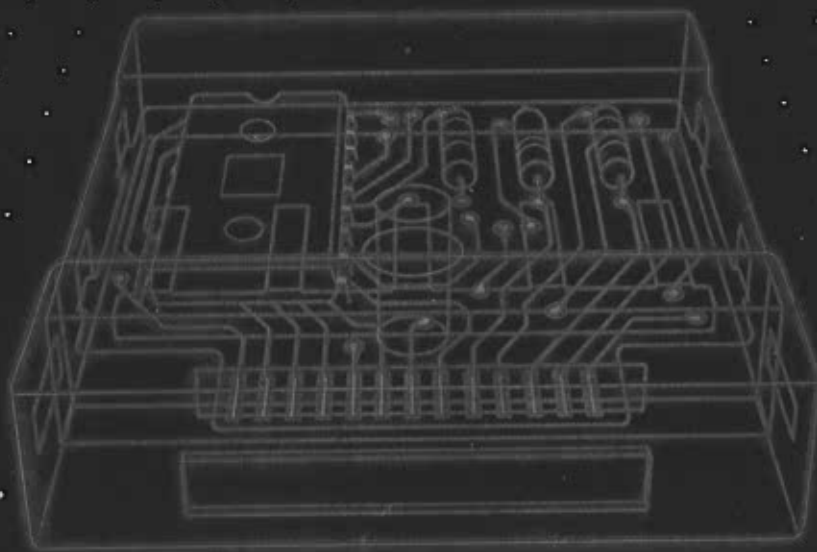TEXAS INSTRUMENTS **SOLID STATE SOFTWARE**™ **CARTRIDGE**

FOR THE COMPACT COMPUTER 40

GAMES I

TEXAS INSTRUMENTS **SOLID STATE SOFTWARE™ CARTRIDGE**

GAMES I

This book was developed by:
Steven W. Smith

Programs were written by:
Jeff T. Bailey
Lee M. Keith
Jerome H. Puckett
David M. Reece

With contributions by:
Charles D. O'Grady, Jr.
Robert E. Whitsitt, II

IMPORTANT NOTICE REGARDING PROGRAMS AND BOOK MATERIALS

TEXAS INSTRUMENTS MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, REGARDING THESE PROGRAMS OR BOOK MATERIALS OR ANY PROGRAMS DERIVED THEREFROM AND MAKES SUCH MATERIALS AVAILABLE SOLELY ON AN "AS IS" BASIS.

IN NO EVENT SHALL TEXAS INSTRUMENTS BE LIABLE TO ANYONE FOR SPECIAL, COLLATERAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING OUT OF THE PURCHASE OR USE OF THESE BOOK MATERIALS OR PROGRAMS AND THE SOLE AND EXCLUSIVE LIABILITY OF TEXAS INSTRUMENTS, REGARDLESS OF THE FORM OF ACTION, SHALL NOT EXCEED THE PURCHASE PRICE OF THE CARTRIDGE. MOREOVER, TEXAS INSTRUMENTS SHALL NOT BE LIABLE FOR ANY CLAIM OF ANY KIND WHATSOEVER AGAINST THE USER OF THESE PROGRAMS OR BOOK MATERIALS BY ANY OTHER PARTY.

Table of Contents

Introduction

The Games I Library is an interchangeable *Solid State Software*™ cartridge that contains six entertaining and easy-to-use games designed to give you many hours of fun and relaxation. The six games require no programming knowledge or experience to use. Other *Solid State Software* cartridges are available and can be obtained from most TI retailers or ordered directly from Texas Instruments.

Using this Manual

One section of this manual is devoted to each game. The most important part of each section is the User Instructions which explain the operation of the game. The User Instructions have a special format designed to provide a maximum of information with a minimum of words. The first few times that you play a game, you may wish to follow the User Instructions step-by-step. Once you are familiar with a game, you may only need to use these instructions as a reference. The extensive self-explanatory prompting built into the games minimizes the need to carry instructions with the computer.

Using Library Programs

The following sections discuss the Directory/Contents program and a few general guidelines for running the programs in this library.

Directory Program

The names of the games in this library are listed in the Directory program. It is accessed by entering **RUN "DIR"** or **RUN "CONTENTS"**. The program displays two names for each game—the long name which is the descriptive title of the game and the short name which is used to call the game for execution. For example, the long name for the first game in this library is BACKGAMMON and its short name is "BACK".

To run this game, you can use either of two methods. You can type **RUN "short name"** and press [ENTER], or you can press [RUN] when you are in the Directory program and the name of the program which you want to run is being displayed.

1

There are four editing keys used to display the names in the directory.

↑ displays the previous long name in the directory. If the first program name is being displayed, the Exit Program? prompt is displayed.

↓ displays the next long name in the directory. If the last program name is being displayed, the Exit Program? prompt is displayed.

→ displays the short name of a program if the long name is in the display. If a short name is in the display, the key is ignored.

← displays the long name of a program if the short name is in the display. If a long name is in the display, the key is ignored.

User Instructions—Directory/Contents

Select the Directory program by entering **RUN "DIR"**.

Step	Display	Procedure/Comment	Goto
1.	GAMES I	Cartridge name.	2
2.	Use Printer?	a. Accept printer usage by entering **Y**.	3
		b. Reject printer usage by entering **N**.	4
3.	Enter Device Name:	Enter output device name.	4
4.	Long program name	Displays long program name.	5
5.		a. To see short name of same program, press →.	6
		b. To see long name of previous program, press ↑.	4
		c. To see long name of next program, press ↓.	4
6.	Short program name	Displays short program name.	7

(continued)

2

(continued)

Step	Display	Procedure/Comment	Goto
7.		a. To see long name of same program, press ←.	4
		b. To see long name of previous program, press ↑.	4
		c. To see long name of next program, press ↓.	4

Note: When the name of the program which you want to run is being displayed by the Directory program, press [RUN] to begin execution of that program.

General Guidelines

To simplify the use of *Solid State Software*™ cartridges, TI has implemented a few easily remembered rules for program prompts. You should closely follow the User Instructions the first time you play a game. Thereafter, you should be able to play a game by following these simple guidelines.

• Use of the term "enter" has a specific meaning in the User Instructions within Compact Computer library programs. When you see this term, you are to key in the value or information which is indicated by the statement and then press [ENTER] to execute the entry. The [ENTER] key is also used to continue the program following certain prompts.

• The procedure for beginning execution of library programs is explained immediately before the User Instructions of each program. This procedure involves entering the [RUN] command followed by the short name for the program in quotation marks and any other information which is necessary for the execution of the particular program.

• When you enter a value which has fewer digits than the displayed value, space over the extra digits to insure that only the new value is entered.

