you. If you don't have the speed to follow him, see *Countering the Attacker's Immelmann* above.

LOW YO-YO

The Low Yo-Yo is a shallow dive followed by a sharp climb. Its purpose is to let you pick up speed when you're otherwise unable to close in on a fleeing target. The attacker has the double advantage of making his attack in the target's blind spot.

COUNTERING THE ATTACKER'S LOW YO-YO

If your pursuer is out of range and you suddenly see him drop below you, you can be sure he's attacking with a Low Yo-Yo. Since it's assumed that the attacker couldn't close on you, you have the speed advantage — initiate a climb. This will put distance between you and the attacker. If you feel gutsy, a loop or a High Yo-Yo (Banked Variation) could put you on your attacker's tail.

HIGH YO-YO

The High Yo-Yo is a steep climb followed by a dive. The climb lets you bleed off power and avoid overshooting your target.

BARREL ROLL

This defensive maneuver throws your airplane into a horizontal corkscrew spin. It's primary purpose is to upset your opponent's aim, but pulling out of the maneuver at an unexpected point could very well shake an enemy off your tail.

PERFORMING THE BARREL ROLL

1. Increase power to 100%. Pull the flight stick back slightly, and then move the flight stick right or left to roll the airplane.
2. Complete as many revolutions as you need.

COUNTERING A DEFENDER'S BARREL ROLL

Following the opponent into the Barrel Roll works. As an alternative, use a straight High Yo-Yo to climb above and come down on your spiraling opponent.

VARIATIONS FOR ADVANCED PILOTS**LOW SPEED YO-YO (BANKED VARIATION)**

The banked variation of the Low Yo-Yo is an offensive maneuver designed to reduce the angle-off between the attacker and his target. While breaking, the attacker goes into a shallow dive and then climbs sharply, coming up on the target's tail. Both High and Low Yo-Yos allows for a quick and severe change in heading.

PERFORMING A LOW YO-YO (BANKED VARIATION)

1. Push the flight stick forward to put the aircraft into a shallow dive.
Watch your speed. You don't want to get above your corner velocity. If you need to slow down in your dive, use flaps (press **F**) or air brakes (press **B**). If you're still going too fast, drop your landing gear (press **G**) and/or cut throttle.
2. Once you've dived below your target, pull back on the flight stick to begin your climb.
3. On the way up, bank towards target for a clear shot.

COUNTERING THE ATTACKER'S LOW YO-YO (BANKED VARIATION)

As is often the case, mimicking the attacker's action is a good defense — the defender can attempt to go into the Low Yo-Yo with the attacker. Another useful counter is to continue your break while the attacker dives, and then flip into a Split S, pulling up only when the attacker has begun his climb.

HIGH YO-YO (BANKED VARIATION)

The High Yo-Yo is like a Low Yo-Yo in reverse — a steep break/climb followed by a dive. Like the Low Yo-Yo, the Hi Yo-Yo also reduces angle-off, giving the attacker a better shot. This maneuver assumes that you have the speed to pull into a steep climb and that you're traveling much faster than your target.

PERFORMING A HIGH YO-YO (BANKED VARIATION)

1. Pull the flight stick back to climb.
2. Once you've climbed above your target, push toward on the flight stick to begin your dive.
3. On the way down bank towards the target for a clear shot.

COUNTERING THE ATTACKER'S HIGH YO-YO (BANKED VARIATION)

A Split S can be an effective countermeasure if performed right as the attacker begins his climb. Similarly, doing an Immelmann at the beginning of the attacker's dive will also work, especially if combined with an aileron roll and a 90° change in heading.

ROLLAWAY

Think of a Rollaway as the first half of a banked High Yo-Yo followed by a Split S.

PERFORMING A ROLLAWAY

1. Move the flight stick right or left to roll the aircraft into a 45° bank, and then pull back on the flight stick.
2. Once you've reached the top of your arc, roll the aircraft away from your opponent's turn.
3. Level off inverted and pull back on the flight stick.
4. When the horizon comes back into view, return the flight stick to center.

HIGH G BARREL ROLL

The High G Barrel Roll is performed in a turn and, when performed correctly, can quickly transform the defender into an attacker. This maneuver is only effective if the attacker is right on your tail.

PERFORMING A HIGH G BARREL ROLL

1. Pull the flight stick right or left to roll the aircraft into a 45° dive or climb. You want to break across your opponent's flight path.
2. Initiate a Barrel Roll away from the turn.

COUNTERING AN ATTACKER'S HIGH G BARREL ROLL

Use a straight High Yo-Yo to climb above and come down on your spiraling opponent.

BARREL ROLL ATTACK

The Barrel Roll Attack lets the attacker avoid an overshoot when his target breaks.

PERFORMING A BARREL ROLL ATTACK

1. As soon as the opponent breaks, level off.
2. Pull back on the flight stick to pull up the nose.
3. Initiate a Barrel Roll *away from* the target's break.
4. Pull in behind the defender again.

COUNTERING AN ATTACKER'S BARREL ROLL ATTACK

Your best bet in countering a Barrel Roll Attack is to reverse your break, thus cutting across his path (scissoring). A more dangerous alternative is to dive *away from* the attack.

SPIRAL DIVE

The Spiral Dive is just what the name says — a spiraling dive to the floor. This is a hard defensive maneuver and is, in fact, dangerous — a skilled attacker can easily follow the defender down, taking as many opportunity shots as he can.

PERFORMING A SPIRAL DIVE

1. Move the flight stick to the right or left, and then push it all the way forward. When the ground fills your forward view, pull the stick back to center (however, maintain the right or left roll).
2. Watch your speed. You don't want to get above your corner velocity. If you need to slow down in your dive, use flaps (press F) or air brakes (press B). If you're still going too fast, drop your landing gear (press G) and/or cut throttle.
3. Let the attacker overtake you in the dive.

COUNTERING A DEFENDER'S SPIRAL DIVE

The initiative is yours. You can drop flaps (press F) and/or air brakes (press B) and dive after him, or you can wait above and look for a better attack opportunity. Whatever you do, keep the pressure on him.

GUNNERY SCHOOL

Aerial gunning is an art, but one that can be learned with patience and practice. Shooting a fast-moving target from an equally fast-moving platform is considerably more complex than shooting a slingshot at an empty bottle. The factors that come into play are:

- Target range
- Flight path
- Deflection angle
- Holdover angle
- Leading
- Gun sight type

Each of these factors are discussed below assuming you have the simplest kind of gun sight — one that does not account for any of these factors.

