

MICRO VIDEO TM

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THE MYSTERIOUS MANSION ADVENTURE

The Mysterious Mansion is a spine-tingling successor to the Troll Hole Adventure. You wake up alone in an old, unfamiliar house. A ghastly voice speaks out..."You have until midnight to escape or..." The voice breaks into maniacal laughter and fades away. Witches, vampires, ghosts, and skeletons are your hideous playmates in the haunted manor. What can you do with a skull? What secret does the Old Witch hide? Can you decipher the cryptic phrase in the old book? How do you kill the undead? These and many more mind-boggling puzzles will make you scream bloody murder!

LOADING THE PROGRAM: Insert the program cassette into the tape drive. Depress the RESET button, then press the "L" key to turn the tape motor on. Rewind the tape if necessary using the REWIND cassette button, then depress the READ cassette button to load the program into the computer.

PLAYING THE GAME: When the program first loads, the computer asks if you have a partially completed game on tape that you want to reenter ("SAVED GAME?") If you have saved an incomplete game on tape and wish to reload it, see "RE-ENTERING SAVED GAME" in these instructions. If you are playing for the first time or if you have not saved a game on tape, type "N" to proceed.

The objective of this adventure is to escape from the mysterious mansion. To do so, you must solve a series of puzzles. Unlike its predecessor, this adventure has no treasures to recover. Your only goal is to get out alive. The hitch is that you have a time limit--you are allowed only 240 moves in any one game session. Everything you do consumes time, even examining an object you find or checking a room's inventory. If you are still in the house at the stroke of midnight, you're a dead duck!

At the top of your screen, the computer describes your current location in the manor, and the directions in which you can exit that location. There are six directions in which you can move: north (N), south (S), east (E), west (W), up (U), and down (D). You will not, however, always be able to move in all six directions from all rooms in the mansion. For example,

BEDROOM
N,E,U,D

means that you are in the bedroom, and you can exit by typing the letter N, E, U, or D, followed by a "CR".

On the lower portion of your screen, the computer tells you what it sees and asks you for further instructions. For example, you might see

BENCH
CUP
ARCHWAY

WHAT NOW?

At the WHAT NOW? prompt, you enter instructions for tasks you want the computer to perform. In addition to the directions codes described above, you can give it simple one- or two-word commands, concluded by pressing "CR". For example, you might direct your computer

WHAT NOW?TAKE CUP

If you type in a command the computer does not understand, it will respond

WHAT?
WHAT NOW?

Sometimes you can move not only in the direction listed on the top of the screen, but to a specific place by typing GO and the place. For example,

WHAT NOW?GO ARCHWAY

If a room contains many items, part of the description may scroll off the screen. If this happens and you want to review the room contents again, tell your computer to take a look around:

WHAT NOW?LOOK

If you can't remember what you're currently carrying, ask to see your inventory by typing the letter "I" and a "CR".

WHAT NOW?I

CARRYING

CUP

Press the "CR" key to return to game play after an inventory check.

You can (and should) examine things you find more closely by telling your computer to EXAMINE or LOOK at them.

WHAT NOW?LOOK BENCH

IT IS VERY HEAVY
WHAT NOW?

At any time during the game, you can find out how much time you've used by asking for the time.

WHAT NOW?TIME

YOU HAVE ONLY 113 MOVES TILL MIDNIGHT

Remember that checking the time consumes a move. The computer will automatically advise you of the time at 180, 120, and 60 moves from midnight.

The computer reads only the first three letters of any word you type, so you may abbreviate your commands if you wish to save typing. For example,

WHAT NOW?EXA BEN

is the same as typing EXAMINE BENCH or LOOK BENCH.

Your computer recognizes more than 100 words. If it does not understand an instruction you give it, try to find different words to express the task. Part of the fun of an adventure game is figuring out how to communicate with your computer. Some basic words it understands are LOOK, EXAMINE, TAKE, GET, DROP, GO, and READ.

If your computer recognizes the words in your instruction, but is not able to perform the task, it will respond

WHAT NOW?TAKE BENCH

I CAN'T

Its response may have one of two meanings. Generally, it is something that cannot be done. However, it may be that you do not have the necessary tools to perform the task or that you must solve other puzzles first.

HINT SHEET: A special Mysterious Mansion Hint Sheet is included with these instructions. We've placed it in a sealed envelope to discourage you from using it. Have fun with the adventure by letting your imagination run loose to find solutions to the puzzles. It's far more rewarding to have an answer dawn on you after you've mulled the situation over for awhile than it is to run to the Hint Sheet as soon as you get stuck. Use it only as a last resort--when you have to get a hint or lose your marbles!

Some general guidelines to get you started are:

- o Remember to examine things.
- o Look through the various rooms for objects you can use to affect or operate on things in other rooms.
- o Look for objects you can use to help you solve the problems at hand.

SAVING PARTIALLY COMPLETED GAMES: Because ADVENTURE is not a game you complete quickly, it contains an option to save your partially completed game on tape. This feature is especially useful in the Mysterious Mansion since there are many ways you can be killed. To avoid useless retyping, use this option by typing the "SAVE GAME" command. You will then see a read-write screen displayed. Remove the Adventure cassette and insert a blank data tape. Then depress the READ and WRITE cassette buttons and press the "W" key. Note that the Interact does not have an erase head, so you must not save a game over a previous game or you will lose both. Before hitting the "W" key to save the game on tape, you can press the "S" key to turn on the tape motor. Then depress the READ cassette button to position your tape past any material existing on the tape before you continue the writing sequence. When you have saved your game on tape, you can press the "CR" key to continue the existing

sequence. When you have saved your game on tape, you can press the "CR" key to continue the existing game. If you accidentally hit reset, you can resume the game by answering "Y" to the CONTINUE prompt.

RE-ENTERING A PARTIALLY COMPLETED GAME: When you load the ADVENTURE program, the first question you are asked is "SAVED GAME?" To reload a partially completed game, answer yes ("Y") to this query. The computer will display the read-write screen. Remove the ADVENTURE cassette from the tape drive and insert the cassette containing your game. Use the "S" key to turn on the tape motor and position the tape appropriately. Then depress the READ cassette button and press the "R" key to read in your saved game. The computer will then ask you "CONTINUE?", type "Y" to begin the game where you left off.

MORE ABOUT ADVENTURE: If you want to learn more about ADVENTURE in general, we suggest you consult the following references:

SOFTSIDE MAGAZINE. Special ADVENTURE issue, July 1980

CREATIVE COMPUTING. Special ADVENTURE issue, July 1980

RECREATIONAL COMPUTING. Fantasy simulation games issue, July-August 1980

BYTE. Special ADVENTURE issue, December 1980

GOOD LUCK, AND HAPPY ADVENTURING!!!

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VICIOUS FISHES

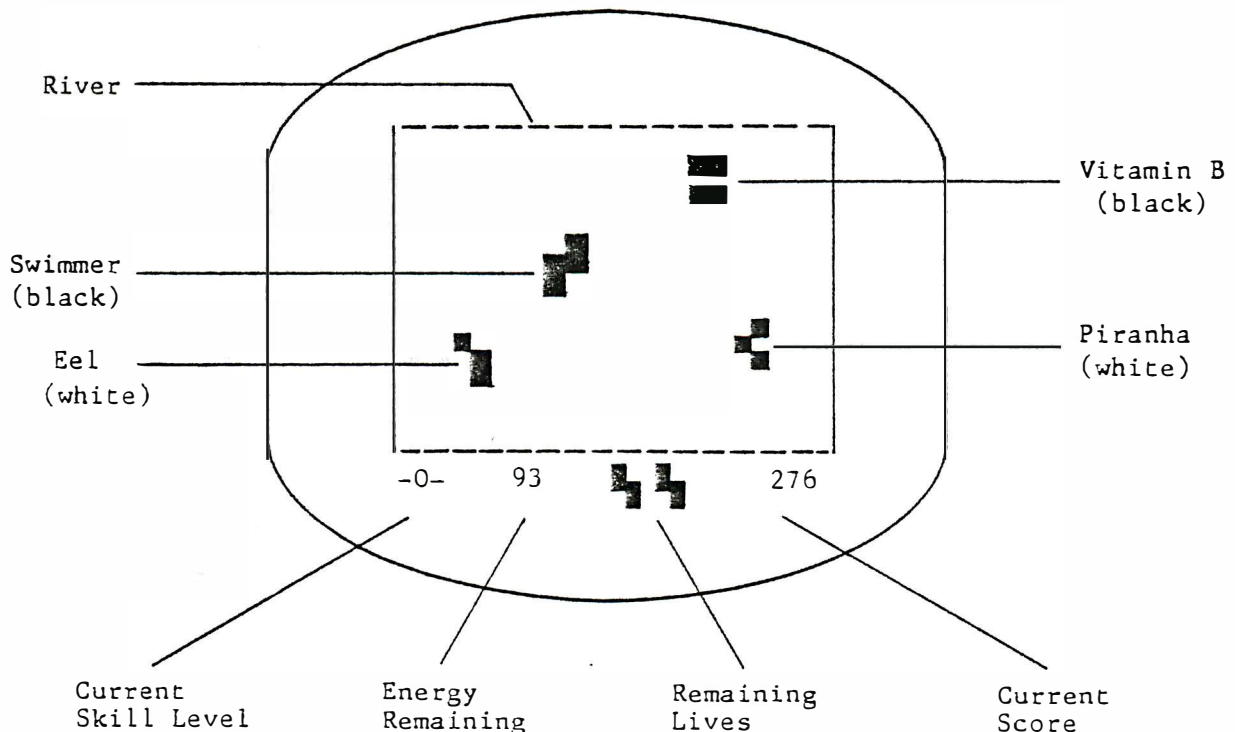
An Action/Arcade Game for 1 Player

How long can you survive in a river full of hungry piranha? Swim at slow or fast speed to evade their munching mouths. Low on energy? Get a boost from the Vitamin B capsules that occasionally float downstream. At the higher skill levels, you'll need 'em!

LOADING THE PROGRAM: Insert the program cassette into the tape drive. Depress the RESET button, press the "L" key, rewind the tape if necessary, then depress the READ cassette button to load the program into the computer's memory. Plug in the left entertainment controller.

GAME OPTIONS: The program begins by asking you to select a skill level for play ("SELECT SKILL LEVEL (0-8) 0=EASY 8=HARD"). Your skill level automatically increases at various points during game play. Your initial skill level selection controls the difficulty level at which you will begin play. Press '0' to start with an easy game, or a successively higher number for a more challenging game.

GAME PLAY: The game starts when you select your skill level. The object of the game is to stay alive as long as possible, swimming back and forth between the banks of the river. The game display looks similar to the picture below.



Swimmer (■): You control the swimmer via the joystick lever on the left entertainment controller. Move the lever in any of the eight positions to move the swimmer in the corresponding direction. Depress the fire button to move the swimmer at double speed. Your swimmer has 3 lives. Each time you are eaten by a piranha or tangle with an eel, you lose one life. The swimmer can get extra energy to move super-fast by eating Vitamin B.

Piranha (■): Deadly! Avoid at all cost!! Contact with a piranha means certain loss of life! The speed at which the piranha attack you varies according to your current skill level.

Eel (■): Although dangerous in their own right, these creatures will not pursue you. Best left alone.

Vitamin B (■): Super-energy capsules. When consumed, gives you extra speed (the ability to cross small rivers with a single stroke!). Take Vitamin B as often as possible. You gain 100 energy units each time you do.

Current Skill Level: You begin the game at whatever skill level you select. Your skill level increases as your points accumulate. Your current skill level is reflected in the leftmost position on the lower portion of the screen. Incrementation of the skill level varies, depending on the skill level at which you start the game. As your skill level increases, the piranha attack you more furiously, and you will need all the Vitamin B you can get to survive.

Energy Remaining: You begin the game with 100 units of energy. Your energy level controls how fast your swimmer moves, with or without the fire button depressed. If your energy counter shows energy remaining, you will be able to move about rapidly on the screen. When all your energy is exhausted, you can still swim, although not as fast, even with the fire button depressed. You can restore your energy level by catching and swallowing Vitamin B capsules that occasionally float by. Each set of capsules gives you 100 energy units. The energy counter is displayed to the immediate right of the skill level.

Remaining Lives: Your swimmer starts with three lives. Each time you run into a piranha, you lose one life. The remaining lives are shown graphically to the right of the energy counter.

Current Score: Your current score is continually being updated during game play in the lower right corner of the screen display. You score points merely by avoiding the fish and staying alive. However, you will score bonus points for swimming back and forth between the river banks. Each time you touch an opposite shore (right and left boundaries), you score a variable number of bonus points.