• All commands and responses must be entered exactly as they are presented in the User Instructions of this library. **Note:** Commands and responses in this library are represented with upper case letters. However, the Compact Computer makes no distinction between upper or lower case letters so they may be used interchangeably.

• Prompts ending in a ? are questions requiring either yes or no responses. It is only necessary to enter a Y or N in either upper or lower case as a response.

- Displayed messages such as error conditions, instructions, and output require you to press [ENTER] to proceed to the next message or prompt. Certain prompts are paused before proceeding to the next prompt. Pressing [ENTER] after a paused prompt causes the next prompt to be displayed immediately.

- Any special handling of the response keys is described expressly in the introductions to each program, in the User Instructions, or by further prompting.

- To halt a running program, press [BREAK].

Using an Optional Printer

Certain programs within this library are enhanced by their ability to use the optional printer. If a printer is connected to the Compact Computer and you have responded Y to the Use Printer? prompt, a printed record is produced which contains information that will help you in playing the game.

Use of the printer is made possible by responding Y to the Use Printer? prompt and then entering the appropriate peripheral ID number in response to the Enter Device Name prompt. See the peripheral's *Owner's Manual* for the appropriate ID number.

Information on connecting the printer may be found in the peripheral's *Owner's Manual*.

Caring for Cartridges

Even though the cartridges for your Compact Computer are durable devices, you should handle them with care. Follow these precautions when handling the cartridges.

- **BE SURE THAT YOUR BODY IS FREE OF STATIC ELECTRICITY.** Prior to handling any cartridge, touch some metal object to discharge any static electricity you may be carrying.

- Keep the cartridge port cover secure on the computer to keep the cartridge port dust free.

- Keep the contact area of the cartridges clean. A buildup of debris or foreign particles on the contacts can impair their operation. Keep the cartridges stored either in the original container or in the computer's cartridge port.

4

Installing or Replacing a Cartridge

Both *Sold State Software*™ and *Memory Expansion*™ cartridges are installed in the cartridge port of the Compact Computer. Turn the computer off when installing or replacing a cartridge. Installing a cartridge while the computer is on may result in memory loss.

Use the following procedure when installing a cartridge.

1. Turn the computer off.

2. Slide the cartridge port cover back and remove it from the computer as shown in the diagram below.

3. If a cartridge is already installed, remove it by pushing the cartridge away from the keyboard until it is released. Lift the cartridge from the cartridge port.

4. Lay the cartridge to be installed in the cartridge port, with the cartridge name facing up and toward the keyboard.

5. Press firmly on the back of the cartridge and slide it toward the keyboard until the tabs on the cartridge enter the slots provided and the cartridge locks into place. Replace the cartridge port cover and check that its tabs also fit into the slots.

TABS MUST FIT
INTO SLOTS

Backgammon—"BACK"

Introduction

Backgammon, in one form or another, has existed almost as long as civilization itself. Though its exact origin is unknown, a reasonable guess would be India or China, two ancient cultures with a tradition of fascinating games and puzzles. Gaming boards resembling backgammon have been found among the ruins of the Sumerians (2600 B.C.) and in the tomb of King Tutankhamen (1500 B.C.). In fact, almost every civilization in the recorded history of Europe and Asia has played some version of the game.
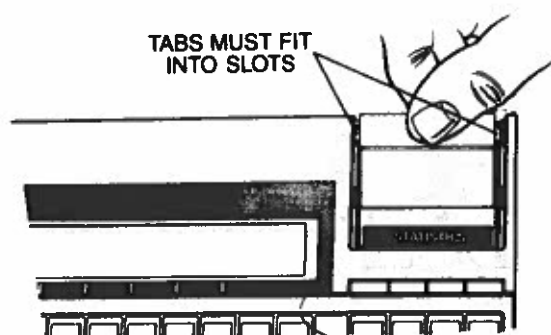
Around the tenth century, backgammon evolved into its present form and only two significant changes have occurred since then. In 1743, Edmund Hoyle wrote a treatise on the game standardizing the rules and strategy, and in the 1920's, an unknown American greatly increased the challenge of the game with the use of the doubling cube.

Though many of the civilizations that have enjoyed it have fallen to obscurity, backgammon has survived and grown enormously in popularity. The fundamentals of the game may easily be learned in thirty minutes, but the strategies beyond them have challenged great players for thousands of years.

Using the Manual

The only difference between this game and an actual game is that the computer rolls the dice. Nothing else has been changed. This manual attempts to cover the rules of backgammon as they apply to any two players on a standard backgammon board. Wherever possible, the two players are referred to as "player" and "opponent." The only time the computer is mentioned as a player is in specific sections where the players are referred to as "you" and the "computer."

Throughout the discussion, examples are included to help clarify particular rules. In these examples, you will be specified as playing white and the computer as playing black.

An actual board should always be set up when playing Backgammon with the computer, whether you are working through the following discussion or playing an actual game. With many combinations of possible plays, a board proves to be an invaluable aid in visualizing the actual position of the pieces.
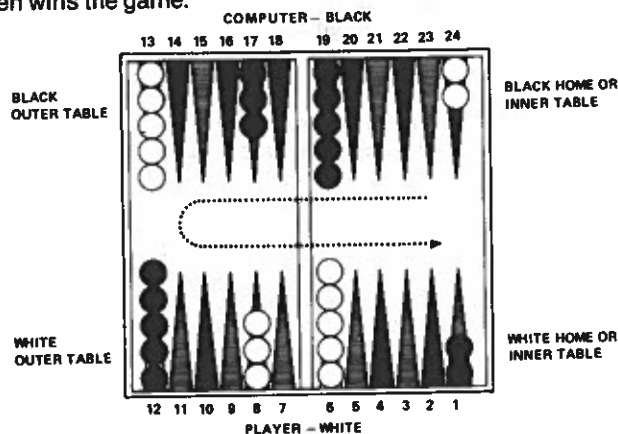
The Board

The diagram below shows the board divided into four sections: an inner and an outer table for both players. Each table is divided into six alternately colored triangular "points". (Though the colors may be any two contrasting colors, they are usually referred to as black and white.) The 24 total points are numbered consecutively in a clockwise direction beginning with the outside point in white's inner table. Since neither the points nor the inner and outer tables are labeled on an actual board, this information should be memorized as quickly as possible.

Object of the Game

Throughout the game, you are the white player. Your objective is to move your men in a counterclockwise direction (indicated by the arrow in the diagram) in order to bring all 15 of them into your inner table and then remove them from the board. The process of removing men from the board is called "bearing off."

The computer has the same objective, except that its men move in the opposite (clockwise) direction. The first player to bear off all his men wins the game.