TARGET RANGE

Improved guns notwithstanding, fighter pilots rarely hit targets beyond 4500 ft. At ranges of 2625 ft or less, they stand an excellent chance of hitting their opponents with low deflection shots. Target range affects all other factors, and these effects will be described in the following sections.

FLIGHT PATH

Bullets fly straight after you shoot them. That may sound obvious, but seeing this in a dogfight can be disconcerting to novice pilots. If you're on an enemy's tail and both of you are in a tight turn, your bullets will fall far behind him even though he's steady in your sights.

DEFLECTION ANGLE

The deflection angle is the angular difference between your flight path and that of your target. An airplane flying directly away from you has a deflection angle of 0° , while an airplane flying perpendicularly across your nose has a deflection angle of 90° . The higher the deflection angle, the harder it is to hit the target because it spends less time crossing your visual field.

Basically, if your target is flying directly away from you, your bullets follow him and have the best chance of hitting. If he's flying across your flight path, however, and you fire your guns when he's in your sights, he'll be long gone by the time the bullets reach where he was when you fired. The more deflection angle there is between you and your target, the farther your bullets will fall behind. The deflection angle is the second most important consideration in firing your guns, and it doesn't have nearly as much effect as flight path.

HOLDOVER ANGLE

The holdover angle is the effect gravity has on the path of your bullets. When you fire your guns, gravity pulls them down so they go lower than your gun sight indicates. In the close ranges you deal with in dogfighting, however, this effect is so small compared to the others that it can be safely ignored.

LEADING

With most gun sights, you have to adjust for range, flight path, and deflection angle on your own. To do this, you *lead* the enemy, which is to say you aim your gun sight where you believe the enemy will be after the bullet covers the distance between you.

The single most important factor you need to account for is flight path. The more g's you're pulling, the farther *ahead* of your enemy you must aim to hit. If he has a high deflection angle, you must aim even further ahead of him. If he is at extreme range, you have to aim even further ahead. All these factors require practice to master, and even the best aces aren't perfect at performing these on-the-fly estimates.

Some gun sights account for flight path and range, others don't. You have to know what type of gun sight you're using before you can accurately guess how much you must lead your targets.

GUN SIGHT TYPE

World War II

These airplanes had the simplest gun sight possible — it shows you exactly the direction the bullets fly the instant you fire them. You have to adjust for range, flight path, and deflection angle on your own. This type of dogfighting requires the most leading.

Korea

These airplanes have the ability to adjust for flight path, so half the battle is solved by the *pipper* (the circle-shaped sight). This pipper determines how many g's you're pulling and moves to compensate for your flight path, but it assumes that the target is 1200 feet ahead of you. If the target is farther away than that, you must manually lead the target a little to account for the increased range. Likewise, if the target is closer than 1200 feet, you must *trail* the target a bit. Additionally, you must always manually adjust for deflection angle if appropriate. (Otherwise, if your target happens to be exactly 1200 feet ahead of you, in level flight, and flying directly away from you, put him in your sight and you'll score direct hits.)

Hint: If you display the Target Window (press **Shift-3**), it tells you the exact line-of-sight distance between you and your target.

Vietnam

These airplanes have a sight similar to those used in Korea, with the additional advantage of radar. If your radar is turned on, the gun sight determines the exact range of the enemy and uses that in its flight path calculations. The only adjustment you have to make is for deflection angle. If you do not have your radar turned on, the gun sight works exactly like those in Korea.

FIGHTER TACTICS

This chapter is about fighter tactics and how to use Air Combat's controls to your advantage. Some of the tactics described here are good principles of air combat that fighter pilots have developed and respected over the years. Other tactics may only apply to the era you're flying in.

The chapter is divided into sections that describe four phases of air combat, without which any discussion of air warfare is incomplete. The four phases are:

- Detection
- Closing
- Attack
- Maneuver

At the end of the chapter, you'll find more sections with specific approaches to evading missiles and attacking bombers and ground targets.

DETECTION

Locating the enemy before he locates you gives you the initiative. The cunning pilot knows that early detection lets him stack as many odds in his favor as time allows — altitude, speed, relative position, correct weapon choice — giving him a large advantage over his opponent.

VISUAL DETECTION

The View keys are among the most important tools in the game. F1-F4 can be pressed fairly quickly — you should make a habit of doing just that when you're not too busy dogfighting. You don't have a wingman, *so keep your eyes open!*

The Scan keys are effective, too, especially when used with Forward View (**F1**). The Forward View is the *only view* from which you can target an opponent.

To get a fast 360° scan of the horizon, press **F2**, and then use the right/left arrow keys to rotate your view in a complete circle. Note, however, that your belly is still a blind spot and you're vulnerable if you rely only on this means of visual detection.

ZOOM OUT WHEN YOU'RE HUNTING FOR TARGETS

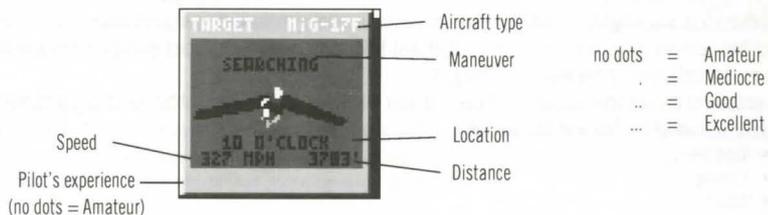
You want the widest possible view while searching for targets. Zooming out to 1 increases your field of vision. Press the minus (-) key to zoom out. Use it and spot the bandits early.

ZOOM IN FOR "YEAGER VISION"

If an airplane is too far away to identify, press the plus (+) key to zoom in. If this feels like cheating, remember that most aces have above average eyesight. Yeager's, for instance, is still 20/10 — double that of the normal human.

USING THE TARGET WINDOW

When used properly, the Target Window can provide you with more than just detection information — it contains data that's useful in all phases of air combat.



The Target Window shows the targeted aircraft as he appears to you or *would* appear to you if he were in visual range. Though subtle, this visual information communicates a lot about his relative position to you.

1. You can see if he's moving toward or away from you.
2. You can tell if he's above or below you by the color of the background. If you can see the ground behind the target, you're above him; if blue sky is blazing over his airplane, he's above you. If the target window is split, the target is at a more or less equal altitude.
3. You can estimate his heading.

Around the airplane view is other useful information — the type of airplane as well as its location, speed, and range. The maneuver currently being performed by the target also appears at the top of the window. Anticipating your enemy's next move is never easy, so knowing what he's up to gives you a huge advantage.

Hint: Since this is considered a help feature, you may want to use **F7** and **F8** views instead to get a sense of where the enemy is in relation to you.