GAME END: Each time the piranha get you, your swimmer loses a life. When the swimmer has been killed three times, the game ends. Your score and the previous high score are displayed on the screen. If your score beats the previous record, the computer will ask you to enter your name ("NEW HIGH SCORE TYPE YOUR NAME"). Type in your name, concluding by pressing the 'CR' key. The computer then asks if you want to play the same game again ("SAME GAME? (Y/N)"). Press the 'Y' key or the fire button to play again at the same starting skill level. Press 'N' to respecify your initial skill level.

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HOT ROCKS

An Action/Arcade Game for 1 Player

The year is 2058. As long predicted by doom-sayers, the proliferation of nuclear arms and continuing territorial confrontations have led to World War III. The fiery holocaust fragments the earth and the force of the explosions sends its pieces hurling into space.

The sole survivors are two groups of people--the Good Guys and the Bad Guys--who had earlier been sent to inhabit space stations on the moon. Among other technological advances, We (the Good Guys, of course) have developed a laser that effectively reduces the half-life of radioactive material. This weapon is all we have to protect our new world against contamination by the "hot rocks," and the Bad Guys want it! On each mission into space, your job is to aim and fire your laser to destroy all the hot rocks you encounter. The Bad Guys compound your task--not only must you demolish the hot rocks, but you must also fend off their attack craft to survive. Then, when you've accomplished your mission, you must successfully land your ship on the lunar surface to recharge your laser. Then, you're off again on another mission in this high-tension adventure in space.

P.S. Notice anything unusual about the front screen and opening graphics sequence?

Loading the Program: Insert the program cassette into the tape drive. Depress the RESET button, then press the "L" key. Rewind the tape if necessary using the REWIND cassette button, then depress the READ cassette button to load the program into the computer's memory. Plug in the left entertainment controller.

Game Options: After the program has loaded, the computer asks you to select a skill level for play ("1-5, HARD-EASY"). The skill level setting controls the speed at which the hot rocks move on the screen. Press 5 for the easiest game or one of the lower numbers for more difficult game play.

Game Play: The game begins automatically after you select a skill level. The game is a series of missions into space, each of which consists of two parts. You must first destroy all hot rocks, then reland on the lunar surface to refuel. You begin the game, regardless of skill level, with four space-ships. For every 10,000 points you score, you are awarded an extra ship. You can lose ships in three ways:

- Collision with a hot rock
- Collision with or direct hit from the enemy saucer
- Unsuccessful lunar landing

After the opening graphics sequence, the lunar landscape appears on the screen, and your ship automatically takes off. When the lunar surface drops

from view, the hot rocks begin drifting across the screen around your ship. Use the joystick to control the direction and motion of your ship and the fire button to shoot at the hot rocks and the Bad Guys' saucer when it appears. Press the joystick lever to the right to rotate your ship in a clockwise direction. Press the lever to the left to rotate counter-clockwise. This allows you to aim the nose of your craft in any direction for firing. Depress the fire button to shoot at the rocks after aiming. Note that you can hold the fire button down to shoot your laser repeatedly and quickly. However, only four blasts from your gun can be active on the screen at any one time. To move your craft around on the screen, press the joystick up (forward) for thrust. Your ship will move in the direction in which the nose of your craft is pointed when you fire your thrust jets. And, careful--a little thrust goes a long way in a gravity-free environment!

If you lose your spaceship during this phase of the game through a hot rock collision or a bullet from the enemy saucer, your ship explodes and disappears from the screen. To resume play with a new ship, pull the joystick lever down (toward you).

When you have reduced all hot rocks to an inactive state, that phase of your mission is complete. The lunar surface reappears on the screen, and your ship flies in from the left side of the screen. You must land your craft, upright, in the flat area between the two craters. Use the joystick lever to control the direction of your ship as described previously (left=counter-clockwise, right=clockwise). Use thrust (joy up) as necessary to position your ship and to slow your descent for a safe touchdown. You will crash and lose a ship if you descend too fast, if you land outside the target area, or if the nose of your craft is not pointed upward. You score bonus points for a successful landing as described below.

Scoring: You score points for reducing the radioactive half-life of the hot rocks according to their size. The less radioactive the material, the smaller it appears and the harder to hit. The largest hot rocks are worth 50 points, the medium-sized are worth 90 points, and the smallest are worth 120 points. You score 500 points each time you destroy the enemy saucer. Note that, as your score increases, the saucer appears more frequently and fires more often.

As you begin the landing process after each mission, a fuel counter appears in the upper right corner of the screen. This counter reflects how much fuel you consume in firing your thrust jets during landing. You are awarded bonus points for a successful landing at a rate of ten times the amount of fuel remaining. The longer you play, the normal wear-and-tear of interplanetary travel takes its toll on your craft, making it less fuel efficient, and you burn more fuel during the landing process.

The maximum score you can achieve is 655,350. If you reach this score, the game counter resets to zero and the skill level is reset to the easiest level of play.

Game End: The game ends when the last of your available ships is destroyed. The computer displays the current high score, the scoreholder's name, and your score. If your score beats the previous high score, the computer asks you to enter your name ("A NEW RECORD! TYPE YOUR NAME"). Type in your name and press the "CR" key. The computer then asks you if you want to play again at the same skill level ("SAME GAME? Y/N"). Press the "Y" key or the fire button to play another game at the same skill level. Press "N" to select a new skill level for play.

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KING OF THE ROAD

An Action/Arcade Game for 1 Player

Prove you're a driving ace by how long you can last in this long distance road rally. Accelerate, veer from side to side, and brake to avoid colliding with the other crazy drivers swerving down the road.

LOADING THE PROGRAM: Insert the program cassette into the tape drive. Depress the RESET button, press the "L" key, rewind the tape if necessary, then depress the READ cassette button to load the program into your computer. Plug in the left entertainment controller.

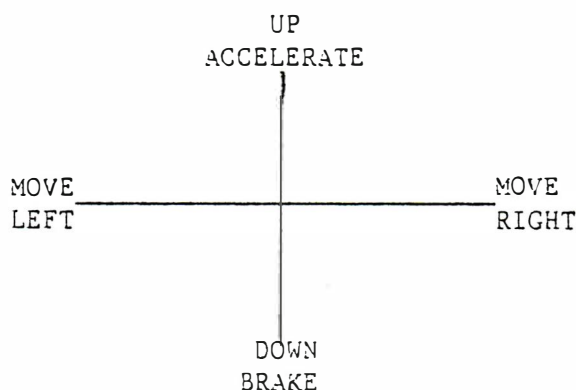
GAME OPTIONS: When the program has loaded, the computer will ask you to

SELECT ROAD WIDTH

- 1 = WIDE
- 2 = MEDIUM
- 3 = NARROW

This game option controls how wide the race course will be. Opinion varies as to which level is the most difficult. Press key "1", "2", or "3" to select a road width and begin the game.

GAME PLAY: The game automatically begins when you make your road width selection. You control the red car in the center of the road. Use the lever on the entertainment controller to speed up, brake, or move from side to side as shown below:



Your car can endure two collisions with other cars. A third collision totally disables your vehicle, and you must leave the race. The number of accident "chances" remaining is displayed in the lower right quadrant of the screen. When you collide with another car or hit the wall, your car explodes. The race then restarts automatically, unless it is your third crash, in which case the race ends.

GAME SCORING: Your running score is kept on a timer running in the upper left quadrant of your screen. Your final score reflects how long you were able to stay in the race, expressed in tenths of seconds. A score of 1500, for example, means you were able to last 150 seconds in the race, or 2½ minutes. Maximum race duration is 999,999 seconds or approximately 10 days. If you are still racing at this point, the timer resets to zero and begins counting again.

GAME END: The game ends when you have your third collision, whether with another car or the wall. At this point, the computer displays your score, the current high score, and the record-holder's name. If your score exceeds the previous high score, the computer displays the message "NEW HIGH SCORE" and requests that you type in your name. Type your name, concluding by pressing the "CR" key. The computer then asks you if you want to race again with the same road width ("SAME GAME? Y/N"). Press the "Y" key or the fire button to play again at your current road width setting, or press the "N" key to select a new width.

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Mega-Volts

An Action/Strategy Game for 1 Player

The Scenario: You have inadvertently stumbled into a restricted access federal facility studded with high-voltage fences. Government officials, taking advantage of advances in robotics technology, employ electrical robots as security guards for the facility. The guards pursue you, and, to stay alive you must move around the field and draw them into the electrified fences. When a guard runs into a fence, it receives a jolt that fires its electronic circuitry. Likewise, if you run into a fence, or if one of the guards lands on you, you are electrocuted. A combination of skill and luck makes Mega-Volts a high-powered game you'll really get a charge out of!

LOADING THE PROGRAM: Insert the Mega-Volts cassette into the tape drive. Depress the RESET button, and press the "L" key. Rewind the tape if necessary, then depress the READ cassette button to load the program into the computer. Plug in the left entertainment controller.

GAME OPTIONS: You can select the skill level at which you want to play. The skill level you choose determines how many electric fences and guards appear on the playing field at the start of each round. At skill level 1, there will be 12 fences and 3 robot guards. At skill level 2, the number of fences is 10, and four guards will pursue you. At the hardest level 3, you have only 8 fences to hide behind, and there are 5 guards from which to escape. The program asks you to make your selection:

DIFFICULTY LEVEL?

- 1 = EASY
- 2 = DANGEROUS
- 3 = DEADLY

Press key 1, 2, or 3 to select a skill level for play.

GAME PLAY: After you have selected your skill level, the computer displays the playing field, which, although not graphically presented as such, is a matrix of squares. It randomly places you, the guards, and the fences on the field. You begin play by using the joystick lever on the entertainment controller to move your man. You can move left, right, up, down, or any of the diagonal directions. You move only one square per turn. Each time you move, all the robot guards move one square as well, and their moves correspond to the direction in which you move. The object, of course, is to move in a pattern that ultimately draws all the guards into fences. Fortunately for you, the guards aren't terribly smart. They will always move toward you and will make no attempt to circumvent fences. Although you may move into any of the 8 squares adjacent to the one you are in, you should not move into a square

containing a robot, nor should you move into one containing a fence. In either of these two cases, you will be electrocuted.

If you find yourself trapped in a position where any move means certain death, you can use the special "escape" option. Press the fire button to exercise this option when it is your turn to move. The escape option gives yout man superhuman strength--the ability to leap to another square on the board. Your landing position is randomly selected by the computer. You should use this as a last recourse only. You may land in a "safe" place; however, you may just as easily land on an electrified fence or in a square adjacent to a robot guard.

SCORING: Each round ends when you have drawn all the guards into the fences, when you run into a fence, or when one of the guards lands on you. The winner of each round scores 1 point. Press the fire button to begin a new round. You play successive rounds until either you or the computer scores 10 points, at which point the game ends. The computer announces the winner through a graphic display, then asks if you want to play again at the same skill level ("SAME DIFFICULTY?") Press the "Y" key or the fire button to play at the same difficulty level. To change skill levels, press the "N" key. You can also reset the game and select a new skill level at the end of any round by pressing the "D" key instead of the fire button to start a new round. The computer will ask you to specify a new "DIFFICULTY LEVEL," then starts a new game, resetting both your score and the computer's to zero.

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BATTER UP!

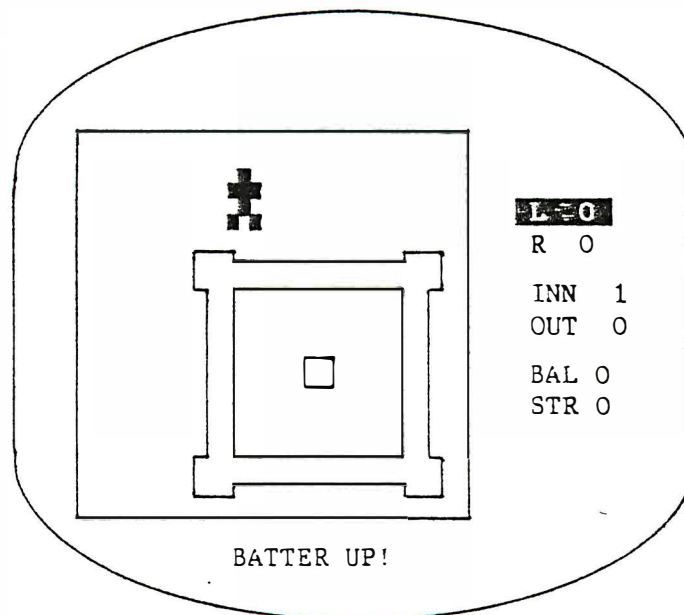
An Action/Arcade Game for 2 Players

"Strike three! Yer out!" Have fun with America's national pastime on your TV screen with BATTER UP! Players alternate batting and fielding in nine innings of action-packed baseball, featuring four types of pitches, infield and outfield hits, baserunning, fielding, foul balls, and home runs.

LOADING THE PROGRAM: Insert the BATTER UP! cassette into the tape drive. Depress the RESET button, press the "L" key, rewind the tape if necessary, then depress the READ cassette button to load the program into your computer's memory. Plug in both entertainment controllers.