8

Starting the Game

Set up the board for the start of play by positioning the 30 men (15 for each player) as shown in the diagram. To decide who goes first, the computer displays a random roll of one die for each player. The player with the higher number goes first, using the numbers shown on the two dice for the first move. If the players roll the same number, the computer continues until they are different. After the first move, the players alternate turns.

The Play

The computer displays a random roll of two dice each time a player's turn begins. This roll is displayed in the form "a.b" where a and b are the numbers 1 thru 6 from each die. The player can only move his men according to the numbers shown on his dice. Each of the two numbers rolled is considered individually, not in sum total. Thus, both numbers may be used to move one man or each may be used to move a different man. Either number may be used first. For example, a roll of 6.1 is considered a 6-and-1 move or a 1-and-6 move, but not a 7 move. You may move one man 6 points and another 1 point, or the same man 6 points and then 1 point (or 1 and then 6 points).

Rolling a Double

When the same number is rolled on each die, you are able to move as if you had rolled four dice and each die showed the same number. For example, if you roll a double 2, it is as if you had rolled four 2's. In this case, your possible moves are:

One man a total of 8 points.

Two men a total of four points each.

Two men two points each, and another man a total of four points.

One man a total of six points, and another man two points.

Four men two points each.

The general rules discussed in "The Play" section also apply when moving men on a doubles roll.
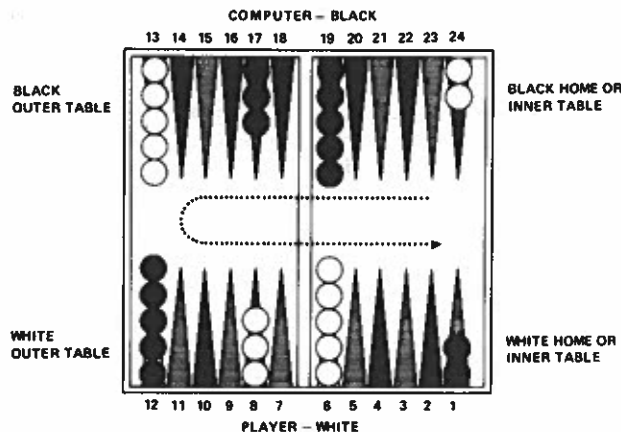
9

Touching Down

Since the two numbers rolled on the dice are considered individually, each turn must be considered as two **separate** moves (or more if a double is rolled). If the same man makes both moves, it "touches down" on a point and lands on another. For example, refer to the position in the diagram and consider that you have a 6-and-5 move. The man touches down on the 18 point and lands on the 13 point. Notice that you could not consider this a 5-and-6 move since the first move of five points would cause you to touch down on point 19 which is already occupied by your opponent.

The Points

A player may touch down or land on any open point. A point is open if it is

1. unoccupied,
2. already occupied by one or more of the player's own men,
3. occupied by only one of his opponent's men.

10

A point is blocked, or "made," when it is occupied by two or more of a player's men. When a player "makes" a point, his opponent may not touch down or land there. However, there is no limit to the number of men a player may have on a point he has already made.

Every point made by a player helps to hinder his opponent. If a player makes six points in a row (known as a "prime"), he has completely blocked his opponent from moving any men past those points, since any numbers rolled would touch down or land on a made point.

If a player has only one man on a point (called a "blot"), his opponent may touch down or land there. If this occurs, the opponent removes the player's man from the board and places it on the bar (see the discussion below of the bar). This is known as "hitting the blot."

Notice in the diagram that you (as white) have made the 6, 8, 13, and 24 points. If you rolled a 3.1, moving one man from the 8 to the 5 point and another man from the 6 to the 5 point would "make the 5 point." Remember, you may **never** move one of your men to a point made by your opponent.

Moves

The legal moves which a player may make are: moving his men around the board according the roll of the dice, entering his men from the bar, or bearing his men off the board. Within each of these legal moves, there are certain restrictions and limitations as discussed in this section.

Remember, a player may not touch down on a point made by his opponent even if the number on the other die would carry him to an open point. For example, if you roll a 6.5 and your opponent has made both the 18 and 19 points, it is impossible for you to move a man from the 24 point to the 13 point. You would have to touch down on either the 18 or the 19 point and both are blocked. However, if your opponent has made only one of these two points (either the 18 or the 19, but not both) you may use either the 5 or the 6 die first (5 if the 18 point is made or 6 if the 19 point is made) to touch down on the open point, and then use the other die to carry you to the 13 point.

Wherever possible, a player must use both numbers of his roll, even if this forces him to weaken his position. If one but not both of the two numbers rolled can be used, a player must use the larger wherever possible. If neither number can be used, play passes to the opponent.

The Bar

On an actual backgammon board, the bar is the middle strip separating the inner and outer boards. In this game, the bar is considered to be point 25 for white and point 0 for black.
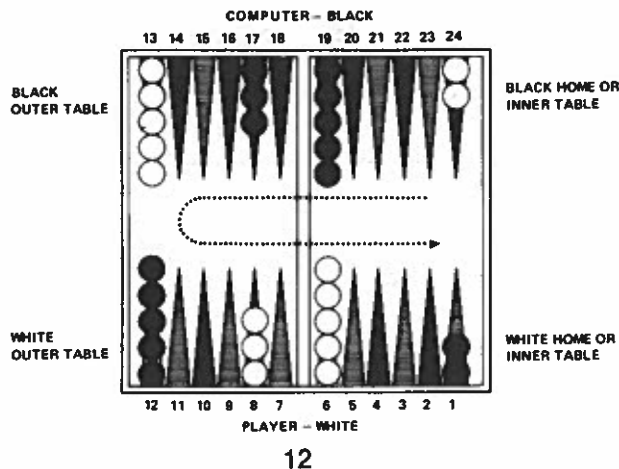
If the computer hits your blot, the computer sends your man "to the bar," where it remains until you re-enter it in the computer's inner table by a roll of your dice. Likewise, if you hit the computer's blot, the computer must re-enter in your inner table.

Both players may have men on the bar at the same time or one player may have several men on the bar. A player must re-enter all of his men from the bar before moving any of his other men.

Re-entering from the Bar

When you are re-entering men from the bar, remember when indicating your move that you are re-entering from point 25 if you are white and from point 0 if you are black.

A player may re-enter a man from the bar if either of the numbers in his roll corresponds to an open point in his opponent's inner table. If the player cannot re-enter a man, play passes to his opponent.

12

For example, if you (as white) roll a 1.4 and both the 24 and 21 points are open, you may re-enter on either point. However, if the 24 point is blocked, you must re-enter on the 21, and vice versa.

Whenever a player has made all six points in his inner table (a "prime"), his opponent is blocked from re-entering. Since all of his men must be re-entered from the bar before he can move any other men, the opponent loses his turn until a point in the player's inner table is opened.