RADAR

Radar transmits high frequency waves in a 90° arc off the nose of your airplane. These waves reflect off of objects and return to your signal receiver, which translates the waves into objects with specific size, range, and heading. Your radar unit can sense targets at ranges of up to 60 miles.

Be careful! Switching on your radar is like lighting a torch in a dark room. Enemies *everywhere* are guaranteed to sense your active radar, and they'll know your position and range, too. Though you can use radar *briefly* to detect enemies, you'll need to turn it on for extended periods when firing radar-guided missiles. Your lead-computing gun sight also needs radar to calculate the target's range.

AIR COMBAT'S SPECIAL DETECTION

The help windows can give you extraordinary powers of detection.



The Map Window (**Shift-1**) shows you the general direction of all friendly and hostile aircraft around you — it's actually better than radar because no enemies know you're using it. This is not unlike modern AWACS.

DIRECTION TO NEAREST ENEMY

You can know the clock direction to your nearest enemy by pressing **Ctrl-Z**. His location will appear in the Warning/Communications line at the top of the HUD.

CLOSING

There is no golden rule for closing in on a target except that you want to maintain the element of surprise if possible. To do this, you want to stay out of sight and move quickly.

APPROACH FROM THE TARGET'S BLIND SPOT

Fighter pilots will typically see you if you're anywhere in front of them, so you should approach them from the rear. The inexperienced pilot won't be checking his six as often as he should. The fighter pilot's blind spot is below and behind his airplane, and this is a good direction from which to close.

If your radar is on, fighters with radar will detect and instantly know your location. The moral of the story — don't flip on your radar switch until you're ready to fire, and be prepared to act if your missile fails to hit. Bombers can see in all directions, so there's no way to approach them without their knowing it.

SLASH ATTACK

It's obvious that the less time you spend closing, the less time your target will have to spot you. This is one way in which an altitude advantage is important. Altitude is a reservoir of energy that can be quickly turned into speed by diving. Not only do you close in on your target swiftly, the dive leaves you with a high store of kinetic energy that can be used for other maneuvers — a Climb, Yo-Yo, etc. — or to escape if the odds aren't in your favor.

Speed is all important in the attack phase. An airplane won't even need maneuverability if the attack is fast and the pilot is accurate. If your airplane is very fast but not as maneuverable as your opponent's, you can use repeated slash attacks to avoid a dogfight.

ATTACK

Once the attack begins, there's no going back. As Yeager says, "If you get an advantage, you've got to press it home."

GUN ATTACKS**Vulnerability Cones**

For fighters with fixed, forward-shooting guns — the "norm" in fighter design after World War I — a target's angle of deflection is important (see *Gunnery School* for a complete explanation).

For fighter pilots in all wars, the maximum angle of deflection has remained around 45°. At an angle of 45° or less, most pilots stand a chance of keeping their sights on their target and hitting it. This angle forms the target's *vulnerability cone*.

Naturally, the smaller the angle of deflection, the better the attacker's chance of hitting his target. Within a few precious degrees, the attacker's chance of hitting rises dramatically. This is the target's *lethal cone*. Improvements in gun sights have increased the size of the target's lethal cone from 15° in World War II to 30° in Vietnam.

For more on making successful gun attacks, see *Gunnery School*.

ATTACKING WITH MISSILES

In Vietnam, the actual kill rate with missiles was very low, which was one reason why the gun was later installed on the F-4 Phantom. Even so, your Vietnam era airplanes are equipped with missiles, and you should use them in combat — you have nothing to lose, and you could score an easy kill with one.

Missile ranges are summarized in the following table:

Missile	Max. Range	Min. Range
Sparrow	4 miles	1 1/2 miles
Sidewinder	2 miles	1/4 mile
K-13 Atoll	2 miles	1/4 mile

Within the minimum range, your missile doesn't have enough room to get a lock on the target and detonate properly.

Radar-Guided Missiles

The Sparrow is guided by radar waves emitted by your radar and reflected back off the target. Your radar must be on and you must maintain a target lock while the missile is in flight. Note, however, that you can select a new target while the missile is in flight. The new target must be within the missile's seeker in order for it to track.

Since Sparrows have a longer range than heat-seeking missiles, you should use them for long-distance attacks (from any direction) and save your Sidewinders for in-fighting. Because of the sensitivity of the seeker on the missile, it's useless to fire a missile in a turn greater than 3 g's.

Heat-Seeking Missiles

Sidewinders and K-13 Atolls are fire-and-forget weapons — once they're launched, they either hit or they don't. Nevertheless, you should not fire until you have a target lock. You must be behind your opponent and in full view of his engines. Because of the sensitivity of the seeker on the missile, it's useless to fire a missile in a turn greater than 3 g's.

Heat-seeking missiles can be distracted by other heat-emitting object such as the sun and tropical jungle floors. Hitting targets below the horizon or in the sun can be difficult.

TRACKING ANOTHER OPPONENT WHILE YOU ATTACK

If you're closing on two enemies, chances are they'll break in opposite directions when you attack. You want to press your attack on one of the planes while keeping an eye on the other. Here's a trick. Target the opponent you **AREN'T** following. Once you've shot down the untargeted plane, the target marker will tell you where to find the other plane.

LET YEAGER BE YOUR WINGMAN

When you're concentrating on your attack, it helps to have a wingman who can check six for you. Let Yeager alert you to bandits on your six. Press **Shift-4** to turn the Yeager Window on and off.

MANEUVER

When an initial attack fails and the element of surprise has been lost, each pilot performs a series of maneuvers and counter-maneuvers until one opponent successfully disengages or is shot down. This maneuvering phase is what's traditionally known as the *dogfight* — the relatively but intensely active period in which each pilot twists and gyrates in an attempt to get into his opponent's cone of vulnerability.

Though air combat is complex, random movement will not win the day. At any given point in a dogfight, there are good and bad maneuvers — a wrong response to a situation can spell a pilot's death if luck isn't on his side. Nonetheless, no air combat scenario is scripted from the start. It's the individual pilot — with his own experience, awareness, and ability to handle his equipment — that makes every air combat encounter unpredictable.

PURSUIT

Pursuit can be difficult once the target has moved off of the screen. Here are some ways to overcome this difficulty.

USING THE TARGET MARKER

Whenever a targeted opponent is not in forward view of your cockpit — that is, he's above, below, off to a side, or behind you — a small X (the target marker) indicates which direction you need to travel in order to get back into a firing position. This direction is the *shortest possible route* between the nose of your aircraft and the enemy plane. Note that this is not *necessarily* the best route — at low altitudes, you could auger in following the shortest route to your target!