GAME PLAY: As in standard baseball, the game consists of nine innings of play. BATTER UP! follows most baseball conventions, i.e., each team has three outs each time at bat, three strikes make an out, the batter walks if the pitcher throws four balls, foul balls count as strikes, except on the third strike, etc. There are a few deviations from standard rules; these are discussed in this documentation as they apply.

When the game starts, you will see a screen display as shown below. On the left part of the screen, the baseball diamond is displayed. On the right side, the computer presents the basic game statistics (score, inning, number of outs, balls, and strikes). The team at bat is identified by a white background behind the team score. ("L" and "R" correspond to the left and right controllers, respectively.) The computer randomly selects which team bats first.



Batting

Before each batter goes to the plate, the message "BATTER UP!" appears on the bottom of the screen. The batting team must acknowledge readiness to receive pitches by pressing the fire button in response to this message. Only then can the fielding team player pitch the ball. After the ball is thrown, press the fire button to swing the bat as the ball crosses the plate. If the pitch is a strike or you swing and miss, the message "STRIKE" appears on the screen. If the pitch does not cross home plate, the message "BALL" appears.

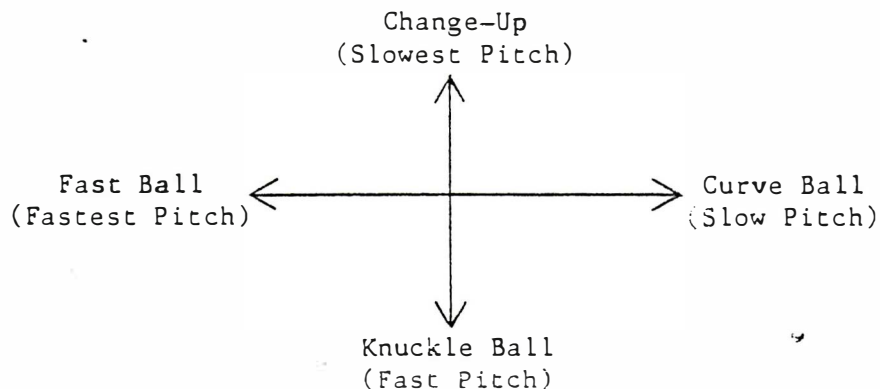
Baserunning

If you hit the ball, the batter automatically runs to first base. If the ball stays in the infield, the hit is a single, and any runners on base will advance one base. If the ball goes into the outfield, the batter will run to first base. If the outfielder has not picked up the ball by the time the runner reaches first, you may elect to try for additional bases by pressing the fire button. If you try for another base, the outfielder may retrieve the ball, throw it to the base toward which you are running, forcing you out. If you hit the ball into the outfield, and the fielder catches it while it is still moving, the batter is out, and any runners on base retreat to their original positions.

Fielding

Fielding in BATTER UP! is composed of two functions: pitching and fielding the ball.

Pitching: As each batter comes to the plate, the message "BATTER UP!" appears on the bottom of the screen. When the batting team indicates readiness by pressing the fire button, you can begin pitching. You may pitch whenever you see the ball blinking on the mound. To pitch, depress the fire button and move the joystick lever to the left, right, up, or down. This lets you select the speed of your pitch, as shown below.



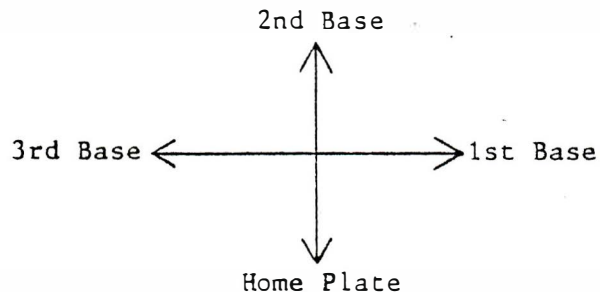
The faster pitches, while harder to hit, are also more likely to be wild pitches, ruled as balls.

Playing the Outfield: You control the single player in the outfield. This player always starts behind second base. You can change his position before you pitch by using the joystick lever to position him anywhere in the outfield

you desire. The outfielder cannot enter the infield. The outfielder's position is frozen while you pitch. Once the ball has been thrown, the fielder is free to move again.

A ball hit into the infield is always a single, and you can do nothing to field the ball. The batter moves to first base only; any other runners on base will advance one base. The ball is then automatically returned to the pitcher.

If the ball is hit into the outfield, the batter runs to first base. Use the joystick lever to move the fielder and retrieve the ball. If the fielder catches the ball while it is still moving, the batter is out, and any runners on base return to their starting bases. If you do not catch the ball while it is moving, you can still pick it up. You will hear a "beep" that indicates that the fielder has retrieved the ball. If the runner has reached the base before the fielder gets to the ball, the batting team may elect to try to make it to another base. You can force the runner out by throwing the ball to the base toward which the runner is headed. To throw the ball, depress the fire button and move the joystick lever to the position corresponding to that base, as shown below.



If you have retrieved the ball, and the runners have reached the bases, depress the fire button and move the lever in any of the above directions to return the ball to the pitcher and end the play.

GAME END: The game ends after nine complete innings of play, except under the following conditions:

- a) The score is tied. The game goes into extra innings in this case and continues until the end of an inning in which one team is ahead.
- b) It is the ninth inning, and the team batting second is ahead. If the team batting in the top half of the inning scores no runs, the last half of the inning is not played.
- c) It is the bottom of the ninth, and the team that batted first is ahead. If the team that bats second takes the lead at any time, the game ends, regardless of how many outs have been made.

When the game ends, the computer displays the final score on the screen, and asks if you want to start another game. Press the fire button to play again.

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GOOFY GOLF

Miniature Golf for 1 or 2 Players

Inveterate golfers, here's the game for you! At last you can feed your cravings for your favorite sport all year round, no matter what the weather. Just load GOOFY GOLF, and you've got 18 holes of miniature golf on your TV screen. Some holes are easy, others are real bears; all have obstacles of one sort or another--water traps, mystery hazards, moving gates, and barriers. Play alone or take a friend along. Can you break 100?

LOADING THE PROGRAM: Insert the GOOFY GOLF program cassette into the tape deck, depress the RESET button, press the "L" key, rewind the tape if necessary with the REWIND cassette button, then press the READ cassette button to load the program into the computer.

GAME OPTIONS: When the program has loaded, the computer asks for the number of players ("1 OR 2 PLAYERS?"). To play GOOFY GOLF with one player, press "1" and plug in the left entertainment controller. For 2 players, press "2" and plug in both controllers. The computer then asks how many holes you want to play. The course has 18 holes. You can play either the front or back 9 holes, or all 18. Press "1" for the front 9 only, "2" for the back 9 only, or "3" to play the whole course.

GAME PLAY: After you have selected the number of players and holes, the course for the first hole appears on the screen. Your ball is represented by a single white pixel on the screen. The hole is a single black pixel. The black, 3x3 pixel square is your club. Move the club around the screen to position it for the shot using the joystick lever on the entertainment controller. Note that the club moves more slowly as it approaches the ball. This is intentional. The slower motion allows easier placement of the club for accurate shots. You can hit the ball from anywhere on the screen. You determine the direction of the shot by the angle at which you hit the ball, and the distance the ball travels by how far away the club is from the ball. To hit the ball, position the club, then depress the fire button. Your club will disappear from the screen and reappear when the ball stops moving.

There are several strategies to playing this game. You can use the "soft touch" approach, putting the ball gently to its destination. You can also use the "hope" approach, in which you hit the ball really hard from a long distance, and hope it goes where you want it to. You can use the barriers to advantage with bank shots, as you might in billiards. You'll probably find a combination of these techniques to be effective.

If you are playing the two-player game, the players alternate playing each hole throughout the course. You will not have both players' balls on the screen at the same time. The computer indicates whose turn it is by a green arrow on the left side of the boxes at the top of the screen.

OBSTACLES: The green areas are the part of the course on which the ball can travel. The yellow areas are the borders and barriers. Your ball will ricochet off these areas if they are hit. The blue areas are water traps. If you hit your ball into a water trap, you lose the ball and must start the hole over again. The red areas are mystery hazards. If you hit a mystery hazard, your ball vanishes, then reappears somewhere else on the screen. Sometimes this can help you; other times it will really hurt! Some holes also have moving gates that separate parts of the course. You must get your ball through while the gate is open—time your shot carefully, or the gate will close and bounce your ball off to another part of the course.

SCORE: The computer keeps a running total for each player in the green boxes at the top of the screen. This is your cumulative score for the game. The left box contains the left (or single) player's score; the box on the right side keeps the right player's score.

GAME END: When the last player finishes the final hole, the computer displays the final score for each player. Depress the fire button on either controller to play the course again.

So, grab your caddy and put on your plaid cap. Good golfing!

MICRO VIDEO

P.O. Box 7357
204 E. Washington St.
Ann Arbor, MI 48107
(313) 996-0626

SPACE BASE

An Action Arcade Game for 1 Player

The last stronghold of civilization as we know it, your Space Base, is under attack by alien forces determined to conquer the universe! Alien warships randomly appear around you and shoot missiles at you. The movable gun on your base lets you fire back to destroy the missiles and the alien warships. Occasionally, the aliens send in special reinforcements, flying saucers that circle your space station. They're harder to hit than the missiles, and just as deadly. Will you be civilization's hero...or its goat?

LOADING THE PROGRAM: Insert the program cassette into the tape deck. Depress the RESET button, press the 'L' key, rewind the tape if necessary, then press the READ cassette button to load the game into the computer's memory. Plug in the left entertainment controller.

GAME PLAY: The game is a series of battles with the alien warships, and the object is to destroy as many missiles and ships as possible without getting destroyed yourself. The game begins when your Space Base appears in the center of the screen. Then, randomly, the alien warships appear on the four sides of the screen and fire missiles at your base. Use the joystick lever on the left entertainment controller to aim the gun on your base and the fire button to shoot down the missiles and the warships that fire them. You score 10 points for each missile you deflect and 20 points for hitting its originating spacecraft. Note that you can hold the fire button down for a continuous stream of bullets; as the game grows progressively harder, this will be necessary to avoid your own destruction. At the end of each battle, the aliens send in a special reinforcement, a kamikaze flying saucer that circles your base. If you are unable to hit the saucer, it will crash into your base, destroying itself, and you in the process. If you do hit the saucer, you score an additional 500 points, and the round of battle ends. The computer displays your current score, and a new barrage begins. With each battle, the aliens sense your growing weariness and advance to a closer firing range. If you battle long and hard enough, you can drive them back to their original firing range, and begin the battles again from that point. At a maximum score of 655,350, the score counter wraps back to zero and begins incrementing again.

GAME END: The game ends when one of the aliens' missiles hits your space base or if you fail to destroy the kamikaze saucer. The computer displays your final score, the current high score and its record-holder. If your score beats the currently stored high score, the computer presents your final score, prints the message "A NEW RECORD!", and asks you to enter your name. Type in your name at the computer's keyboard, then press 'CR'. The game will start over automatically.

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204 E. Washington St.
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(313) 996-0626

COMBAT!

A Tank Battle Action Game for 2 Players

Ready, aim, FIRE!!! COMBAT!, the tank battle action game, lets you combine your sharpshooting skill and maneuvering ability to strike fast and destroy your opponent's tanks. Take aim carefully, for you won't always win just by destroying your opponent's tanks first.

LOADING THE PROGRAM: Insert the COMBAT! cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape if necessary, then depress the READ cassette button to load the program into the computer.

GAME PLAY: At the beginning of the game, each player has a set of six tanks "hidden" behind a protective wall. The object of the game is to destroy all your opponent's tanks, using as few bullets as possible. Each tank has a maximum firing capacity of 10 bullets. The number of bullets remaining for the tank in play are shown on the protective wall. When you use up all the bullets for a tank, that tank goes out of play permanently, and a new tank comes into play.

Maneuver your tank around the playing field with the joystick lever. To fire a bullet, take aim and depress the joystick fire button. If you hit your opponent's tank, the tank explodes and goes out of play, and you score points. Your tank will remain in play until all its bullets have been used or it is destroyed by your opponent's shot. Tanks are reset to the starting corners each time a tank is destroyed, even if the tank is to remain in play. If you run into your opponent's tank, an explosion occurs, and one of the tanks is destroyed. (The computer decides which one at random.) You do not score any points for destroying your opponent's tanks in this way.

You can move your tank to the entrance way of your opponent's protective barrier and fire at a tank behind it. That tank will be destroyed and you score points. However, you can do this only once per tank.

SCORING: You score points for shooting at and destroying your opponent's tanks. The number of points you get for a hit depends on how many bullets you have used. The first bullet for the first tank is worth the most points; the other bullets in that tank's set decrease in value. The first bullet in the second tank is worth fewer points than the first bullet in the first tank, and so on.