Bearing Off

Once all 15 of a player's men are in the player's inner table, they may be removed from the board (known as "bearing off") according to the roll of the dice. For example, look at the position shown in the diagram. If you (as white) roll a 4.2, you may bear off one man from the 4 point and another from the 2 point. If you roll a double 4, you may remove four men from the 4 point.

A player must use his entire roll, or as much of it as possible, considering each die individually. Suppose you roll a number corresponding to an empty point. Obviously you cannot bear off a man from that point. If you have any men on a higher numbered point, you must move one of these men further into the inner table by the rolled number of points. However, if you have no men on a higher numbered point, you may bear off a man from the highest numbered point on which you do have a man. The same rule applies to doubles.

For example, suppose you roll a 4 and the 4 point is empty.

> If there are men on either the 5 or 6 point, or both, you must move one of these men four points further into the inner table.

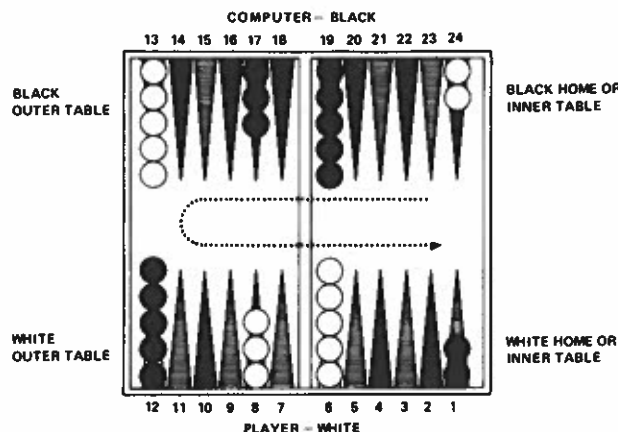> If both the 5 and 6 points are empty, you may bear off a man from the 3 point. If the 3 point is empty, you may bear off a man from the 2 point. And if the 2 point is empty, you may bear off a man from the 1 point.

At times, it is to your advantage to move a man further inside your inner table rather than bear off one. This is particularly true if your opponent has one or more men in your inner table.

Consider the situation where any of your men are on a higher numbered point than your opponent. If your opponent hits any of these outside men, you will have to re-enter from the bar and move all the way around the board before you can resume bearing off. Moving these men past your opponent (being careful not to leave a blot behind) protects them from attack. In other situations, you may want to move one man and bear off another.

Scoring

The first player to bear off all his men wins the game. A gammon (double score) is won if the loser has been unable to bear off any men. A backgammon (triple score) is won if the loser still has one or more men in the winner's inner table or on the bar. These scores are not tabulated by the computer, but you may easily keep track of them on paper.

14

Early Strategies

Since your opponent cannot touch down or land on any points you have made, make as many points as possible. Impede his progress by giving him as few points as possible to land on.

Notice in the diagram that two of your men (the back men) start the game on the 24 point, deep in your opponent's inner table. Try to get these two men off and running as soon as possible. Don't let them get blocked. Similarly, you should try to block your opponent's back men as long as possible.

Doubling

The doubling cube is used to increase the challenge of the game. The basic strategy of the doubling cube is that if a player feels he has enough of an advantage to win the game, he may double the value of the game. His opponent must either accept or resign. If the opponent feels that he has the advantage or that the certainty of the game is still in question, he should accept the double and continue play. Otherwise, he should resign.

Doubling is an alternating process in that once a player has doubled, he may not double again until his opponent has doubled. This prevents the value of the game from being run too high by the player who has the advantage.

Doubling may occur until the value of the game reaches 64 times its original value.

Use of the doubling cube is optional in the Backgammon game. If you wish to use the doubling cube, you should respond Y to the prompt Use Doubling Cube? In addition, you need to respond to the following periodic prompts as they appear.

1. When the computer offers to double, the prompt I Doubled, Accept? appears in the display. You should answer either Y or N. Remember, if you do not accept, you lose.

2. When you are eligible to double, the prompt Do you want to DOUBLE? appears in the display. You should answer either Y or N.

3. After you have doubled, the computer responds with either I Accept or I Resign.

4. At the end of the game, the computer displays the value of the game with the prompt This Game is Worth ##.

15

User Instructions—Backgammon

Select the Backgammon program by entering RUN "BACK".

Step	Display	Procedure/Comment	Goto
1.	BACKGAMMON	Program name.	2
2.	Use Doubling Cube?	a. Accept use of the doubling cube by entering Y.	3
		b. Reject use of the doubling cube by entering N.	3
3.	My Roll: #	Displays computer's initial dice roll.	4
4.	Your Roll: #	Displays player's initial dice roll.	5
5.		a. If player's roll is larger.	6
		b. If computer's roll is larger.	13
6.	Your Roll: #.#	Displays your roll. Proceed by pressing [ENTER].	7
7.	Enter Move (From.Roll): ##.#	a. Enter desired move ("From" is the point where the man is to be moved from and" Roll" is the number of points that the man is to be moved as rolled on the dice).[1]	10
		b. Enter B to view board.	8
		c. Enter R to view roll.	6
8.	Point(##)= ##	Displays board position. Proceed after each point by pressing [ENTER].	9
9.	Bar= #.#	Displays the Bar.	6
10.	Your Move: ##.#	Displays move entered.	11
11.		a. If all of white's men are borne-off.	17
		b. If a white man remains on the board.	12
12.		a. If additional moves remain to be entered.	7
		b. If last move has been entered.	13
13.	My Roll: #.#	Displays computer's roll.	14

(continued)

16

(continued)

Step	Display	Procedure/Comment	Goto
14.	My Move: ##.#	Displays computer's move. Proceed by pressing [ENTER].	15
15.		a. If all of black's men are borne-off.	18
		b. If a black man remains on the board.	16
16.		a. If additional moves remain to be displayed.	14
		b. If last move has been displayed.	6
17.	You Win!!	Displays when you win. Proceed by pressing [ENTER].	19
18.	I Win!!	Displays when computer wins. Proceed by pressing [ENTER].	19
19.	Exit Program?	a. Exit program by entering Y.	STOP
		b. Begin another game by entering N.	2

Note

1. When you are re-entering from the bar, the From move should be 25 for white and 0 for black.

Blackjack—"BJACK"

Experience the excitement of the Las Vegas casinos with this unique version of the popular game of Blackjack. The dealer is none other than your Compact Computer which is ready and willing to take your "money." See how long you can keep from going broke against the clever Compact Computer!

The object of Blackjack is to draw cards until the value of your hand is closer to 21 than the value of the dealer's hand—without going over 21. All numbered cards count as their face value, facecards (jacks, queens, and kings) are ten, and aces are your choice of one or eleven. A regular deck of 52 cards is used, and the deck is not reshuffled until all cards are used.