If your primary objective at the moment is to *bring the enemy into view*, bank until the target marker is at the top of the screen, and then pull back on the stick until the marker is in the center. Once you get him into your sights, let him have it.

Using Plane → Target View to Pursue

If your opponent is nearby but off of the screen, you can use the Plane → Target view (**F7**) to continue following him (remember, the opponent must currently be targeted). With this view, you'll know immediately if he reverses direction.

Using Up 45° View in a Turn

When you're hard on your opponent's tail and turning with him, you can use the Up 45° view to quickly see how close he is. If he's *real* close, you may want to drop air brakes or flaps to bleed off a little speed — this will give you a tighter turn and pull him into your gun sights.

Note: You could ease off on the throttle, but flaps act more quickly. You also don't have to waste time later bringing your engine back up to speed.

ALTITUDE VS. SPEED

You always want to have enough speed to maneuver in any direction. Too much speed means that you can't turn quickly — you're barreling along but you can't pull the g's. Too little speed means that you can't climb or turn at all — all you can do is peter along in level flight.

It helps to imagine a fighter's speed as a limited resource, just like its fuel. Climbing and hard maneuvering "cost" the pilot speed as his airplane fights gravity and drag. The engine gives you back some of this lost speed, but you may be maneuvering too hard to get it all back. You begin losing speed at a faster rate than you replace it. What do you do? In air combat, an airplane's "energy state" is more important than its speed. Your energy state is the combined energy of your speed *and* your location. Your airplane's altitude is an energy resource you can use. Since your airplane once traded energy for altitude — it "spent" energy climbing — you can trade altitude for energy by diving.

The fact that altitude can be converted into speed and maneuvering power is why Yeager says, "Keep as much altitude advantage as possible." Altitude is a *real* advantage. Your opponent must expend energy to come up after you, while you have the option to make a slashing dive attack.

Some general rules can be formulated from the energy state concept (if you remember that all rules have to be broken on occasion):

- Don't waste energy on maneuvers that don't have a use
- Climb when you can
- Dive if you need the speed
- Watch where you are in the envelope — don't start a maneuver that will leave you going too slowly

MISSILE EVASION TECHNIQUES

As soon as you detect a hostile missile, you should drop the appropriate countermeasure devices: flares if it's a heat-seeking missile, or chaff if it's a radar guided-missile.

Your next move should be a hard defensive break. Missile seekers have narrow fields of vision. Infrared missiles can easily lose their lock once your engines are out of their sight. The break will be less effective against radar-guided missiles, but if you turn sharply, they may not be able to turn with you.

ATTACKING BOMBERS

Bombers don't have the speed and agility of fighter, but they are typically well-armed and, with so many eyes on board, are never surprised. To increase your chances of survival, you must stay out of as many gun sights as you can and come in at an angle at which the gunners have the least chance of hitting you. To do this, you have to know the where the turrets are on your target.

GUN MOUNTS

Guns can swing in 60° horizontal and vertical arcs.

HIT PROBABILITIES

Due to the fact that a bomber is moving forward, an individual gunner's chances of hitting you vary depending on his location. Note, however, that all gun positions have a smaller chance of hitting you the harder you're maneuvering (climbing, diving, or turning).

FRONTAL ATTACKS

With combined closing speeds of over 500 mph, the gunners' chances of hitting you are not good. In addition to firing on a quickly approaching target, they must cope with the thought that if they actually destroy you, large pieces of your disintegrating airplane could hit them!

FLANK ATTACKS

The waist-gunner of the B-17 is going to have problems hitting you. His gun, which he must move by hand, is sticking out into a 200 mph wind. He must not only fire into this wind, he has to compensate for any difficult deflection angle you put between you and the bomber. Expect waist-gunners to hit less often than any other.

REAR ATTACKS

The rear gunner has the best chances of hitting you. With your plane closing at around 100 mph, he has plenty of time to take his aim, and a power-operated turret only makes his job easier. In addition, he's packing twin .50 caliber machine guns (B-17) or 20 mm cannons (B-29 and B-52) that can do a job on your little fighter.

FIGHTER APPROACHES

Avoid rear attacks on bombers, especially if they're in a group or they have experienced crews.

Front attacks require good marksmanship and a lot of courage. Indeed, the Luftwaffe considered head-on attacks the most effective means of shooting down bombers, despite the fact that a lot of time was lost overtaking the bombers for each successive attack.

Some good alternatives to the head on-attack is to approach from the sides due to the relative impotence of the guns there. An extremely skilled pilot could even slip in horizontally between the areas the turrets cover. Of course, this approach doesn't take into account the guns on other bombers in the group. The top and bottom of the bombers are entirely defenseless; however, it's difficult to dive steeply on a moving target and still be accurate.

ATTACKING THE ME-110

The Me-110 is a fighter, but its rear gun can make it difficult to attack using the normal tail-chasing methods. You should approach it from the rear, but *below* it, where the rear gun can't be brought to bear.

GROUND ATTACK

To attack a ground target, go into a shallow dive while trying to keep the target in your gun sights. The more shallow your dive, the more gradually you can pull up your nose and the more accurate your shooting.

You may want to slow down when making your strafing run. Be careful! You don't want to go so slowly that you can't respond to an unexpected attack from an enemy airplane.

Hint

As you make your approach, increase magnification (press +). The bigger your target on the screen, the better your aim. Be careful maneuvering while the target is magnified — it's much easier to auger in when you don't have a sense of your true distance from things.

AIRPLANE DESCRIPTIONS

REPUBLIC P-47 D THUNDERBOLT

Specifications: *Type:* Single seat fighter-bomber; *Power plant:* One 2,300 Pratt & Whitney R-2800 Double Wasp 18-cylinder two-row radial; *Wingspan:* 40.8 ft; *Length:* 36.1 ft; *Height:* 14.2 ft; *Weight:* 19,400 lbs; *Maximum Speed:* 428 mph; *Climb:* 2,800 ft/min; *Ceiling:* 43,000 ft; *Range:* 590 miles; *Armament:* Eight 0.50 in Colt-Browning M-2 machine-guns in wings.

NORTH AMERICAN P-51D MUSTANG

Specifications: *Type:* Single-seat fighter; *Power plant:* One 1,590 hp Packard-built Rolls-Royce Merlin V-1650-7 liquid-cooled engine; *Wingspan:* 37.0 ft; *Length:* 32.2 ft; *Height:* 13.7 ft; *Weight:* 7,125 lbs; *Maximum Speed:* 437 mph; *Climb:* 3,475 ft/min; *Ceiling:* 41,900 ft; *Range:* 950 to 2,000 miles; *Armament:* Six Browning MG53-2 machine-guns in wings.