GAME END: The game ends when one player's set of tanks have been completely destroyed. The computer displays the final score, and a new game begins.

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204 E. Washington St.
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ALIEN INVADERS

An Action Space Game for 1 Player

Space Invader addicts, this is the program you've been waiting for! Take on the invading forces on your Interact. With Alien Invaders, you have the spectacular graphics, fluid motion, and entertaining sound effects of the arcades, plus selectable skill levels, for hours of pulse-racing action. Count the number of games you play, and watch how your Interact saves you money. After 80 games, you're playing for free!

LOADING THE PROGRAM: Insert the program cassette into the tape deck, press the "L" key, rewind the tape if necessary, then depress the READ cassette button to load the program into your computer's memory. Plug in the left entertainment controller.

GAME OPTIONS: In Alien Invaders you control two variables with your selection of game options. When the program loads, you are asked to select your base's firing velocity (1=SLOW, 2=MEDIUM, 3=FAST). This sets the speed at which bullets you fire at the invaders travel up the screen. Press key 1, 2, or 3 to select slow, medium, or fast-moving bullets. When you've made your firing velocity selection, the computer asks you for the skill level at which you want to play (1=TOURNAMENT, 2=INTERMEDIATE, 3=BEGINNER). This option controls how fast the invaders move across and down the screen toward your base. At tournament level, your firing base is subject to rapid attack; at lower levels, the attackers progress more slowly. Press key 1, 2, or 3 to select your skill level and begin play.

GAME PLAY: The object of the game is to shoot down the entire bank of invaders, while avoiding the bombs they drop. Use the joystick on the left entertainment controller to move your firing base back and forth along the bottom of the screen. Depress the fire button to shoot at the invaders. When the game begins, you have four firing bases. You are awarded extra firing bases for reaching certain score levels. These levels occur in a logical arithmetic progression. You receive the first bonus base when your score reaches 5,000 points. Additional bases are obtained at 12,000, 21,000, 33,000, 46,000, etc. points. At various times during game play, a flying saucer spins across the top of the screen. You score extra points if you can hit this fast-moving target.

When you've cleared an entire bank of invaders off the screen, the game halts temporarily while the computer tells you your current score and the number of bases you have remaining. The remaining bases are represented graphically beneath the score. The game then restarts. Note that as you progress through the game, the bank of invaders start at successively lower screen coordinates.

The game ends when all your firing bases have been destroyed by the invaders' bombs, or if you fail to eliminate all the invaders and they move down past the barriers and capture your firing base.

GAME SCORING: You score points for every invader you destroy. All aliens in the bottom-most row are worth 10 points. Point values of the invaders increase in increments of 10, with invaders in the top row worth 50 points each. Each flying saucer hit adds an extra 200 points to your score. The maximum score is 655,350, after which the scoring counter is reset to zero and begins incrementing again.

GAME END: When all your firing bases have been hit or the invaders have caught you, the game ends. The computer presents your score and the current high score on the screen. If your score beats the current high score, the computer prints "A NEW RECORD" and asks you to enter your name. Type in your name from the computer's keyboard and press the "CR" key when done. On the bottom of the screen, the computer asks "SAME GAME? Y/N". Press the fire button or the "Y" key to play the game again using the previously defined game options. Press "N" to respecify the game options before playing another game.

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TATOOINE TRAVELS

A Microsoft 8K BASIC
Adventure Game

It's adventure on the desert planet of Tatooine! Your destination is the spaceport at Mos Eisley. To get there, you must travel across 200 miles of hot desert sands on your giant lizard, overcoming hazards you encounter along the way. The sand people are continually in pursuit of you, and you may have to do battle with Jawas or Imperial troops. Use your lizard's travelling speed and water rations wisely, or you may end up as vulture food. No two games are ever the same. Rated absolutely addicting by our reviewers.

LOADING THE PROGRAM: Insert the Microsoft 8K BASIC cassette into the tape deck. Depress the RESET button, press the 'L' key, rewind the tape if necessary, then depress the READ cassette button to load the BASIC interpreter into the computer. When the BASIC 'OK' prompt appears, remove the BASIC cassette and insert the Tatooine Travels cassette in its place. Repeat the RESET-L sequence described above to load the program. The program will execute automatically when it has loaded.

GAME OPTIONS: When the program starts, you are asked to select a skill level for play. Your choices are "A=TENDERFOOT, B=CONFIDENT, C=DESERT FOX". This selection controls several variables: your lizard's maximum energy level, the number of drinks you can carry in your canteen, and the speed at which the Sand People pursue you. Press key A, B, or C to select an easy, average, or hard game, respectively.

GAME PLAY: Tatooine Travels is a command-driven game. You tell the program what you want to do by selecting from six available commands. The command list is:

D = DRINK
F = FULL SPEED
H = $\frac{1}{2}$ SPEED
R = REST FOR THE NIGHT
S = STATUS CHECK
C = COMMAND LIST

The effects of these commands and their uses are as follows:

D = DRINK -- Press the 'D' key to take a drink when it is necessary to do so. You must take a drink from your canteen at least every fourth turn. The computer will warn you when you must drink.

- F = FULL SPEED** -- Press the 'F' key to travel at full speed. Your lizard burns 3 energy units in each turn at full speed and will carry you between 5 and 20 kilometers.
- H = $\frac{1}{2}$ SPEED** -- Press the 'H' key to travel at half speed. Your lizard burns only 1 energy unit in each turn at half speed, and will carry you between 1 and 10 kilometers.
- R = REST FOR NIGHT** -- Press the 'R' key to stop and rest for the night. After a good night's sleep, your lizard's energy level is restored to full capacity. Stopping to rest counts as a turn (you may be forced to take a drink afterwards).
- S = STATUS CHECK** -- Press the 'S' key to check your lizard's energy level, how many drinks left in your canteen, and how many turns you can take without drinking. A status check does not count as a turn.
- C = COMMAND LIST** -- At any time, you can display the command list by pressing the 'C' key. This does not count as a turn.

HAZARDS: During your travels on Tatooine, you may encounter hazards, such as sand storms, Sand People, Jawas, and Imperial troops, that threaten to impede your progress. In some cases, you will have to make a decision as to what to do; follow the computer's instructions if this occurs.

MOISTURE FARM: If you reach a moisture farm, your water supply is automatically replenished to maximum level. You also take advantage of the abundance of water and take a drink, which resets your turns without drinking to the maximum of 4.

Good luck, you'll need it. Have a safe trip!

PROGRAM LISTING: A complete program listing for Tatooine Travels is given on the following pages. You can use this listing to make modifications in the program or to learn more about this type of game programming in BASIC.

```

5 REM TATOOINE TRAVELS
3 REM COPYRIGHT 1981, MICRO VIDEO CORP.
3 CLS:PRINTCHR$(8)
11 CLEAR(2):COLOR0,3,4,7:H=1:R=1:J=RND(-PEEK(24553))
14 CLS:PRINT"WELCOME TO THE DESERT WORLD OF TATOOINE--":PRINT:PRINT"GOOD LUCK
":PRINT
17 GOSUB227:CLS
20 PRINT"SKILL LEVEL":PRINT:PRINT"A= TENDERFOOT"
23 PRINT:PRINT"B= CONFIDENT":PRINT:PRINT"C= DESERT FOX":TONE25,200
26 C$=INSTR$(1)
29 IFC$="A"THENL=12:DR=9:SS=10:GOTO41
32 IFC$="B"THENL=9:DR=7:SS=12:GOTO41
35 IFC$="C"THENL=7:DR=5:SS=15:GOTO41
38 PRINT"HUH?!":PRINT:TONE25,200:C$=INSTR$(1):GOTO29
41 CLS:PRINT"TYPE 'C' TO SEE COMMAND LIST, ANYOTHER KEY TO START"
44 TONE25,200:C$=INSTR$(1):IFC$="C"THENGOSUB212
47 WINDOW60:LX=L:DX=DR:SD=0
50 PLOT0,0,0,112,77:PLOT0,61,2,112,17
53 OUTPUT"YOUVE GONE",5,67,3
56 PLOT70,62,0,25,6:OUTPUT0,70,67,3:OUTPUT"K",98,67,3:IFD>=200GOTO446
59 IFD<>0THENR=0
62 IFD>=20THENGOSUB158:IFLS=1GOTO404
65 IFH=0THENH=1:GOTO71
68 LS=0:GOTO236
71 IFLS=1GOTO404
74 IFT=3THENGOSUB338:PRINT"GET A DRINK!":PRINT

77 IFL<>1THENPRINT:PRINT"COMMAND?":PRINT:C$=INSTR$(1)
78 OUTPUTC$,55,23,1
80 IFC$="D"GOTO230
83 IFC$="C"THEN GOSUB212:GOTO77
86 T=T+1
89 IFT>4THENPRINT"YOU DRIED AND SHRIVELLED UP!":PRINT:GOTO404
92 IFC$="F"GOTO107
95 IFC$="H"GOTO137
98 IFC$="R"GOTO179
101 IFC$="S"GOTO185
104 T=T-1:PRINT"HUH?!":PRINT:GOTO77
107 L=L-3
110 IFL>=0GOTO122
113 PRINT"YOU RAM YOUR LIZ-ARD TO DEATH...":PRINT:PRINT"HIS AND YOURS!"
116 GOSUB227
119 LS=1:GOTO71
122 PRINT:PRINT"YOUR LIZARD BURNSACROSS THE":PRINT"TATOOINE SANDS..."
125 PRINT:GOSUB227
128 D1=INT(RND(1)*21)
131 IFD1<5GOTO128
134 D=D+D1:GOTO53
137 L=L-1:IFL>=0GOTO146
140 PRINT"YOUR LIZARD JUST DROPPED DEAD!":PRINT
143 GOSUB227:GOTO404
146 PRINT:PRINT"YOUR LIZARD IS MERRILY TROTTING ALONG...":GOSUB227
149 PRINT
152 D1=INT(RND(1)*11):IFD1<1GOTO152
155 D=D+D1:GOTO53
158 SP=INT(SS*RND(1)+2.5)
161 SD=SD+SP
164 IFSD>=DGOTO173
167 PRINT"THE SAND PEOPLE ARE";D-SD;"KILOS"
170 PRINT"BEHIND YOU":PRINT:RETURN
173 LS=1:PLOT0,0,0,112,60:PRINT"THE SAND PEOPLE CAUGHT YOU!":PRINT
176 PRINT"THEY LOVE LIZARD AND HUMAN STEW!":PRINT:GOSUB227:RETURN
179 PRINT"YOUR LIZARD":PRINT"THANKS YOU!":PRINT
182 R=1:GOSUB227:L=LX:GOTO62
185 PLOT0,0,0,112,60
188 PRINT"YOUR LIZARD HAS"
191 PRINTL;"ENERGY UNITS":PRINT
194 PRINT"YOU HAVE";DR;
197 PRINT"DRINKS LEFT":PRINT
200 T=T-1
203 PRINT"YOU HAVE";4-T;"TURNS"
206 PRINT"WITHOUT DRINKING"
209 FORI=1TO2000:NEXT:PLOT0,0,0,112,60:GOTO71
212 PLOT0,0,0,112,60:PRINT"COMMANDS":PRINT
215 PRINT"D=DRINK"
218 PRINT"F=FULL SPEED":PRINT"H=1/2 SPEED"
221 PRINT"R=REST FOR NIGHT":PRINT"S=STATUS CHECK"
224 PRINT"C=COMMAND LIST":FORI=1TO3000:NEXT:PLOT0,0,0,112,60:RETURN
227 FORI=1TO1000:NEXT:RETURN
230 DR=DR-1:IFDR<0THENPRINT"!!OUT OF WATER!!":GOTO404
231 T=0:PRINT"GULP!":PRINT
233 IFDR<=DX/2THENPRINT"BETTER WATCH FOR A MOISTURE FARM!":T=0:LS=0:GOTO71
236 H=RND(1)*100
239 IFH>95GOTO350
242 IFH>10GOTO254