Play starts with the dealing of two cards each to the dealer and the player. The player goes first, taking as many "hits" (cards) as necessary to get as close to 21 as possible. When the player stops, the dealer takes hits until his hand goes over 16, where he must stop. Then the hands are compared to see who wins. If the player goes over 21 (known as "busting"), or has one of the special hands explained below, the dealer does not play. When the entire deck has been dealt out, the remaining cards are reshuffled and play continues.

A bet is placed in whole dollars on every hand by the player. This bet is the amount that the player will pay the dealer should the player lose or the amount the dealer will pay the player should the dealer lose. There are a few exceptions to this rule that serve to make Blackjack a very exciting game. They are as follows.

Player's Hand	Payoff
You are dealt a 21	Receive twice your bet
Any 5 cards less than 21	Receive twice your bet
6,7,8	Receive twice your bet
Any 6 cards less than 21	Receive four times your bet
7,7,7	Receive four times your bet

18

In addition to these, there are two instances where your winnings (or losses) can be increased. The first is called "going two down." Here you can choose to split your first two cards, if they are the same, into two separate hands. Each hand is played for the same bet as the original hand and uses the same rules as a single hand. This gives you the opportunity to double your take, or double your losses. The second is called "one down for double." If you are dealt a hand with a value of 11 in any combination, you are given the opportunity to double your bet and get one more card, with hopes of getting a good hand. The card may be a low one, in which case you may lose double, or it may be high enough to beat the dealer—for twice your bet!

As the player, you may take as many cards as you want, and stop whenever you want. The dealer, however, must take a card ("hit") if the value of his hand is 16 or less, and he must stop if the value of his hand is 17 or more. This can work to your advantage since the dealer must stop when he has more than 16 even if he knows you have more than him.

You start with $1000 and play until you want to stop or until you go broke. The dealer's first card is not shown during play until it is the dealer's turn to take "hits." If anyone goes over 21 it is called a "bust." If the player busts, the dealer always wins since the dealer wins all ties ("pushes"), and the worst that the dealer can do is bust. Remember, the one who gets nearest to 21 without going over, wins.

Don't underestimate the dealing abilities of your Compact Computer. It's been taught by the best casino dealers in Las Vegas. Good Luck! You'll need it.

User Instructions—Blackjack

Select the Blackjack program by entering RUN "BJACK".

Step	Display	Procedure/Comment	Goto
1.	BLACKJACK	Program name.	2
2.	You have $#### left	Displays the amount of money you have left. Proceed by pressing [ENTER].	3
3.	Enter your bet:	Enter the amount of your bet. Only bets that are whole numbers less than or equal to the amount you have left are valid.	4
4.		a. At beginning of game or if all cards have been dealt.	5
		b. Otherwise.	6
5.	Shuffling the deck...	Displays when cards are being shuffled.	6
6.	Hand #	Displays only when "going two down." Proceed by pressing [ENTER].	7
7.	Dealer shows	Displays the dealer's hand less the "down" card. Proceed by pressing [ENTER].	8
8.	You have	Displays player's hand. Proceed by pressing [ENTER].	9
9.		a. If player gets 21 with first two cards dealt.	20
		b. If player gets 11 with first two cards dealt.	11
		c. If player gets a pair with first two cards dealt.	12
		d. If value of hand is over 21.	10
		e. Otherwise.	13
10.	You busted!	Displays only if player's hand exceeds 21. Proceed by pressing [ENTER].	20
11.	One card for double?	a. Accept one card for double by entering Y.	14
		b. Reject one card for double by entering N.	13

(continued)

20

(continued)

Step	Display	Procedure/Comment	Goto
12.	Go two down?	a. Accept going two down by entering Y.	6
		b. Reject going two down by entering N.	13
13.	Hit?	a. Accept another card by entering Y.	6
		b. Reject getting another card by entering N.	14
14.		a. If the first hand of a "two down" hand is completed.	6
		b. Otherwise.	16
15.	Dealer has	Displays dealer's entire hand.	16
16.		a. If the value of the dealer's hand is less than 17.	18
		b. If the value of the dealer's hand is greater than 16 but less than or equal to 21.	19
		c. If the value of the dealer's hand is over 21.	17
17.	Dealer busted!	Displays when dealer goes over 21.	20
18.	Dealer hits	Displays when dealer takes a hit.	15
19.	Dealer stays	Displays when dealer stops taking cards.	20
20.	Dealer has ##	Displays the numeric value of the dealer's hand. Proceed by pressing [ENTER].	21
21.	You have ##	Displays the numeric value of the player's hand. Proceed by pressing [ENTER].	22
22.	Another hand?	a. Accept another hand by entering Y.	2
		b. Reject another hand by entering N.	23
23.	You had $#### left	Displays the amount of money you can take home. Proceed by pressing [ENTER].	24
24.	Play again?	a. Play again by entering Y.	2
		b. Exit program by entering N.	STOP

Hammurabi—"HAMMUR"

You are Hammurabi, ruler of the ancient kingdom of Sumer. Your object is to successfully rule for a ten-year term. If you are a good ruler, Sumer will prosper and you will be asked to serve another term in office. If your judgment causes Sumer to fail, the population will throw you out of office.

Each year, you are given a summary of your activities. This summary lists information concerning the amount and trading value of the land you own, the number of people living in your kingdom, the amount of grain available to feed your people, and other necessary information which you need to know to make decisions about your kingdom's prosperity. You can review an update of this summary by entering ? when you are asked to enter information concerning managing your kingdom.

You are asked to decide upon buying and selling land, feeding your people, and planting crops. (Hint: Under normal circumstances, the following information may serve as a guideline for ruling Sumer. It takes one-half bushel of grain to plant an acre; it takes 20 bushels of grain to feed one person for one year; and one person can plant ten acres.) However, as in real life, events occur which are beyond your control. You will be faced with fluctuating land prices, good and bad harvests, rats infesting your stores, plagues, and wars. Your success depends on your ability to react to unexpected events and to make rational decisions.

22

User Instructions—Hammurabi

Select the Hammurabi program by entering RUN "HAMMUR".