BOEING B-17E FLYING FORTRESS

Specifications: *Type:* High altitude bomber; *Power Plant:* Four 1,200 hp Wright R-1820-97 Cyclone nine-cylinder radials with exhaust driven turbochargers. *Wingspan:* 103.8 ft; *Length:* 73.8 ft; *Height:* 19.1 ft; *Weight:* 31,150 lbs (loaded); *Maximum Speed:* 317 mph; *Ceiling:* 35,000 ft; *Range:* 1,100 miles; *Armament:* 13 0.50 machine-guns and 17,600 lbs in bombs.

FOCKE-WULF FW-190A-8

Specifications: *Type:* Single-seat fighter-bomber; *Power Plant:* One 1,700 hp BMW 801 Dg 18-cylinder two-row radial engine; *Wingspan:* 34.5 ft; *Length:* 29.0 ft; *Height:* 13.0 ft; *Weight:* 7,055 lbs; *Maximum Speed:* 408 mph; *Climb:* 2,350 ft/min; *Ceiling:* 37,400 ft; *Range:* 497 miles; *Armament:* Two 13mm MG 131 machine-guns above engine, four 20mm MG 151/20 cannon in wings.

MESSERSCHMITT ME-109E EMIL

Specifications: *Type:* Single seat fighter/fighter-bomber; *Power Plant:* One 1,300 hp Daimler-Benz DB 601E inverted-V-12 liquid-cooled engine; *Wingspan:* 32.4 ft; *Length:* 28.3 ft; *Height:* 7.5 ft; *Weight:* 4,330 lbs; *Maximum Speed:* 390 mph; *Climb:* 3,100 ft/min; *Ceiling:* 38,000 ft; *Range:* 350 miles; *Armament:* Two 8mm cannon MG-17 machine-guns above engine, one 20mm MG-151 cannon in propellor hub.

MESSERSCHMITT ME-110B ZERSTORER

Specifications: *Type:* Two-seat/three-seat fighter; *Power Plant:* One 1,100 hp Daimler-Benz DB 601A engine; *Wingspan:* 32.4 ft; *Length:* 28.3 ft; *Height:* 7.5 ft; *Weight:* 4,330 lbs; *Maximum Speed:* 349 mph; *Climb:* 2,255 ft. min; *Ceiling:* 32,800 ft; *Range:* 559 miles; *Armament:* Two 20mm Oerlikon MG FF cannon in nose, four 7.92 mm MG-17 machine-guns in nose, one 7.92mm MG-17 manned machine-gun in rear cockpit.

MESSERSCHMITT ME-163 KOMET

Specifications: *Type:* Short-range fighter-interceptor; *Power Plant:* One 16,67 kN 3,748 lb thrust Walter 109-509A-2 rocket motor; *Wingspan:* 30.6 ft; *Length:* 18.6 ft; *Height:* 9.0 ft; *Weight:* 4,191 lbs; *Maximum Speed:* 596 mph; *Climb:* 16,400 ft/min; *Ceiling:* 54,000; *Range:* 50 miles; *Armament:* Two 30mm MK 108 cannons, twenty-four rockets underwing, to vertically discharged rockets within the wing.

MESSERSCHMITT ME-262 STURMVOGEL

Specifications: *Type:* Single-seat fighter; *Power Plant:* Two 1,980 lb thrust Junker Jumo 004B single-shaft axial turbojets; *Wingspan:* 41.0 ft; *Length:* 34.8 ft; *Height:* 12.6 ft; *Weight:* 8,820 lbs; *Maximum Speed:* 540 mph; *Climb:* 3,940 ft/min; *Ceiling:* 37,565 ft; *Range:* 652 miles; *Armament:* Four 30mm MK 108 cannon in wings.

STINSON L-5 SENTINEL

Specifications: *Type:* Two-seat short-range aircraft; *Power Plant:* One 141.6 kW 190 hp Lycoming O-435-1 engine; *Wingspan:* 34.0 ft; *Length:* 24.1 ft; *Weight:* 2,158 lbs; *Maximum Speed:* 129 mph.

NORTH AMERICAN F-86E SABRE

Specifications: *Type:* Single-seat interceptor-fighter; *Power plant:* One 5,200 lb thrust General Electric J-47-13 turbojet; *Wingspan:* 37.0 ft; *Length:* 37.0 ft; *Height:* 14.0 ft; *Weight:* 10,555 lbs; *Maximum Speed:* 679 mph; *Climb:* 4,760 ft/min; *Ceiling:* 47,000 ft; *Range:* 925 miles; *Armament:* Six 0.50 in machine guns.

MIKOYAN-GUREVICH MIG-15 FAGOT

Specifications: *Type:* Single-seat fighter; *Power Plant:* One 5,005 lb thrust RD-45 Rolls-Royce Nene turbojet; *Wingspan:* 33.1 ft; *Length:* 36.3 ft; *Height:* 11.1 ft; *Weight:* 8,820 lbs; *Maximum Speed:* 668 mph; *Climb:* 10,500 ft/min; *Ceiling:* 51,000 ft; *Range:* 1,115 miles; *Armament:* One 37mm NS-37 cannon in nose, two 23mm NS-23 cannons in nose.

YAKOVLEV YAK-9

Specifications: *Type:* Single-seat fighter; *Power Plant:* One 1,014 kW 1360 hp Klimov Mi-105P f-3 engine; *Wingspan:* 32.8 ft; *Length:* 28.0 ft; *Height:* 8.8 ft; *Weight:* 7,055 lbs; *Maximum Speed:* 368 mph; *Climb:* 2,400 ft/min; *Ceiling:* 32,800 ft; *Range:* 875 miles; *Armament:* One 20mm cannon, one 12.7mm machine-gun.

BOEING B-29C SUPERFORTRESS

Specifications: *Type:* High altitude heavy bomber; *Power Plant:* Four 2,200 hp Wright R-3350-23 Duplex Cyclone 18-cylinder radials each with two exhaust-driven turbochargers; *Wingspan:* 141.3 ft; *Length:* 99.0 ft; *Height:* 27.8 ft; *Weight:* 135,000 lbs (loaded); *Maximum Speed:* 357 mph; *Ceiling:* 36,000 ft; *Range:* 3,250 miles; *Armament:* One 20mm cannon, one twin 0.50 cal. machine-gun, 22,000 lbs of bombs.