```



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245 IFR=1THENR=0:GOTO254
248 PRINT"YOU HAVE REACHED A MOISTURE FARM!":PRINT:DR=DX:T=0
251 GOSUB227
254 IFH>30ANDH<35THENGOSUB263:IFLS=1GOTO404
257 IFH>20ANDH<27THENGOSUB338:GOSUB311:H=0:R=0:GOTO53
260 LS=0:GOTO71
263 PLOT0,0,0,112,60:PRINT"THE JAWAS HAVE CAUGHT YOU!"
266 PRINT:PRINT"YOU MANAGED TO RADIO FOR HELP":PRINT
269 GOSUB227
272 PRINT"YOU HAVE A CHOICEOF COMMANDS:":PRINT
275 PRINT"A: WAIT FOR HELP":PRINT:PRINT"B: TRY ESCAPE"
279 PRINT:C$=INSTR$(1)
281 IF C$<>"A"ANDC$<>"B"THENPRINT"HUH?!":PRINT:GOTO278
284 IFC$="B"GOTO293
297 IFRND(1)<.3THENPRINT:PRINT"SO SORRY,NO HELP!":LS=1:RETURN
290 PRINT:PRINT"HELP ARRIVES, YOUARE FREED!":PRINT:RETURN
293 IFRND(1)>.3GOTO305
296 PRINT:PRINT"YOU WERE CRUSHED BY A RENEGADE DROID--"
299 LS=1
302 PRINT:PRINT"YOU DIDN'T STAND A CHANCE, SUCKER!":GOSUB227:RETURN
305 PRINT:PRINT"MAZELTOU!":GOSUB227
308 PRINT:PRINT"A SUCCESSFUL":PRINT"ESCAPE!!":PRINT:RETURN
311 PRINT"!!SANDSTORM!!":PRINT:PRINT"LOTS A LUCK!"
314 GOSUB227:D1=INT(RND(1)*11)
317 IF D1=0THENGOSUB227:PRINT:PRINT"NO CHANGE":PRINT:RETURN
320 IFH<23GOTO332
323 PRINT
326 D=D-D1:PRINT"YOU HAVE BEEN DRIVEN BACK BY"
329 PRINTD1:PRINT"KILOMETERS!":GOSUB227:PRINT:RETURN
332 D=D+D1:PRINT:PRINT"YOU HAVE BEEN":PRINT"DRIVEN";D1
335 PRINT"KILOMETERS AHEAD!":GOSUB227:PRINT:RETURN
338 SOUND3,30:SC=24888:PLOT0,0,0,112,60
341 OUTPUT"...WARNING...",12,12,1:POKESC,1
344 FORI=1TO5
347 PRINT:NEXT:POKESC,32:PRINT:PRINT:SOUND7,4096:RETURN
350 PRINT:PRINT"YOU HAVE SPOTTED IMPERIAL TROOPS HEADED YOUR WAY"
353 PRINT:PRINT"YOU MUST CHOOSE:":PRINT
356 PRINT"A: WAIT IN AMBUSH":PRINT:PRINT"B: TRY TO HIDE"
359 TONE25,200:C$=INSTR$(1)
362 IFC$="B"GOTO389
365 PLOT0,0,0,112,60:OUTPUT"AMBUSH!",32,27,1
368 SOUND3,264
371 FORI=1TO10
374 COLOR3,7,2,4:COLOR4,6,8,2:COLOR6,0,2,3:COLOR5,3,2,6
377 SOUNDS,392:COLOR5,6,0,3:COLOR3,4,5,1:COLOR0,3,4,7:NEXT
380 SOUND7,4096:PLOT0,0,0,112,60
383 IFRND(1)>.75THENPRINT"YOU WERE TOTALLY VAPORIZED":GOSUB227:GOTO404
386 PRINT"YOU INCINERATED THEM!!":GOTO71
389 IFRND(1)<.5GOTO398
392 PRINT:PRINT"YOU ESCAPED! THEY PASSED YOU BY!"
395 GOSUB227:PRINT:PRINT"SOMETIMES COWARD-ICE PAYS OFF!!":PRINT:GOSUB227:GOTO71
398 PRINT:PRINT"THE STORMTROOPERS GOT YOU!":GOSUB227
401 PRINT:PRINT"YOU'VE HAD IT, CHUMP!!":GOSUB227
404 WINDOW77:PLOT0,0,0,112,77:R=RND(1)*10
407 PRINT"YOU DIED IN THE DESERT LIKE THE WITLESS FOOL YOU ARE!":PRINT
410 GOSUB227
413 IFR<6GOTO419
416 PRINT"STUPID PEOPLE":PRINT"SHOULD STAY OUT OF THE DESERT!!":GOTO431

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419 IFR<3GOTO425
422 PRINT"JAWAS USE YOUR SKULL FOR A BEER STEIN!":GOTO431
425 PRINT"YOUR WORTHLESS REMAINS ARE EATENBY RAVENOUS SAND PEOPLE!"
428 GOSUB227
431 PRINT:PRINT"PLAY AGAIN?":C$=INSTR$(1)
434 IFC$="N"THENCLS:OUTPUT"COWARD!",31,38,1:END
437 IFC$="Y"THENCLS:H=1:R=1:T=0:D=0:LS=0:GOTO20
443 GOTO431
446 WINDOW77:CLS:PRINT"CONGRATULATIONS! YOU HAVE ARRIVED AT MOS EISLY"
449 PRINT"SPACEPORT..."
452 GOSUB227:PRINT"YOUR TROUBLES":PRINT"HAVE JUST BEGUN!!":PRINT:GOSUB227
455 GOTO431

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PACKRAT

An Action/Arcade Game for 1 Player

In the original Interact game, Computer Maze, your task was to escape from a maze without being caught and eaten by a "cat." PACKRAT brings another maze game home on your computer, with a different twist. Can you gobble all the golden bits in the maze before the "boogiemens" get you? Super-energy megabytamins give you the power to attack back for high scores.

LOADING THE PROGRAM: Insert the program cassette into the tape deck, depress the RESET button, press the 'L' key, rewind the tape if necessary, then depress the READ cassette button to load the program into the computer's memory. Plug in the left entertainment controller.

GAME PLAY: When the program has loaded, the game maze appears on the screen, filled with golden dots. The object is to move your packrat through the maze, gobbling the golden bits as you go. But beware, the "boogiemens" are after you, and you must not let them "get" you. You score 1 point for each golden bit you eat. In the four corners of the maze are super-energy "megabytamins" (represented as "+" signs)--these give you the power to chase the boogiemens down and eat them too. You score no points for eating the megabytamins, but you do score 25 points for each boogiemen you get. They change in color from blue to red and flee from you when you are supercharged. At various times during the game, a "bonus byte", a small "x" character, appears below the center box in your packrat's original starting location. These are delicious, nutritious, and you score an extra 100 points each time you eat one. Note that the boogiemens can steal your treat if they pass over the spot before you get there.

When you've eaten all the golden bits in the maze, action stops, the screen flashes, then a new maze appears. Your current score is displayed in a box in the center of the maze before the next round begins. You begin the game with three packrats, and the number of packrats in play are displayed on the bottom of the screen. You get a reinforcement--an extra packrat--when you score just over 1500 points. This additional packrat will not appear on the screen, however. Each time a boogieman "gets" you, your current score is displayed in a box in the center of the screen before the action restarts. The maximum score possible is 65,535, at which point the scoring counter wraps back to zero and begins incrementing again. Should you become skilled enough at the game to reach this score, you'll find that you are awarded an extra packrat when you do.

The game ends when the boogiemens have gotten to and destroyed all your packrats. Your final score and the current high score are displayed on the screen. If your score beats the current high score, the computer will ask you to "TYPE YOUR NAME". Type your name, then press the 'CR' key. The computer responds by presenting your final score and your score as the current high score. Press the 'CR' key to play another game.

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THE TROLL HOLE ADVENTURE

A Puzzling Game for 1 Player

Journey through the Troll's cave and find all the stolen booty he has hidden there. You'll face many dangers as you wander through the underground maze, trying to discover its secrets. Can you get the priceless ruby from the deadly King Cobra? Can you determine what the strange inscription means, or why evil eyes watch your every move? Your computer is your eyes and ears in this challenging puzzle--you command it to move through the passages and manipulate objects it finds in this strange world. You may come out rich...if you make it out alive!

LOADING THE PROGRAM: Insert the program cassette into the tape drive. Depress the RESET button, press the "L" key, rewind the tape if necessary, then depress the READ cassette button to load the program into your computer.

PLAYING THE GAME: When the program first loads, the computer asks you if you have a partially completed game on tape that you want to enter ("SAVED GAME?"). If you have saved a game on tape and want to reenter it, see "RE-ENTERING SAVED GAME" in these instructions. If you have not saved a previous game, type "N" to proceed.

On the top of your screen, the computer tells you where you are and in what directions you can obviously move. For example, you might see

BEDROOM
N,E,U,D

There are six directions in which you can move. They are north (N), south (S), east (E), west (W), up (U), and down (D).

On the other part of your screen, the computer tells you what it sees and asks you for instructions ("WHAT NOW?"). For example, you might see

BENCH
CUP
ARCHWAY
WHAT NOW?

At the WHAT NOW? prompt, you enter instructions you want your computer to perform. In addition to the direction codes, you can instruct your computer with simple one or two word commands. For example, you might say

WHAT NOW? TAKE CUP

Conclude any instruction to your computer by pressing the "CR" key. If you type in something the computer does not understand, it will respond

WHAT?
WHAT NOW?

Sometimes you can move to a specific place by typing GO and the place. For example,

WHAT NOW? GO ARCHWAY

Some room descriptions may scroll off the screen. If this happens and you want to review the room and its contents again, type

WHAT NOW? LOOK

and the computer will repeat the information for you. If you want to review what you are carrying, type "I" for inventory. To look more closely at an item you find, use the EXAMINE command.

WHAT NOW? EXAMINE BENCH

ITS VERY HEAVY

Treasures are identified by a plus sign (+) preceding them. For example,

WHAT NOW? LOOK

+DIAMONDS
TABLE

At any time, you can find out how many moves you have taken and what your current score is by typing "SCORE".

The computer reads only the first three characters of each command word, so you can abbreviate your commands if you wish. For example, it understands

WHAT NOW? EXA BEN

as an instruction to examine the bench. Your computer knows over 100 words. If it does not understand something you say, try another word. Part of the fun of ADVENTURE is discovering how to communicate with your computer! Some of the words it knows are: LOOK, EXAMINE, DROP, GET, GO, and READ.

SAVING PARTIALLY COMPLETED GAMES: Because ADVENTURE is not a game you complete quickly, it contains an option to save your partially completed game on tape. To use this option, type the "SAVE" command. You will then see a read-write screen displayed. Remove the Adventure cassette and insert a blank data tape. Then depress the READ and WRITE cassette buttons and press the "W" key. Note that the Interact does not have an erase head, so you must not save a game over a previous game or you will lose both. Before hitting the "W" key to save the game on tape, you can press the "S" key to turn on the tape motor. Then depress the READ cassette button to position your tape past any material existing on the tape before you continue the writing sequence. When you have saved your game on tape,

can press the "CR" key to continue the existing game. If you accidentally hit reset, you can resume the game by answering "Y" to the CONTINUE? prompt.

RE-ENTERING A PARTIALLY COMPLETED GAME: When you load the ADVENTURE program, the first question you are asked is "SAVED GAME?" To reload a partially completed game, answer yes ("Y") to this query. The computer will display the read-write screen. Remove the ADVENTURE cassette from the tape drive and insert the cassette containing your game. Use the "S" key to turn on the tape motor and position the tape appropriately. Then depress the READ cassette button and press the "R" key to read in your saved game. The computer will then ask you "CONTINUE?" Type "Y" to begin the game where you left off.

MORE ABOUT ADVENTURE: If you want to learn more about ADVENTURE in general, we suggest you consult the following references:

SOFTSIDE MAGAZINE. Special ADVENTURE issue, July 1980

CREATIVE COMPUTING. Special ADVENTURE issue, July 1980

RECREATIONAL COMPUTING. Fantasy simulation games issue, July-August 1980

BYTE. Special ADVENTURE issue, December 1980

HELP!!!: At any time during your journey, you can type HELP to get a clue from your computer. Sometimes these clues are helpful, sometimes they are not. In general, try looking around, examining things, and trying different courses of action. If you can't get past something, go back and see what objects you find. Try the logical first, and if that doesn't work, try the odd or unusual. The puzzles are difficult, but a 13-year-old has successfully solved them.

And, if you ever get absolutely stuck and can't go any further, you have one last resort. Send us a note describing how far you have gotten and what your problem is (if you know it). Include a self-addressed, stamped envelope, and we will send you back a clue to help you along.

GOOD LUCK, AND HAPPY ADVENTURING!!!

Interact Microchess Program Guide

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer.

Introduction to Interact Microchess: This program, as designed by Peter Jennings, is a complete, tournament-style chess game - you play against the computer like you would against any human opponent. Microchess is designed to give beginning and intermediate chess players all the competition they can handle but it cannot beat expert players. Chess is so complicated that even the world's biggest and fastest computers cannot defeat expert human chess players.

Selecting Game Options: When the program is ready the computer will ask you to "CHOOSE OPPONENT I.Q. LEVEL, 1 = BEGINNER, 2 = NOVICE, 3 = INTERMEDIATE." Depress the "1", "2" or "3" key to determine the computer's skill level. (Note, the higher the computer skill level, the longer it will take for the computer to make a move., e.g. Level 1 moves take one to ten seconds (average of 7 secs.), Level 2 10-30 (20), and Level 3 30-120 (30).) The next option is "DO YOU WANT TO PLAY BLACK OR WHITE?" Choose the "B" key for black chessmen or "W" key for white. After all options are chosen, the game begins.