Step	Display	Procedure/Comment	Goto
1.		An introductory message is scrolled across the display.	2
2.	Hammurabi, I beg to report	Begin previous year's summary.	3
3.	Year #	Displays the number of the previous year.	4
4.	People starved: #	Displays the number of people who starved last year.	5
5.	Newcomers: #	Displays the number of people who moved into Sumer last year.	6
6.	Current population: #	Displays the current population of Sumer.	7
7.	We own # acres	Displays the number of acres which Sumer has to plant or trade.	8
8.	We harvested # bushels/acre	Displays the number of bushels per acre that were harvested last year.	9
9.	Rats ate # bushels	Displays the number of bushels that the rats ate.	10
10.	Bushels in storage: #	Displays the total number of bushels in storage. This is the amount of grain which you have available to feed your people, plant new crops, and buy land.	11
11.	Land value: # bushels/acre	Displays the value of the land in bushels per acre.	12
12.	Buy land?	a. Buy land by entering Y.	13
		b. Display next option by entering N.	14
13.	Enter Acres to Buy: #	Enter number of acres to buy.	16
14.	Sell land?	a. Sell land by entering Y.	15
		b. Display next option by entering N.	16
15.	Enter Acres to Sell: #	Enter number of acres to sell.	16

(continued)

23

Step	Display	Procedure/Comment	Goto
16.	Enter Bushels for Food: #	Enter number of bushels to feed your people.	17
17.	Enter Acres to Plant: #	Enter number of acres to plant.	18
18.		a. If 10-year term not complete.	2
		b. If 10-year term complete.	19
19.	*****# YEAR SUMMARY*****	Begin decade summary.	20
20.	Total Deaths: #	Displays the number of people who died because of war or starvation.	21
21.	Yearly average: #%	Displays the percent of the population who died.	22
22.	Bushels per person: Beginning: 238 Ending: #	Displays the average number of bushels per person at the beginning and end of your term.	23
23.		At this point, an evaluation of your performance is scrolled across the display, and you are asked if you would like to either serve another term or play another game.	

Notes

1. At various times during your term, you can be thrown out of office for errors in judgment which had a detrimental effect on Sumer.

2. During the yearly summary, you will be appraised of any unexpected events such as war or plague which occurred during the past year.

3. If war or plague strikes during the year, you will be informed of the event and asked to make decisions about how to deal with the crisis.

Planetary Lander—"LANDER"

You are the commander of the new ANTARES IV spacecraft. Your mission is to safely land a team of scientists on the surface of any planet in the Solar System. Be warned that this is not merely a game, but a "simulation" of probable landing conditions on the various planets (assuming none of them have atmospheres) including compensation for different gravitational fields. The following table indicates the gravitational fields of the planets.

Planet	Gravity (ft/sec)
Sun	910.84
Mercury	12.27
Venus	29.08
Earth	32.2
Moon	5.26
Mars	12.24
Jupiter	85.1
Saturn	37.32
Uranus	35.74
Neptune	38.96
Pluto	0.887

The ANTARES IV weighs 16,000 pounds on Earth when fully fueled, has a fuel capacity of 15,000 pounds, and has two clusters of engines that can develop up to an unheard of (for their size and weight) 100,000 pounds of thrust! It expels up to 320 pounds of fuel each second at a velocity of 10,000 feet/sec. As you use your fuel, the ANTARES IV's mass decreases so that deceleration and movement become easier.

The ANTARES IV spacecraft has as its guidance computer the first generation of the newly heralded "interactive" systems (named CAPCOM in reference to the days when communication was from a space *CAP*sule directly to ground *COM*munications) where the pilot and computer are in direct communication. This allows you to concentrate on the task of landing rather than having to watch all of the various displays and readouts normally found in the cabin of a spacecraft.

To assist you in making a perfect "four-point" landing, a simplified array of computer controlled indicators tell you your height above ground, distance from the target, direction to the target, vertical velocity, horizontal velocity, attitude relative to the planet's surface, amount of thrust being applied, and fuel remaining. The ANTARES IV Data Console is updated approximately every second and is laid out as follows.

◄   ►

```
        HEIGHT – DISTANCE – VERTICAL – HORIZONTAL – ATTITUDE – THRUST
                 FRM TGT    VELOCITY    VELOCITY    OF SPCFT   APPLIED

   error                                                                          LOW
               ▼         ▼         ▼          ▼          ▼        ▼
```

The ◄ and ► symbols are CAPCOM's way of telling you in which direction the target is located relative to your present position. When both indicators are on, the ANTARES IV is directly over the target.
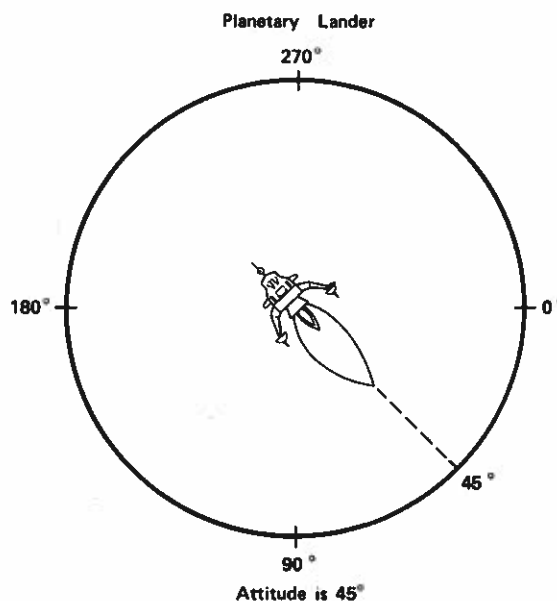
Fuel remaining is displayed by the six indicators at the bottom of the Data Console. When all of the indicators are on, the ANTARES IV is full. As fuel is used, CAPCOM monitors the main fuel tank and turns off the rightmost indicator for each 1/6 tank used. When all fuel indicators are off, you have a reserve tank of approximately 1/6 of a full tank of fuel left. CAPCOM warns you of this condition with an audio warning (beep) and a visual warning (the "LOW" fuel indicator flashes). The "error" indicator appears when the ANTARES IV's entire complement of fuel has been expended. Should this happen, CAPCOM is programmed to keep the pilot updated on the progress of the free fall up to the time of impact.

The HEIGHT indicator tells you your distance above the surface in feet. DISTANCE is the horizontal distance in feet that the spacecraft is from the target. To determine in which direction the target is located, look at the ◄ and ► indicators.

VERTICAL VELOCITY is measured in feet/sec where negative numbers mean descent and positive numbers mean ascent. HORIZONTAL VELOCITY is measured in feet/sec with positive readings referring to motion to the right and negative numbers to the left.

26

THRUST is the current thrust of the ANTARES IV's engines in pounds. The effect of any given thrust is different depending on the planet's gravitational field and the mass of the spacecraft. On Earth, 1000 pounds of thrust accelerates a fully loaded ANTARES IV 2 feet/sec/sec in the opposite direction of the engines.

ATTITUDE is the orientation of the ANTARES IV relative to the surface of the planet. Zero (0) degrees indicates that the engines are pointing to the right; at 90 degrees, they are pointing downward; at 180 degrees, they are pointing to left; and at 270 degrees, they are pointing upward. Note that this attitude refers to the position of the engines, not the cabin.