MCDONNELL DOUGLAS F-4E PHANTOM II

Specifications: *Type:* Two-seat fighter; *Power plant:* Two 17,900 lb thrust General Electric J-79-GE-17A turbojets; *Wingspan:* 38.4 ft; *Length:* 62.8 ft; *Height:* 16.5 ft; *Weight:* 28,000 lbs; *Maximum speed:* 1,386 mph; *Climb:* 61,400 ft/min; *Ceiling:* 71,000 ft; *Range:* 786 mph; *Armament:* One 20mm M61A1 rotary cannon, four AIM-7 Sparrows, four AIM-9 Sidewinders.

AIM-7 Sparrow: *Guidance:* Semi-active radar homing; *Propulsion:* Solid propellant rocket; *Warhead:* 88 Ibarthelet continuous rod; *Length:* 12 ft; *Weight:* 503 lbs; *Diameter:* 8 in; *Wingspan:* 3.3 ft; *Maximum Speed:* 3.5 Mach; *Range:* 30+ miles.

AIM-9 Sidewinder: *Guidance:* Infrared homing; *Propulsion:* Solid propellant rocket; *Warhead:* 25 lb fragmentation; *Length:* 9.4 ft; *Weight:* 190 lbs; *Diameter:* 5 in; *Wingspan:* 2.08 ft; *Maximum Speed:* 2.5 Mach; *Range:* 5 miles.

REPUBLIC F-105D THUNDERCHIEF

Specifications: *Type:* Single-seat fighter-bomber; *Power Plant:* One 17,200 lb thrust Pratt & Whitney J-75-19 turbojet; *Wingspan:* 34.9 ft; *Length:* 67.0 ft; *Height:* 19.8 ft; *Weight:* 27,500 lbs; *Maximum Speed:* 1,226 mph; *Climb:* 34,500 ft/min; *Ceiling:* 48,500 ft; *Range:* 800 miles. *Armament:* One 20mm cannon, two 3,000 lb bombs, and four Sidewinder missiles.

MIKOYAN-GUREVICH MIG-21MF FISHBED

Specifications: *Type:* Single-seat fighter; *Power Plant:* One 11,240 lb thrust Tumansky single-shaft turbojet; *Wingspan:* 23.5 ft; *Length:* 48.0 ft; *Height:* 14.8 ft; *Weight:* 11,464 lbs; *Maximum Speed:* 1,285 mph; *Climb:* 36,090 ft/min; *Ceiling:* 59,050 ft; *Range:* 683 miles; *Armament:* Two 30mm NR-30 cannon, four AA-2 Atoll missiles. AA-2 Atoll: *Guidance:* Infrared or semi-active radar homing; *Propulsion:* Solid Propellant Rocket; *Warhead:* unknown; *Length:* 9.1 ft; *Weight:* 155 lbs; *Diameter:* 4.75 in; *Wingspan:* 1.7 ft; *Maximum Speed:* 2+ Mach; *Range:* 4 +miles.

MIKOYAN-GUREVICH MIG-17F FRESCO

Specifications: *Type:* Single-seat fighter-interceptor; *Power Plant:* One 5,952 lb thrust Kilmov VK-1 single shaft centrifugal turbojet; *Wingspan:* 31.0 ft; *Length:* 36.3 ft; *Height:* 11.0 ft; *Weight:* 9,040 lbs; *Maximum speed:* 711 mph; *Climb:* 12,795 ft/min; *Ceiling:* 54,460 ft; *Range:* 870 miles; *Armament:* Three NS-23 cannons under nose, up to eight rockets.

BOEING B-52 STRATOFORTRESS

Specifications: *Type:* Strategic Heavy Bomber; *Power Plant:* Eight 13,750 lb thrust Pratt and Whitney j57-P-43W turbojets; *Wingspan:* 185.0 ft; *Length:* 157.6 ft; *Height:* 40.7 ft; *Weight:* 480,000 lbs; *Maximum Speed:* 665 mph; *Ceiling:* 55,000 ft; *Range:* 9,000 miles; *Armament:* Two 20mm cannon in remotely controlled tail position, 20 SRAM missiles, bombs.

APPENDIX: HUD MESSAGES**AIRCRAFT DAMAGE****"ENGINE DAMAGED"**

Your engine is mostly all right, but its maximum power is decreased. If you try to set the engine at 100% power, it'll "top out" at the new max.

"ENGINE SERIOUSLY DAMAGED"

Something major has gone wrong with your engine and starts to make a "rough," irregular sound. It is probably starting to overheat, in which case you'll soon see "ENGINE OVERHEATING".

"TURBINE FAILURE"**"COMPRESSOR FAILURE" and****"ENGINE FAILURE"**

Critical parts of your jet engine have failed, causing an immediate total loss of power. The first two messages appear only if you're in a jet, the third only if you're in a prop.

"FUEL TANK ON FIRE" and**"FUEL TANK FIRE EXTINGUISHED"**

Your plane will explode in 10 - 15 seconds. There's a small chance the fire will go out before then. That chance increases if you speed up. If it goes out, you'll see the second message.

"RADAR DAMAGED"

Your radar has been rendered inoperable, which means:

- your cockpit radar display shuts off
- you can't get a lock with radar-guided missiles
- your gun sight no longer uses accurate range, and therefore is less accurate in computing lead.

"ELEVATORS DAMAGED"

You can only pull 50% of your usual g's.

"AILERONS DAMAGED"

You can only roll half as fast as before.

"FLAPS JAMMED"**"GEAR JAMMED" and****"BRAKES JAMMED"**

You can no longer operate the item listed.

"WING DAMAGED"

Your wing now generates less lift and more drag.

"GUNS DAMAGED" and**"MISSILES DAMAGED"**

This appears when either an entire weapon has been destroyed or the ammunition for that weapon is no longer available (e.g., broken ammo belt, etc).

"OIL LINES DAMAGED"

When oil runs out, your engine starts to overheat.

"HYDRAULIC LINES DAMAGED"

When hydraulic fluid runs out, you can't toggle brakes, flaps, or gears. In F-86, F-4, MiG-21, your hydraulic-boosted controls lose their responsiveness while the fluid is running out.

"FUEL TANK DAMAGED"

Your fuel starts to leak.

"CONTROL LINES DAMAGED"

The controls start to move erratically and you have to correct for it.

"STRUCTURAL DAMAGE"

Due to damage to your plane's overall structural integrity, any time you pull $\geq 5g$ or $\leq -4g$, your plane may fall part in midair (about 1% chance per second when you're within the limits).

"CHAFF DISPENSERS DAMAGED" and**"FLARE DISPENSERS DAMAGED"**

You can't use that device any more.

"YOU'VE BEEN HIT"

You'll die in 10 - 15 minutes if you don't return to your base.

"YOU'VE BEEN SERIOUSLY INJURED!"

You'll die in 1 - 2 minutes if you don't return to your base.