How the Computer Moves: The computer indicates its move by flashing the "from" square, then flashing the "to" square and then moving from the "from" square to the "to" square.

How You Move: Using the left joystick control, move the flashing index light over your "from" square and depress the hit button. Next, move the flashing index light over the desired "to" square and depress the hit button again. If the move is legal, the computer will register your move on the screen. If the move is illegal - e.g. you don't move your king out of check - the flashing index light will start blinking again and you must make another move.

Checkmate And Resignation: If you checkmate the computer, it will indicate defeat on the screen. If you stalemate the computer's king it will also admit defeat on the screen. If the computer is playing at Level Three I.Q. and checkmates you, it will say so on the screen after you depress the joystick hit button. If it is playing at Level One or Level Two, it will wait for you to resign. To resign the game, hold the CONTROL key and type the "S" key. You may resign from the game at any time. After you resign, the computer will ask "NEW GAME? Y = YES". Type the "Y" key and the computer will ask you for new game options and display a new game board.

Changing The Computer's I.Q. During The Game: You may change the computer's I.Q. level at anytime, simply by typing the "1", "2" or "3" key to indicate the new skill level. (Note, the computer will not change levels during the middle of a move.)

Special Moves (Castling, En Passant, Pawn Promotion): The

Video Chess Program Guide

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer.

Introduction to Video Chess: This versatile program is designed for two players to play chess and use the TV screen as the game board. The computer acts as referee and allows special moves like en passant, castling and pawn promotion. This program also lets you save game records on tape for later replay and analysis.

Selecting Game Options: After the program is loaded, the following "menu" appears: "N = NEW GAME, R = READ TAPE, W = WRITE TAPE, S = STEP THRU GAME, P = PLAY, CONTROL KEY + S = STOP". If you ever need to refer back to this menu, hold down the CONTROL key and type the "S" key.

New Game: To start a new game, depress the "N" key after the menu is displayed. When the chess board appears, make sure two joysticks are plugged in - one for each player. The left joystick controls the "white" pieces and moves first. The right joystick moves the "black" pieces. To move, guide the joystick to position the flashing index light over the piece you want to move. Depress the hit button and then move the index light to the square where you want to go. The computer will move the piece for you.

Step Thru Game: To review game moves, depress the "S" key after the menu is displayed. This takes you back to the start of the game and shows the first move. To see each subsequent move, depress the "S" key again or depress any joystick hit button. After the last move is recalled from the computer's memory, the computer will automatically switch into the PLAY mode to let you continue the game.

Play: You may interrupt the STEP THRU GAME function whenever you want to play by depressing the "P" key. The flashing index light will reappear in the appropriate corner, depending upon who goes next. Play resumes as in NEW GAME.

Reading Tape: To recall a record of game moves from a Data Tape, hit the "R" key after the menu is displayed. The computer will tell you to "INSERT TAPE, THEN TO REWIND, PUSH REWIND, TYPE 'R', WAIT, THEN TYPE 'CR'". This means you insert the pre-recorded Data Tape and rewind it by depressing the tape deck's REWIND button, type the "R" key, wait for the tape to rewind and then depress the "CR" key. After this, the computer will ask you to "PUSH READ, THEN TYPE 'R'". This means you depress the tape deck's READ button and type the "R" key. The screen will flash "READING TAPE" while the computer loads the taped information into its memory. When the tape deck shuts off, disengage the READ sequence by depressing the STOP button.

Writing Tape: To save a record of game moves for later recall and analysis, type the "W" key after the menu is displayed. The computer will tell you to "INSERT TAPE, THEN TO REWIND, PUSH REWIND, TYPE 'R', WAIT, THEN TYPE 'CR'". This means you insert the blank Data Tape and rewind it by depressing the tape deck's REWIND button, type the "R" key, wait for the tape to rewind and then depress the "CR" key. After this, the computer will ask you to "PUSH READ AND WRITE, THEN TYPE 'W'". This means you depress the tape deck's READ and WRITE buttons at the same time and type the "W" key. The screen will flash "WRITING TAPE" while the computer transfers the game record from its memory to the tape. When the tape deck shuts off, disengage the WRITE sequence by depressing the STOP button.

- *CLEAR: Clear the screen.
- *FLASH: Flashes the screen.
- *BUZZ: Makes a buzzing noise.
- *BEEP: Makes a beeping noise.
- *ALARM: Makes an alarming noise.
- * A single asterisk (*), followed immediately by depressing the "CR" key puts a blank line on the screen.
- *SOUND(M S): Allows you to create custom sound effects. The "M" number can only be from one to seven. The "S" number can be from zero to 32767. Experiment for different results.

*COLOR(A, B) Selects two colors for message display enhancement. Number "A" is the background color, number "B" is the text color. Zero = black, 1 = red, 2 = green, 3 = yellow-orange, 4 = blue, 5 = violet, 6 = turquoise and 7 = white. Experiment with different color values to achieve desired effects.

Writing Tape To Save Messages For Replay: You may save line-numbered messages on tape for future reference and display. Follow these steps: 1) Remove the program tape and insert a blank Interact Data Tape. 2) Type the REW command and rewind the tape if you want to start from the beginning. Press any key to tell the computer when the tape is rewound. 3) Depress the READ and WRITE buttons on the tape deck. 4) Type the SAVE command (and optional name if desired) and the "CR" key to write, or record the message on tape. When the tape deck shuts off, depress the STOP button to disengage the READ and WRITE buttons.

Reading Tape To Retrieve Messages: Follow these steps to read or play back messages from a Data Tape: 1) Insert the Data Tape. 2) Type the REW command and rewind the tape if you want to start from the beginning. 3) Depress the READ button on the tape deck. 4) Type the LOAD command (and message name, if applicable) and depress the "CR" key. After the message is loaded and the tape deck shuts off, depress the STOP button to disengage the READ button. (Note: if the computer is given a message name to search for it will pass over other messages and names to find that specific name. If there is no message on tape with that specific name, the computer will read to the end of the tape to search for it.)

Error Messages: If you incorrectly enter a command, the computer will ask "WHAT?" Re-enter the command correctly and re-type the command line. If an entered command includes a number too large for the

computer, it will ask, "HOW?" If you type a message with too many total lines (which hardly ever happens) the computer will say, "SORRY!"

Sample Messages: A sample message follows the program data on the tape. After the program is loaded, leave the READ button down. After "OK" appears type "LOAD" and "CR" key. When "OK" reappears type "SCROLL" and "CR" key. The sample message will appear. To stop the message and list its lines, hold down "CONTROL" key and type the "C" key. When "OK" reappears type "LIST" and the "CR" key.



MESSAGE CENTER

Management Series. Lets you create, edit and save word messages on tape for replay on your TV. Enhance your message with dramatic color and sound effects.

Message Center Program Guide

Loading Program: (See Owner's Guide.)

Entering Word Messages. When the program is ready, the TV screen will display the prompting message " > OK" in the upper left side of the screen. To enter a line of message words, type a line number next to the prompt (>) and type the words onto the screen from the keyboard. Each line may contain up to 17 characters (each space between words also counts as one character unit). After each line is entered, depress the "CR" key to register the line into the computer's memory and move on to the next line.

Editing Message Lines. If an error is made, depress the BACKSPACE key once for each character unit to be deleted, then re-type the correct message. To delete an entire line and go back to its beginning, hold down the CONTROL key and type the "X" key. To change a line, type the line number of that line and re-type the new message.

Adding Message Lines Between Other Lines. Additional message lines can be inserted between existing lines by typing a line number that lies between the existing line numbers. (See RESEQ command.)

Entering Commands. Special command words tell the computer what to do with the message lines you enter. The two kinds of commands used are 1) non-line-numbered commands which are activated when entered and 2) line-numbered-commands - preceded by an asterisk - which are activated when the computer reaches their line number. Just like messages, command words are registered with the computer after they are typed by depressing the "CR" key.

Non-Line-Numbered Commands. These are the non-line-numbered commands:

SCROLL. After all the message and command line numbers are entered they are displayed together on the screen - or scrolled - by the SCROLL command. Scrolling starts at the first line number and continues until you hold down the CONTROL key and depress the "C" key (CONTROL-C returns the program to the original prompting line " > OK"). To momentarily halt the scrolling message depress the TAB key; to restart depress the TAB key again. When you scroll, you may also specify a particular line number

to start at as well as how many complete times you want the message to scroll. To do this type SCROLL(N, T). The "N" stands for the beginning line number, the "T" number stands for how many times the message should be scrolled, e.g. "SCROLL(5, 7)" means to begin the message at line number 5 and scroll the message 7 times.

RESEQ. This command creates room for new line-numbered messages or commands by re-ordering, or re-sequencing existing line numbers e.g. if lines are numbered 6, 7 and 8 the RESEQ command will make them lines 10, 20 and 30.

SAVE name (line #). This command tells the computer to save line-numbered messages and commands on tape. For reference purposes, you may give your message an optional name. Type the name next to the SAVE command. (Also see Writing Tape.)

REW. This command turns on the tape deck to rewind the tape. Type the REW command, depress the "CR" key and depress the tape deck's REWIND button. When the tape is rewound, tell the computer by pressing any key on the keyboard.

NEW. This command erases the messages and commands in the computer's memory.

LIST N. This tells the computer to list and display on screen the current messages and commands in the memory. The "N" number following the LIST command stands for the line number where you want the list to begin from. If you type "0" or no number at all, the list will automatically start from the first line-numbered entry. As during the SCROLL function, you can also use the TAB key; depress TAB momentarily halt the list or re-start the list by depressing the TAB key again.

LOAD name. This command instructs the computer to load messages from a Data Tape. To load a taped message with a specific name for later reference type the name following the LOAD command. The computer will pass over other messages on the tape until it finds the message with the specific name you entered. If you type LOAD and a message name-but no message by that name exists on tape-the computer will endlessly search for that non-existent name.

Line-Numbered, Asterisk (*) Commands. These command words- always preceded by an asterisk (*) - are executed during the SCROLL function when their line number is reached. These commands are:

*PAUSE(N) Pauses for the number of seconds you enter in the parentheses

CONCENTRATION Program Guide

(For one or two players)

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and then depress the READ button, to load the program into the computer. (For one player use left joystick.)

Game Options: When the program is ready, the computer will ask "EASY GAME? Y=YES N=NO." The easy game option lets you see behind the doors when the game begins or when any doors are matched. When "N" is typed, players will not see behind a door unless it is chosen. The next option is "PLAYER OPTIONS: 1=ONE PLAYER 2=TWO PLAYERS C=PLAY COMPUTER." If you choose "C" the next option is "CHOOSE OPPONENT OPPONENT: 1=NOVICE 2=INTERMEDIATE 3=ADVANCED 4=EXPERT." If you choose "O", the computer will be an easy opponent. Choices "1" through "4" increase your computer opponent's skill.

Game Play And Scoring: After options are chosen, 42 squares or "doors" appear on screen. Behind each door is a color pattern which has an identical twin hidden behind another door. Players move the flashing index light via joysticks up, down, left or right in the search for matched pairs. To open a door, position the index light over the door and depress the joystick hit button to reveal the hidden pattern. The object of the game is to remember the location of each pattern and to match more pairs than your opponent. A player wins two points for every pair of doors correctly matched. A "W" behind a door indicates a wild card, which matches any pattern. The first player to get 20 points wins and the game ends. (In the one player option, 40 points wins.)

New Game: At the end of the game, the computer will ask, "SAME GAME? Y= YES N= NO." For the same options, type "Y" or depress the joystick hit button. For new options type "N."



DOG FIGHT Program Guide (For two players)

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks.

Entering Player Names: After the program is loaded, the computer will ask "LEFT PLAYER, TYPE YOUR NAME". Use the backspace key to erase any errors and type a maximum name length of ten characters. When finished, type the "CR" key and the computer will ask "RIGHT PLAYER, TYPE YOUR NAME". When finished, type the "CR" key and play will begin.

Game Play And Scoring: The game begins as two fighter planes enter the screen from opposite sides. If you crash into the control tower in the center of the screen your opponent wins one point and play will restart. Before actual combat starts, both planes must fly above or below the control tower, it will disappear and the guns will activate. To maneuver your airplane, push the joystick forward to dive and pull it back to climb. Leave it in the center to maintain course. Push the hit button to fire at the other plane. Bullets may "wrap around" screen (if they miss you and shoot off the screen they will return to play from the opposite side). The planes also "wrap around" screen. The object of the game is to shoot down your opponent. After you shoot down the other plane, the computer stops action and awards the winner one point. The score is displayed on screen between rounds. When one player gets 20 points, the computer will end the game, show the final score and display the winner's name.

New Game: After the end of a game, the computer automatically starts a new game.