Planetary Lander

Attitude is 45°

At any time during a flight, asterisks (*) may appear in one or more of the fields of the Data Console. Don't be alarmed. This is CAPCOM's way of conserving space on the console by suppressing numbers that are too large to be displayed in their allotted space. By watching the other descent parameters, you should be able to ascertain your position until the number becomes displayable again.

The ANTARES IV is also the first landing vehicle to incorporate an "ABORT" feature into the CAPCOM computer. To initiate the computer assisted abort, press and hold the space bar. This will cause CAPCOM to take control of the ANTARES IV and do its best to halt descent with the remaining fuel.

There are four controls on the ANTARES IV. They are the four arrow keys above the numeric keypad. The left arrow rotates the ANTARES IV counterclockwise, while the right arrow rotates it clockwise. The up and down arrows are the ANTARES IV's throttle and increase or decrease, respectively, the thrust of the SDE-2-B engines.

User Instructions—Planetary Lander

Select the Planetary Lander program by entering RUN "LANDER".

Step	Display	Procedure/Comment	Goto
1.	PLANETARY LANDER	Program name.	2
2.	CAPCOM LOGON INITIATED	The CAPCOM computer is started.	3
3.	Where to Land, Commander?	CAPCOM asks which planet to land on. Displays for two seconds.	4
4.	The Sun?	a. Land on the Sun by entering Y.	15
		b. Display next option by entering N.	5
5.	Mercury?	a. Land on Mercury by entering Y.	15
		b. Display next option by entering N.	6
6.	Venus?	a. Land on Venus by entering Y.	15
		b. Display next option by entering N.	7
7.	Earth?	a. Land on Earth by entering Y.	15
		b. Display next option by entering N.	8
8.	The Moon?	a. Land on the Moon by entering Y.	15
		b. Display next option by entering N.	9
9.	Mars?	a. Land on Mars by entering Y.	15
		b. Display next option by entering N.	10
10.	Jupiter?	a. Land on Jupiter by entering Y.	15
		b. Display next option by entering N.	11
11.	Saturn?	a. Land on Saturn by entering Y.	15
		b. Display next option by entering N.	12
12.	Uranus?	a. Land on Uranus by entering Y.	15
		b. Display next option by entering N.	13
13.	Neptune?	a. Land on Neptune by entering Y.	15
		b. Display next option by entering N.	14

(continued)

Step	Display	Procedure/Comment	Goto
14.	Pluto?	a. Land on Pluto by entering Y.	15
		b. Repeat options by entering N.	4
15.	Enter Distance:	Enter initial distance from target in feet.	16
16.	Enter Horizontal Speed:	Enter initial horizontal speed in feet/sec.	17
17.	Enter Vertical Speed:	Enter initial vertical speed in feet/sec.	18
18.	Enter Height:	Enter initial altitude in feet.	19
19.	Enter Fuel:	Enter initial fuel allocation in pounds.	20
20.	Fueling Antares...	ANTARES IV being fueled up. Fuel indicators come on.	21
21.	Good Luck Commander!	CAPCOM's show of emotion. Displays for three seconds.	22
22.	##### #### ##### #### ### #####	At this point, the Data Console comes alive, and control of the ANTARES IV is with the pilot.	23
23.		a. Use the four arrow keys to land.	24
		b. Abort a landing by pressing and holding the space bar.	26
24.		ANTARES IV reaches the surface.	25
25.		a. If velocity is less than 40 ft/sec.	28
		b. If velocity is greater than 40 ft/sec.	30
26.	****CAPCOM ABORT****	CAPCOM takes control of the ANTARES IV and tries to halt descent.	27
27.		a. If abort is successful.	33
		b. If abort is unsuccessful, CAPCOM will continue to display data until impact.	24
28.	Landing Velocity=	Displays landing velocity in ft/sec. Proceed by pressing [ENTER].	29

Step	Display	Procedure/Comment	Goto
29.	Excellent Landing, Commander!	CAPCOM congratulates pilot. Proceed by pressing [ENTER].	32
30.	Crash Velocity=	Displays crash velocity in ft/sec. Proceed by pressing [ENTER].	31
31.	New commander reporting...	Displays message. Proceed by pressing [ENTER].	32
32.	Target missed by	Displays distance from target in feet. Proceed by pressing [ENTER].	33
33.	Try again, Commander?	a. Accept another flight by entering Y.	3
		b. Exit program by entering N.	34
34.	CAPCOM LOGOFF INITIATED	CAPCOM program cancelled.	STOP

Stocks and Bonds—"STOCK"

You are about to enter the world of high finance. You will be assisted in your financial transactions by MOSTMAC, your MObile STock MArket Computer. At the beginning of your venture, MOSTMAC asks how many people are in your party (you may have a maximum of seven players) and how many years this venture will last.

At the start of each year, MOSTMAC lists the stock number, price per share, stock name, and yield for each of the nine stocks and one bond which are available. He then displays the stock holdings, net worth, and cash position of the first player in your party. This player is asked if he wishes to buy or to sell stocks. If the individual wants to view the stocks again, he can do so by entering ? in response to either the Buy Stock? or Sell Stock? prompt. When MOSTMAC asks how many shares the player wants to buy or sell, the maximum number of shares which that player can trade is displayed.

After the first player has completed his or her transactions, the process is repeated for the next player. After the last player has had a chance to trade stocks, MOSTMAC proceeds to the start of the next year. At the end of the last year, MOSTMAC lists the net worth and net gain for each of the participants. The player with the greatest net worth is the winner.

The price per share of each stock is revised at the end of each year; however, the bond price per share never fluctuates. The yields for all stocks and the bond remain as set at the beginning of the venture unless the price per share of any one stock falls below $20. In this case, the yield drops to 0% and no dividends are paid. If the price rises above $20 again, a new yield takes effect for that stock. If the price per share rises above $999, the stock is split. The lower the yield, the more volatile the stock price. Each player starts with $5000. Good Luck, and may you all become millionaires.

32

User Instructions—Stocks and Bonds

Select the Stocks and Bonds program by entering RUN "STOCK".