"YOU ARE ABOUT TO DIE FROM YOUR WOUNDS!"

Pray that St. Peter has your name on his list.

"OUT OF FUEL"

Your engine shuts down due to lack of fuel.

"OUT OF OIL"

You've run out of oil. Your engine will now start to overheat. You'll soon see the following message...

"TO PREVENT THE ENGINE FROM OVERHEATING, YOU CAN SET THROTTLE TO 0%, THEREBY SHUTTING THE ENGINE OFF. THIS WILL CAUSE IT TO GRADUALLY COOL, BUT IT'LL HEAT UP AGAIN IF YOU TURN IT ON AGAIN."

"ENGINE OVERHEATING"

Your engine has reached 50% of its max temp. When it reaches 100%, the engine will catch on fire, and you'll see...

"ENGINE ON FIRE"

After your engine temperature reaches maximum, your engine catches fire and this message appears. In about 10 - 20 seconds, your plane will explode.

"YOUR PLANE IS ABOUT TO EXPLODE!"

If you've taken 100% of your max damage (see the "d" command for your current status), any additional hit you take can cause your plane to fall apart/blow up. When this happens, you'll see this message. You'll have 5 - 10 seconds to bail out before your plane blows up.

FLIGHT CONDITIONS**"MACH 1.0 EXCEEDED"**

You have broken the sound barrier.

"APPROACHING STALL"

In a second or two you will begin to stall. Point nose down, set max thrust.

"STALL"

You're stalling. Point nose down, set max thrust

"THRUST LIMIT"

You're at your max speed for this altitude. Your engine can't generate enough thrust to make you go any faster.

"EXCEEDING MAXIMUM SPEED"

You've exceeded your plane's max speed at this altitude. If you continue to over-stress the plane by staying outside of the envelope (it takes at least 15 seconds), you'll see the message below. You should slow down by chopping the throttle, pulling up, putting out your flaps and speed brakes, etc.

"WING STRUCTURE FAILING"

When you see this, you'd better slow down or else your wings will rip off. Act fast.

"WINGS RIPPED OFF"

You poor child, you stayed over your maximum speed for so long that your wings couldn't stand the stress and ripped off. You're on your way to becoming part of the landscape beneath you. Sayonara!

GLOSSARY

Ace A pilot who has five confirmed kills.

Afterburner A device for gaining extra thrust at the expense of greatly increased fuel consumption by igniting fuel directly in the exhaust engines.

Ailerons Hinged surfaces at the trailing edge of each wing, typically near the wingtips. Ailerons control the plane's roll.

Altimeter Instrument used to measure the height (in feet) of the airplane above sea level.

Angle of Attack The angle at which the wing meets the oncoming air. The greater the angle of attack, the more lift occurs as air striking the bottom of the wing is deflected downward. If the angle of attack is too great, the airplane stalls.

Attitude The direction the nose of the airplane is facing.

Auger In Crash.

Back Pressure Pulling back on the flight stick.

Bandit An enemy plane.

Blackout The effect of high positive g's on the human body, causing blood to rush away from the head and the pilot to momentarily blackout. See also *Redout*.

Bogey An unidentified airplane.

Bounce Make a surprise attack on an opponent.

Bug Out Disengage combat.

Buy the Farm Die.

Center of Gravity The point at which the longitudinal, lateral, and vertical axes of the airplane cross.

Control Surface Parts of the airplane that can be moved to affect the airplane's flight: ailerons, elevators, rudder, and flaps.

Deflection Angle Angle of a target off of the attacker's longitudinal axis. A high angle of deflection makes it difficult for an attacker to aim.

Dogfight The maneuver phase of air combat in which opposing pilots attempt to shoot down or evade the enemy.

Drag Resistance created by air striking the surface of the aircraft as it moves through the atmosphere. Drag increases with velocity and angle of attack.

Elevators Hinged surfaces on the trailing edge of the wings, typically near the fuselage. Flaps can be lowered to increase lift and drag.

Flight Stick The control device in the cockpit used to direct roll and pitch.

G-Force Gravitational force. One g equals the amount of pressure exerted on someone standing on earth. Also, a measure of how hard an airplane is turning.

Glareshield An airplane's windshield.

Go-Stick Throttle.

Heading The direction the aircraft is pointed, as indicated by the heading indicator.

HUD Heads Up Display. In Air Combat, also called Flight Info.

Jump Make a surprise attack on an opponent.

Kill A downed aircraft credited to a pilot.

Lateral Axis Axis of the aircraft that extends from wingtip to wingtip.

Lead To shoot downrange of a target's position.

Lift The upward force generated by air flowing over wings.

Longitudinal Axis Axis of the aircraft that extends through the fuselage from nose to tail.

Mach The Mach number is the ratio of true airspeed to the speed of sound. One Mach is 761 mph at sea level, decreasing to 660 mph at 36,000 ft.

O Club Officer's Club.

Pitch Rotation about the aircraft's lateral axis, pointing the aircraft's nose up or down.

Redout The effect of high negative g's on the human body, causing blood to rush to the head and the pilot to momentarily see red. See also *Blackout*.

Roll Rotation about the aircraft's longitudinal axis.

Rudder The hinged surface on the vertical stabilizer that controls the airplane's yaw.

Service Ceiling The altitude at which the engine no longer has enough power to maintain a climb rate of 100 feet per minute.

Situational Awareness A fighter pilot's ability to track the complexities of a fast-moving, dynamic combat situation.

Sortie A mission flown by an airplane.

Stall A situation in which air no longer flows smoothly across the upper surface of the wing, greatly reducing lift.

Stick The control device in the cockpit used to direct roll and pitch. Also called the flight stick.

Structural Failure The speed at a given altitude at which the airframe of the aircraft can no longer withstand air resistance.

Throttle The control that sets the engine's power output.

Thrust Limit The speed at a given altitude at which an airplane is no longer capable of generating lift.

Thrust/Weight Ratio The maximum amount of thrust (engine power) available to push the airplane's weight through the air. This is an important factor in determining a fighter's acceleration. The higher the thrust/weight ratio, the faster the airplane will accelerate.

VSI Vertical Speed Indicator. An instrument that measures the rate of climb or descent.

Vertical Axis Axis of the aircraft that extends vertically from top to belly.

Vertical Stabilizer The vertical section of the tail. Also called the fin.

Victory A downed aircraft credited to a pilot.

Wing Loading The amount of weight per square inch on the wing surface.

Yaw Rotation about the aircraft's vertical axis.