BLACKJACK Program Guide (For one or two players)

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and then depress the READ button to load the program into the computer. Plug in joysticks (left joystick for one player).

Game Options: When program is ready the computer will ask "ONE OR TWO PLAYERS?" For one player against the dealer/computer, type "1." For two players type "2."

Shuffling Cards: The computer will display "SHUFFLE" while it randomly sorts the 52 card deck. To stop shuffle and start the game, move joystick up.

Betting: The computer points a green arrow over your scoring area and asks "BET?" Your betting money comes from your BANK, which starts at \$500. Move joystick up to raise a bet, move it down to lower bet. For faster silent betting, depress the hit button while betting. To count cards, type "C" while you bet.

Hitting: After betting, move joystick left or right to fix bet, advance play to other player or make the computer deal. After dealing the computer asks "HIT?" If you want another card (up to five cards total) move joystick up. To "stick", move joystick down.

Doubling: To double your bet, move joystick left or during the HIT sequence (only on the first card taken). After your hand is played, the computer will add or subtract your doubled bet from your bank. If you double, your bet stays doubled for the next hand.

Winning And Losing: After HITTING, the computer reveals the dealer's hand and declares who won, "busted", "pushed", or "charlied" or got "blackjack". If your hand wins your bet is added to your bank. If you lose, your bet is subtracted from your bank. Maximum winnings are \$999,995. Maximum bet is \$995. For a new hand, push joystick up.

LOANS: If your bank runs out of money, the computer will ask "LOAN?" if you want a loan, push joystick up and the computer will deposit \$200 total in your bank.

Background Sound/Music: When the computer asks "BET", you may insert a music tape or interact Casino sound tape, depress the REWIND button, hold down the CONTROL key and depress "T" to rewind tape, when rewound depress the READ button and the tape will play through the TV's speaker while you play.

Blackjack Rules & Strategy: See "The New Complete Hoyle" by Morehead Frey and Matt Smith or "Scientific Blackjack" by Coliver.

REGATTA Program Guide (For one or two players)

Loading Program. Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks.

Game Options. When the program is ready, the computer will ask "1 or 2 PLAYERS? 1=ONE 2=TWO". Type "1" for a one player practice game (and use left joystick), or type "2" for two player competition. Next the computer will ask "LIT GATES? Y=YES N=NO." Lit gates mean that the race gates light up with the color of your ship after you successfully sail through. Unlit gates do not change colors, so it is more difficult to remember which gates you've passed through.

Game Play And Scoring. After options are chosen, the computer will display a slalom race course, complete with randomly placed gates. The left joystick controls the red boat, the right joystick controls the white boat. Joysticks control motion up, down, left, right and diagonally. To speed up boats, hold down the joystick hit button.

The object of the game is to sail through all the gates as quickly as possible without bumping into anything. Each time you collide with a gate or the edge of the race course, the computer will assess you with one point. If you crash into your opponent's boat, you are assessed three points. As soon as the first boat finishes the course, the computer clock will appear on the lower center of the screen. It times the number of seconds it takes for the second boat to finish. The second boat is penalized one point for every late second. The winner is the boat with the lowest overall point total. 99 means automatic defeat.

New Game: Either player may depress a joystick hit button for a new game

TRAILBLAZERS Program Guide (For one or two players)

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks (left joystick for one player).

Game Options: When program is ready, the computer will display "PLAYER OPTIONS. 1=ONE 2=TWO C=PLAY COMPUTER" Next, the computer will ask "CACTUSES? Y=YES N=NO." For random cactus barriers on screen, type "Y". If not, type "N". Next the computer will ask "WRAP AROUND? Y=YES N=NO." If you want the TV screen's edge to act as a trail barrier, type "N". If you want the trail to leave the screen, "wrap around" and re-enter the picture from the opposite side, type "Y". Finally, the computer will ask, "CHOOSE PACE. 1=SLOW 2=MEDIUM 3=FAST 4=SUPER FAST 5=ACCELERATION." Acceleration begins at pace one and increases to pace four.

Game Play and Scoring: After you've decided the game options, the game field will appear. Left Player's color trail starts on the screen's left side and moves across the screen to the right. Right Player starts from the right side. The joystick moves the trail's direction up, down, left or right. The object of the game is to avoid hitting cactuses, your own trail, the screen's edge (if not in "wrap around" mode) or your opponent's trail. Each of your hits is scored one point for your opponent. The first player to get ten points wins.

New Game: To play another game with the same options, answer the computer's "SAME GAME? Y=YES N=NO" question by typing "Y" or depressing a joystick hit button. For new options type "N".

COMPUTER MAZE Program Guide

(For one or two players)

Loading Program. Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks.

Game Options. When program is ready, the computer will ask, "Visible MAZE? Y=YES N=NO." Type "Y" if you want to see the Maze, "N" if you don't. The computer will still flash a brief glimpse of the maze if you choose "N". The second option is "1 or 2 PLAYERS? 1=ONE 2=TWO." Type "1" if you're playing alone and use left joystick. Type "2" for two players. Third, the computer will ask "PLAYER PACE? F=FAST S=SLOW." Next option is "CAT? Y=YES N=NO." If you want a computer-controlled "cat" to enter the Maze and try to eat your "mouse", type "Y". For no cat, type "N". Final option is "CAT PACE? F=FAST S=SLOW." Type "F" for a rapidly hunting cat, "S" for a slow cat.

Game Play And Scoring. After options are chosen, the computer will draw a maze pattern on the screen. Each maze is different. Player "mice" enter the maze from the top. Left player is red, right player is blue. Movement is controlled by joysticks, up, down, left or right. To cover your path so your opponent can't follow you, hold down the hit button as you move. Each player receives one point when escape from the maze is made at the bottom exit. If the cat plays, the number of "mice" it has eaten appears in the center of the on-screen scoreboard.

New Game. At the end of each game, the computer will ask "SAME GAME? Y=YES N=NO." For the same options, type "Y" or depress a joystick hit button. For new options, type "N".

BIORHYTHM Program Guide

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer.

Entering Information: When the program is ready, the computer will say, "THIS IS A PROGRAM TO PLOT YOUR BIORHYTHM. ENTER YOUR NAME,." Type your name onto the screen via the keyboard. If you make a mistake, depress BACKSPACE to erase your error and re-type your entry. When finished, depress "CR" key. Next, the computer will request, "ENTER YOUR DATE OF BIRTH AS FOLLOWS, MONTH / DAY / YEAR 03 / 23, 1971." Use this format to type in your birthdate. Depress the division sign key instead of the slash mark (/) to separate day, month and year. When finished, type "CR" key. Next, the computer will tell you to "ENTER THE DATE YOU WISH TO SEE PLOTTED." Type this date the same way you typed your birthdate.

Chart Display: After you've entered all necessary data, the computer will address you by name and tell you how many days you have been alive. Next, your biorhythm chart will be displayed. The horizontal bar shows a six week period and reads left to right, starting from the date you entered. Seven days are represented by each notch. The green curve is the physical energy cycle, the red curve is emotional and the white curve is intellectual energy.

Advancing Chart: To see beyond the six week chart, type the "7" key. This adds one week to the right of the chart and deletes one week from the left. You move the chart into the future every time you depress "7."

New Chart: For a new chart for a new date for the same birthday, type the "CR" key to return to "ENTER THE DATE YOU WISH TO SEE PLOTTED." To go back to the beginning for a new birthdate and chart date, type the TAB key.

Facts About Biorhythms: Consult Gittleson's "Biorhythm, A Personal Science" or contact Biorhythm Research, Inc. in Atlanta, Georgia.

SHOWDOWN Program Guide (For two players)

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks.

Game options: When the program is ready, the computer will ask "MAX. SCORE? (1-99)". Type in the maximum score and depress the "CR" key when finished. The next option is "RICOCHET? Y=YES N=NO". If you want bullets to bounce off the edge of the screen and return to play, type "Y". Type "N" if you want bullets to disappear if they are shot off the screen. Next, the computer will ask "WAGON OR CACTUSES?" If you want a moving wagon obstacle to appear between the gunslingers, type "W". If you want random cactus barriers, type "C". You may "shoot away" the cactuses protecting your opponent while you shoot through the cactuses protecting you.

Game Play And Scoring: After all the options are chosen, the computer will display two gunslingers and a wagon or cactuses. Before each round, the score will appear at the top of the screen, then disappear when the computer says "DRAW". The joysticks move the gunslingers up, down, left or right. The joystick control knob is turned to raise or lower each pistol's aim. The hit button is depressed to pull the trigger. Each player has only six bullets. If both players shoot and miss with all six bullets, a new round will automatically begin. The object of the game is to shoot your opponent's gunslinger before it shoots you. You win one point each time you shoot the other gunslinger.

New Game: As soon as one player reaches the pre-set maximum score (1-99), the computer will announce the winner, then ask "SAME GAME? Y=YES N=NO." For the same game and same options, type "Y" or either player may depress a joystick hit button. For a new game and new options, type "N".

INTERACT

FINANCIAL

NEWS

TECHNICS INC.

The **INTERACT** **PERSONAL** program tape contains four Level II BASIC programs to help you manage your stock portfolio. These programs, like all Interact applications, emphasize ease-of-use and straightforward analysis. Each of the programs is run from Level II BASIC on any 16K Interact Model C or personal computer. Detailed instructions for each program are provided on the following pages:

- INTRO** tells you about each program on the tape. Information includes the program name, its capabilities, how to load it, and how to run and edit it.
- DEFINER** helps you prepare and edit data about your holdings, and produces a Data File for input to **REPORTER** and **INCOME ANALYZER**.
- REPORTER** helps you analyze gains and losses for each stock or for the portfolio as a whole. It also helps you analyze the effects of potential prices and buy/sell decisions, and the performance of alternative portfolio compositions.
- INCOME ANALYZER** focuses your attention on dividends, yields, and P/E and payout ratios of your stocks—individually or for the whole portfolio. **INCOME ANALYZER** also helps you analyze the income effects of alternative portfolio compositions.

See your Interact dealer for these other personal finance aids:

- FINANCIAL LIBRARY II** provides more BASIC programs to help you evaluate borrowing alternatives, compute your equity, calculate your net worth, and analyze and forecast trends.
- CHECKBOOK BALANCER** eases the monthly chore of balancing a checkbook and your checking records. The program keeps uncleared entries on tape for input, output, and air. It also prepares a tape of your expenditures for input to programs in the **Household Budgeting System**.
- HOUSEHOLD BUDGETING SYSTEM** is a series of programs which help you plan your budget and track your progress against your plan. The library encompasses a ready-made budget account system of detail and summary expenses and income categories. It lets you budget for a contingency.

INTRO Program Guide

Loading the Program

To load INTRO, first load Level II BASIC in the normal manner if it is not already loaded. Then insert the FINANCIAL LIBRARY I tape into the cassette deck. Type "LOAD "INTRO"" followed by a CR. Push the REWIND cassette button to rewind the tape if necessary. Press the READ cassette button to load the program. Type a "RUN" command to start the program.

INTRO produces a screen-to-screen description of each library program. Press a "CR" to move one screen to the next. The program prints an "OK" message when you reach the end of the program descriptions. To load another library program, simply follow the instructions in the Program Guide for the program you want to run next.

DEFINER Program Guide

Introduction

DEFINER works with REPORTER and INCOME ANALYZER to help you analyze your stock portfolio. You tell DEFINER about your holdings, and it helps you prepare or update a Data Tape for input to the other programs, where your holdings may be analyzed and reported.

Loading the Program

If it is not already loaded, load the Level II BASIC language tape in the usual manner. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY I tape into the cassette deck. Type "LOAD "DEFINER"" followed by a CR. Push the REWIND cassette button to rewind the tape if necessary. Push the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Entering Your Stocks

DEFINER first asks if you already have stocks on a Data Tape previously prepared by DEFINER. Press "Y" for yes to receive instructions for loading the Data Tape. Press "N" for no if you don't have a tape, and DEFINER prompts you for information to be typed in from the keyboard. For each stock, you are asked for a name (up to 10 characters ignoring the number of characters held), the total cost of the shares, the last 12 months total earnings, share, and the per share annual dividend. Type in each

item when asked for it. Follow each item value with a "CR". You may work with a maximum of 25 stocks. If you do not have information on a stock, enter zero when asked for it. These items. You will still have all items necessary for analysis using REPORTER. However, since the INCOME ANALYZER works primarily with earnings and dividends, you may not get useful reports from the program if you only earnings and dividend information on a stock.

Options

DEFINER first asks "WHAT TO DO?" and displays a menu of options. Press the code from the list to get the option you desire.