Step	Display	Procedure/Comment	Goto
1.	STOCKS AND BONDS	Program name.	2
2.	Use printer?	a. Obtain printout of stock situation by entering Y.	3
		b. Have all information sent directly to your display by entering N.	4
3.	Enter Device Name:	Enter the name of your output device.	4
4.	Number of Players:	Enter the number of people in your party.	5
5.	Number of Years:	Enter the number of years you will be playing.	6
6.	******** Year # ********	Displays the number of the year you are beginning. Proceed by pressing [ENTER].	7
7.	# $/Share NAME YIELD	Displays the stock number, price per share, stock name, and yield for each of the stocks and for the one bond. Proceed by pressing [ENTER].	8
8.		a. If end of game.	25
		b. If not end of game.	9
9.	Player #	Displays the player number. Proceed by pressing [ENTER].	10
10.		a. If player owns no stock.	12
		b. If player owns stock.	11
11.	# Shares NAME	Lists the number of shares of each stock the player holds. Proceed by pressing [ENTER].	12
12.	Net Worth ######.##	Displays the player's net worth. Proceed by pressing [ENTER].	13
13.	You Have ######.## cash	Displays the player's cash on hand. Proceed by pressing [ENTER].	14

(continued)

33

Step	Display		Procedure/Comment	Goto
14.			a. If you own stock.	15
			b. If you do not own stock.	19
15.	Sell Stock?		a. If you want to sell stock, enter Y.	16
			b. If you do not want to sell stock, enter N.	19
16.	Stock Number:		Enter the number of the stock you are selling.	17
17.	# of Shares to Sell:		Enter the number of shares you want to sell. The maximum number is displayed.	18
18.	You Have	#####.## cash	Displays the cash on hand after the transaction. Proceed by pressing [ENTER].	14
19.			a. If the amount of cash you have is greater than or equal to the lowest stock price.	20
			b. If the amount of cash you have is less than the lowest stock price.	24
20.	Buy Stock?		a. If you want to buy stock, enter Y.	21
			b. If you do not want to buy stock, enter N.	24
21.	Stock Number:		Enter the number of the stock you are buying.	22
·22.	# of Shares to Buy:		Enter the number of shares you want to buy. Displays the maximum number.	23
23.	You Have	#####.## cash	Displays the cash on hand after the transaction. Proceed by pressing [ENTER].	19
24.			a. If last player.	7
			b. If not last player.	9
25.	Player #		Displays player number. Proceed by pressing [ENTER].	26
26.	Net Worth	#####.##	Displays the net worth of player N. Proceed by pressing [ENTER].	27

Step	Display		Procedure/Comment	Goto
27.	Net Gain	#####.##	Displays the net gain of player N. Proceed by pressing [ENTER].	28
28.			a. If last player.	29
			b. If not last player.	25
29.	Play Again?		a. Play the game again by entering Y.	30
			b. End game by entering N.	STOP
30.	New Game?		a. Start a new game by entering Y.	4
			b. Continue same game by entering N.	5

Hunt The Wumpus—"WUMPUS"

The Wumpus lives in a cold, dark cave of 20 rooms. You are a hunter with three crooked arrows trying to find and shoot the Wumpus. Each room has three tunnels leading to adjacent rooms, but some may be connected to themselves creating dead ends. (**Note:** The rooms in the cave are not designed in a grid format. Therefore, the room numbers which are used to designate the rooms have no relationship to numbers or locations on a normal graph. For example, rooms which have consecutive numbers are not necessarily adjacent rooms.)

As you wander through the cave, two rooms contain Super Bats that carry you to a randomly selected room if you stumble upon them. There are also two rooms with bottomless pits where you may fall to your death.

If the Wumpus is hiding in an adjacent room, you will smell a great stench. If you should happen to wander into the same room as the Wumpus, it lets out a great roar and either moves to an adjacent room or eats you. The Wumpus also moves to another room each time you shoot an arrow. But be careful—he may move into your room!

Each time you enter a room, you can shoot one of your arrows with the arrow flying through up to five connecting rooms, depending on how many you select. After you select the initial room where you want the arrow to go, the rooms which are adjacent to that room are displayed. You must then select one of those rooms as the next room for the arrow to go. Remember, the rooms are not arranged in a grid so you do not know which rooms are adjacent to each other except for the ones that are displayed together. Continue this process for as many rooms as you entered for the arrow to fly into.

Hint: If a room number appears twice out of the three displayed choices, it is a dead-end that connects to itself. Keep track of the adjacent rooms on a piece of paper, noting where the bats, pits, and Wumpus are located as you encounter them.

If the arrow enters your room, it shoots you and you lose; if it enters the Wumpus' room, you win! When you run out of arrows (the number of arrows left is shown by the small triangular indicators at the bottom of the display), you can escape by finding your way back to room 0, where you can escape from the Wumpus and begin a new game.

Earthquakes happen occasionally, rearranging the tunnels between rooms but leaving the bats, pits, and Wumpus in the same rooms as they were before the earthquake.

User Instructions—Hunt the Wumpus

Select the Hunt the Wumpus program by entering **RUN "WUMPUS"**.

Step	Display	Procedure/Comment	Goto
1.	HUNT THE WUMPUS	Program name.	2
2.	Wumpus finding a comfy room...	Corridors, bats, pits, and Wumpus being placed into cave.	3
3.	What a stench!	Displayed if the Wumpus is in an adjacent room. Proceed by pressing [ENTER].	4
4.	Ea rth qu ake! ! !	An occasional earthquake will rearrange the cave corridors.	5
5.	It's drafty!	Displayed if a bottomless pit is in an adjacent room. Proceed by pressing [ENTER].	6
6.	Watch out for bats!	Displayed if bats are in an adjacent room. Proceed by pressing [ENTER].	7
7.	Bats carried you off!	Displayed if you enter a room that contains bats. Proceed by pressing [ENTER].	8
8.	You are now in room XX	Displayed when bats drop you in another room. Proceed by pressing [ENTER].	9
9.	AAAHHhhh h hh h hh h h hh...	Displayed if you enter a room with a bottomless pit. Proceed by pressing [ENTER].	24
10.	RRRRRRrrrr!	Wumpus growls if you enter the same room it occupies. Proceed by pressing [ENTER].	11
11.		a. If Wumpus moves to different room.	13
		b. If Wumpus stays in same room.	12
12.	Munch, munch, MUNCH!	Wumpus eats you. Proceed by pressing [ENTER].	24
13.		a. If you are out of arrows.	14
		b. If you still have arrows.	15

(continued)

TEXAS INSTRUMENTS CONSUMER SERVICE FACILITIES

U.S. Residents:
Texas Instruments Service Facility
P.O. Box 2500
2305 North University Avenue
Lubbock, Texas 79415

Canadian customers only:
Geophysical Services Incorporated
41 Shelley Road
Richmond Hill, Ontario, Canada L4C5G4

Consumers in California and Oregon may contact the following Texas Instruments offices for additional assistance or information.

Texas Instruments Consumer Service
831 South Douglas Street
El Segundo, California 90245
(213) 973-1803

Texas Instruments Consumer Service
6700 Southwest 105th Street
Kristin Square
Suite 110
Beaverton, Oregon 97005
(503) 643-6758