ABOUT THE MAN

Charles "Chuck" Yeager was born February 13, 1923 in Myra, West Virginia. He graduated from Hamlin High School and at age 18 he enlisted in the Army Air Corps, where he became an airplane mechanic. Enrolling in the "Flying Sargent" program, he distinguished himself as a natural pilot and earned his wings in 1943. From there he joined the 357th Fighter Group, the first all P-51 Mustang Group in the 8th Air Force. Over Nazi Europe he sent down 13 enemy aircraft, among them an Me-262, one of Germany's first jet-driven airplanes. Yeager was shot down over occupied France in March of 1944 and eluded the enemy with the help of the French Marquis, and he was soon back in the saddle.

After WW II, Yeager remained in the Air Force, serving as an instructor, test pilot, pilot, wing commander, and squadron commander in the United States, throughout Europe, and in the Philippines. On October 14, 1947 he became the first man to travel faster than the speed of sound, flying "Glamorous Glennis", a Bell X-1 aircraft. Six years later, he became the first man to exceed Mach 2, flying a Bell X-1A. Chuck Yeager was the top United States Air Force test pilot for a period of nearly ten years, and his subsequent career merited him an impressive list of credentials. He graduated from the Air War College, was appointed Commandant of the Aerospace Research Pilot School, became a brigadier general in 1969, and later the Vice Commander of the 17th Air Force. Also, he has served as the Defense Representative to Pakistan and the Director of the Air Force Inspection and Safety Center. In 1975 Gen. Yeager retired, but in 1980 he began consulting for the Northrop Corporation.

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PROBLEMS WITH THE GAME

TECHNICAL SUPPORT

LIMITED WARRANTY

PROBLEMS WITH THE GAME

TSRs, DEVICE DRIVERS, AND DOS SHELLS

TSR stands for Terminate and Stay Resident. A TSR is a program (such as SideKick®) that automatically executes itself when you start up your computer from a hard drive. TSRs are generally installed in your AUTOEXEC.BAT file. Device Drivers and DOS shells are also loaded automatically, and are usually installed in your CONFIG.SYS file.

These TSRs or Device Drivers sometimes interfere with games, or take up valuable memory the game may need, and it is generally recommended that you not run any such programs, Device Drivers, or shells when attempting to install or play a game.

DOS BOOT DISK

If you experience trouble during installation, unusual lockups, or other problems, we suggest you try starting up your system with a DOS boot disk. Below are the steps for creating a DOS boot disk. Please have a blank disk of the appropriate size for your **A:** drive, and follow these steps exactly.

1. Type **c:** and press ENTER.
2. Type **format a:/s** and press ENTER.

Note: If you are formatting low density disks on a high density drive, use the following commands:

5.25 inch low density disk: **format a: /s/4**

3.5 inch low density disk: **format a: /s/n:9 /t:80**

3. When the computer prompts you, insert a blank disk into drive A, then press ENTER.
4. Once the disk is finished formatting you will be asked whether you wish to format another. Answer **N** and press ENTER.

You now have a DOS boot disk. You can start your computer from this disk by inserting it into the A: drive and restarting your machine. Your computer will boot up to the A: prompt. This boot disk bypasses the AUTOEXEC.BAT and CONFIG.SYS on your hard drive and starts up your computer in as clean a DOS environment as possible. Try re-installing the software if you were having trouble doing so, or try starting the software from the drive and directory you installed to. If the software you are trying to run requires a sound driver or mouse driver, don't forget to load those before starting your game.

Note: For general information on optimizing your system, consult your MS-DOS manual.

IMPORTANT: Be sure to create backups of your CONFIG.SYS and AUTOEXEC.BAT files before you start editing them. Some editors automatically do this for you; check the manual of your editor for more information.

TECHNICAL SUPPORT

Technical Support for the enclosed titles can be reached as follows. Please have the following information ready when you call:

DOS version number, the content of a CHKDSK or MEM /C statement, mouse and driver type, graphics card, machine type, sound board and it's settings, CD-ROM drive type and extensions version, content of CONFIG.SYS and AUTOEXEC.BAT files, whether you are using Windows, Desqview or a DOS shell, error message displayed when the problem occurred (if any), and the system summary display (from pressing **#** during installation).

For these games: **Hong Kong Mahjong Pro** **Space Hulk**
Populous II **Yeager's Air Combat**
Seven Cities of Gold

Electronic Arts Technical Support
(415) 572-ARTS (572-2787)
Monday thru Friday 8:30 a.m. to 4:30 p.m. Pacific Time

For these games: **Savage Empire** **Wing Commander Academy**
Ultima VII **Shadowcaster**
Ultima Underworld

ORIGIN Product Support
(512) 335-0440
(512) 331-8559 Fax (24 hours)
Monday - Thursday 9:00 to noon and 1:00 to 5:00
Friday 9:00 to noon and 1:00 to 4:30, Central Time

ORIGIN Bulletin Board Service
(512) 331-4446
8-bit, no parity, 1 stop bit
Seven day/week, 24 hours

Online Services and Bulletin Boards

Many online services provide access to ORIGIN company news, product updates, release dates, technical support and game hints. In addition, ORIGIN has established its own electronic bulletin board as a customer service.

American Online. You can e-mail customer Support at ORIGIN CS or Marketing at OSI. To reach out Customer Support board in the Industry Connection, press **[K]** for "Go to Keyword." Then type ORIGINCS in the Keyword window. In addition to reading messages, you can download files from the "Origin Software Library." For membership information and a free starter kit, you can call America Online toll-free at 1-800-827-6364.

CompuServe. To reach our Customer Support board in the Game Publishers Forum, type GO GAMAPUB at any "!" prompt. Then select Origin Section (12). In addition to reading messages, you can download files from the "Library (Files)" menu. Our Customer Service department e-mail address is 76004,2612 (or you can post a message in the Origin Section). For membership information and a free starter kit, you can call CompuServe toll-free at

1-800-848-8199 and ask Representative #361 for your free introductory membership and \$15 usage credit.

GEnie. You can e-mail Customer Support at ORIGIN. To reach our Customer Support board in the Games RoundTable, Scorpio RT, type M805; at any "?" prompt. Then select Origin Systems at Category 16. In addition to reading the messages, you can download files from the "Games RoundTable Libraries." For membership information you can call GEnie toll-free at 1-800-638-9636.

ORIGIN BBS. The ORIGIN BBS has modem support of: 300/1200/2400/9600/14,400 bps with N,8,1. It is operational 24 hours a day, 7 days a week. Full support is provided. No membership is required and the only cost is any long distance charges that you may incur.

Internet Address. You can e-mail ORIGIN Customer Support at ORIGIN@AOL.COM or 76004.2612@COMPUSERVE.COM.

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