- 1 END STOCKS** Produces a report for each stock, showing all input items. Press "CR" to proceed to the report for the next stock. Press "H" after any report to halt the listing and return to the options menu.
- 2 TAPE SAVE** Saves your portfolio on a Data Tape for input to other library programs. Instructions are displayed when you request this option. Because your Data Tape may have an extra long header if it is recommended that you start recording after a blanking the tape a few times. To be successful, the following instructions given by DEFINER must not take the CR immediately after the tape is rewound. Rather, press the READ cassette button and advance the tape a few turns. Then press "CR" and continue to follow the instructions as they are displayed as the tapes are written. You hear several series of beeping noises separated by longer tones as DEFINER writes streams of data onto each of your stocks.
- 3 ADD A STOCK** Asks you to type in information about a new stock to add to your portfolio. Type in each value when asked for it. Follow each value with a "CR". You may work with a maximum of 25 present stocks.
- 4 REWIND A STOCK** Asks for the name of a stock, then deletes all holdings of the named stock from the portfolio.
- 5 COST** Asks for the name of the stock for which you want to change the total cost. Then asks for a new cost.
- 6 NAME** Asks for the name of an existing stock. Then asks you for a new name for it.

**SHARE
HOLD** Asks you for the name of the stock for which you want to change the number of shares held, then asks for the new number of shares.

E EARNINGS Asks you for the name of the stock for which you want to change the annual earnings. Then it asks for a new earnings.

D DIVIDEND Asks you for the name of the stock for which you want to change the annual dividend amount per share. Then asks for the new dividend.

To reflect the purchase of shares of an existing stock, a stock split, or share dividend, change the number of shares held to reflect the new total. Then change the total cost to include the new purchase cost if it is. To reflect the purchase of a new stock issue in which you had no prior holdings, select the NEW option. To reflect the sale of part of your holdings, enter the shares held and the total cost. To record the sale of a holding in a stock, select the REMOVE option. Use other options as needed to reflect new earnings and dividend amounts for stocks in your portfolio.

You may use REFINER to prepare several Data Tapes of different portfolios. Make sure to label the Data Tape so you know which portfolio is stored on which tape.

Loading Other Library Programs

When you have finished making a Data Tape of your current portfolio, press RESET and "R" and type a "RUN" command to run REFINER so you can make or edit other portfolio tapes. To run REPORTER or INCOME ANALYZER, press RESET and "R". After you get an "OK" from BASIC, follow the instructions on the screen to load the program you want to run next.

REPORTER Program Guide

Introduction

Now you can easily produce meaningful reports about your stock portfolio. REPORTER needs a Data Tape of information about your stock portfolio by DEFINER. Then it is you who analyze your portfolio to evaluate gains or losses for each stock, to set the selling price for current or potential prices, or evaluate the performance of alternative portfolio positions.

Loading the Program

If it is not already loaded, load the Level II BASIC tape into your total memory. After you get an "OK" from BASIC, insert the

REPORTER LIBRARY Disk into the cassette deck. Type "C" (LOAD) "R" (RUN) followed by a "CR". Press the REWIND cassette button to rewind the tape if necessary. Push the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Entering your Portfolio

REPORTER gets information about your portfolio from a Data Tape prepared by DEFINER. If you do not have such a Data Tape, run DEFINER Program Guide. If you have a tape, follow REPORTER's instructions to load it.

Entering Prices

After loading your portfolio, you are asked to type in a price per share for each stock. The name of each stock and your average cost share price should be before you are asked for the stock's price. To analyze actual portfolio performance, enter current prices. To evaluate performance based on yield calculations, enter your request for each stock. Enter sell values with "CR". You may enter prices using the decimal point of using the tenths. For example, a stock price of \$24.16 share may be entered as 24.16 or 24.1 2. Use the "=" key for the slash. For fractions,

Options

REPORTER next asks "WHAT NEXT?" and displays a menu of options. Press the first letter of the option you desire.

Total Stocks Displays the current worth, original cost and delta and % gain or loss for the entire portfolio. REPORTER also displays the current balance in a special "cash account." The cash account balance starts out at \$0.00. The account balance is re-computed as you "buy" and "sell" stocks using the BUY and SELL options described below. Press "CR" to return to the options menu.

Exit Stocks Displays a report for each stock showing shares held, price, value based on the price you entered, purchase cost, dollar and % gain or loss, and the stock's percentage of the worth of the entire portfolio (stock) which exhibit a gain of 10% or more or a decrease of 10% or more on

displayed on red, all others use a yellow background. This allows you to move quickly through reports and easily identify the high gain, loss stocks. Press a "CR" after a report is displayed to see the report for the next stock. Press an "H" after any report to halt reporting and return to the options menu.

- Display Stock** Produces the same report as **TOTAL STOCKS**, but for one stock only. Enter the name of the stock to report when asked, followed by a "CR". Press a "CR" to remove the report from the screen and return to the options menu.
- On the Stock** Asks for the name of a stock to omit temporarily from calculations and reports. The stock is still on your Data Tape, and may be put back into calculations and reports by using the "RESTORE" option described below. After omitting a stock, use the "TOTAL STOCKS" option to see if your portfolio would have performed better without the omitted stock.
- Restore Stock** Puts the omitted stock whose name you specify back into calculations and reports.
- Price Change** Allows to enter a new "current" price for the stock you name. The new price is used in further analyses and reports.
- Buy** Asks you for the name of a currently held stock, then asks how many shares you wish to "purchase" at the current price. The cost of the specified purchase is subtracted from the current balance of the cash account included in the **TOTAL STOCKS** report, and your additional holdings are included in further analyses. Your holdings information on your Data Tape is NOT changed.
- Sell** Asks you for the name of a currently held stock, then asks how many shares you wish to "sell" at the current price. Proceeds from the "sale" are added to the current balance of the cash account included in the **TOTAL STOCKS** report, and your "sale" is subtracted from your holdings information on your Data Tape. Your holdings information on your Data Tape is NOT changed.

Loading Another Library Program

Press **RESET** and "**R**", then type "**RUN**" to rerun **REPORTER** with another portfolio Data Tape. To run **DEFINER** or **INCOME ANALYZER**, press **RESET** and "**R**". After you get an "**OK**" from **BASIC**, follow the loading instructions in the Program Guide for the program you want to run next.

INCOME ANALYZER Program Guide

Introduction

INCOME ANALYZER helps you analyze and report dividend income, yield, and P/E and payout ratios for your portfolio. **INCOME ANALYZER** also helps you analyze the income effects of alternative portfolio compositions, taxable dividends, and so on.

Loading the Program

If it is not already loaded, load the Level II **BASIC** language tape in the usual manner. After you get an "**OK**" from **BASIC**, insert the **FINANCIAL LIBRARY I** tape into the cassette deck. Type **CLOAD "INCOME"**, followed by a "CR". Push the **REWIND** cassette button to rewind the tape if necessary. Push the **READ** cassette button to load the program. After you get an "**OK**", type a "**RUN**" command to start the program.

Entering Your Portfolio

INCOME ANALYZER gets information about your holdings from a Data Tape prepared by **DEFINER**. If you do not have such a tape, see the "**DEFINER** Program Guide". If you have a tape, follow **ANALYZER**'s instructions for loading it.

Entering Prices

After loading your portfolio, you are asked to type in a price per share for each stock. The name of each stock and your purchase cost (share are displayed before you are asked for the stock's price. To analyze actual portfolio performance, enter "current" prices. To evaluate performance based on your expectations, enter your forecast for each stock. Follow each page with a "CR". You may enter prices using the decimal part in eighths fractions. For example, a stock price of \$24.50 share may be entered as 24.5, 24.50 or 24.12. Use the

key for the desired two fraction.

Options

INCOME ANALYZER next asks "WHAT NEXT?" and displays a menu of options and codes for them. Press the code for the option you desire.

- Get Data** - Displays the current worth, annual dividend, and current % yield for the entire portfolio.
- List Stocks** - For each stock, displays number of shares held, current price per share, annual total dividends, % yield, % of portfolio dividend income contributed by the stock, and current P/E and payout ratios. Press "CR" to see the report for the next stock. Press "CH" after any report is displayed to halt reporting and return to the options menu.
- Display Stock** - Produces the same report as LIST STOCKS, but for one stock only. Enter the name of the stock when asked, followed by a "CR". Press a "CH" to remove the report from the screen and return to the options menu.
- Omit a Stock** - Temporarily omits a stock from further analyses. The stock may be put back into reports and analyses using the RESTORE option described below. Use the TOTAL STOCKS option after omitting a stock to see how your portfolio would have performed without the omitted holding. Your Data Tape is NOT affected by OMIT.
- Restore Stock** - Puts the omitted stock whose name you enter back into analyses and reports.
- Price Change** - Allows to enter a new "current price" for the stock you name. The new price is used in further analyses and reports.

Loading Another Program

Press RESET and "R" then type a "RUN" command to load ANALYZER with a new Data Tape. To run OFFINER or REPORTER, press RESET AND TYPE "R". After you get an "OK" from BASIC, follow the loading instructions in the Program Guide for the program you want to run next.

TOUCHDOWN Program Guide (For Two Players)

INTRODUCTION: TOUCHDOWN is a colorful "game" that provides drills in addition, subtraction, multiplication and division at skill levels you select.

LOADING THE PROGRAM: Insert the TOUCHDOWN cassette into the tape deck. Press the RESET button, then the "L" key. Press the REWIND cassette button to rewind the tape if necessary. Press the READ cassette button to load the program.

SELECTING GAME OPTIONS: First, you are asked to type in two team names. Type in each name, using the backspace key as necessary to erase errors. Press the "CR" key after typing in each name. Names must be 10 characters or less in length. Next, you are asked to select addition, subtraction, multiplication, division or varied (for addition, subtraction and multiplication in one game). Press the key for the code for the option you desire, as shown on the list on your screen. Next, you are asked for a game time limit between 1 minute and 60 minutes. Type in the number of minutes to allow for the game, then press the "CR" key. Next, you are asked for the highest number to use in problems for each team. You may use different numbers for each team. Valid numbers are 3-99 for addition, subtraction, multiplication or varied games and 10-99 for division games. Type in the number for each team, followed by a "CR". Finally, you are asked for a "play time limit" for each team — that is, the amount of time each team is allowed to answer each problem. Type in the number of seconds, from 1-60, then press the "CR" key. Please note that skill levels are set by the "highest number" question and the problem time limit. Since you can specify these for each team separately, you can therefore set different skill levels for the two "teams".

HOW YOU PLAY: After you have selected game options, a football field appears on the screen with "yardlines" marked by numbers within the range you selected for problems. The color of the football matches the color of your score at the bottom of the screen when it is your turn. The operation (+, -, x, ÷) appears on the football. At the beginning of each "down", the second number to use in the problem appears below the football. For example, if a ball marked with a "+" lies on a yardline marked with a "3" above the ball, and a "6" appears below the ball, the problem is "3 + 6". The clock in the center at the bottom of the screen begins the count down toward your problem time limit. You have until the clock reaches zero to type in your answer, followed by a "CR". If you answer correctly within the time limit the ball advances 10 yards and a new problem is presented. If you answer incorrectly or fail to answer within the time limit, the correct answer is displayed and the ball goes to the other team. A "touchdown" worth 7 points is scored when a team reaches the zero yard line. After each touchdown or turnover the time clock displays the number of minutes and seconds remaining in the game.

STARTING A NEW GAME: When the game time limit expires, the computer sounds bells, the screen flashes, and the name of the winning team is displayed. The computer then asks if you want to play the same game — that is, a game with the same options. If you answer "Y" or press the hit button on the left joystick, a new game begins immediately. If you answer "N", the computer shows all options again, allowing you to make new choices.

Reversi Program Guide (For one or two players)

Introduction: Reversi is a white-versus-black, two-player game. A player moves by placing a piece in a square on the board. The first two moves by each player must place pieces in one of the four center squares. Each succeeding move must "outflank" one or more of the opponent's pieces. To "outflank" your opponent, you must place a piece so as to surround one or more of your opponent's pieces with your own on two sides — horizontally, vertically or diagonally. The pieces you surround change from your opponent's color to yours. If at anytime during the game a player cannot surround his opponent anywhere on the board the player loses his turn. The game ends when neither player can move or when the board is filled. The winner is the player with more pieces of his color on the board at the end of the game.

Loading the Program: Insert the REVERSI cassette into the tape deck. Press the RESET button and press the "L" key. Press the REWIND cassette button to rewind the tape, then press the READ cassette button to load the program into the computer.

Selecting Game Options: To play the computer, press the "C" key, to play another person, press the "2" key. The computer then asks, "LEFT PLAYER BLACK OR WHITE?" Press "W" to play white, "B" to play black. In games played against the computer, white always goes first. In two-person games the player controlling the left joystick always goes first regardless of the color he is playing. If you are playing against the computer it asks you to choose the level of skill. There are six skill levels ranging from beginner (0)

to "suicide" (5). Push the number for the level you desire. The beginner game is relatively easy to beat. The "suicide" level should challenge even the most skilled player. The amount of time the computer takes to move for each skill level is:

- Level 0 (Beginner), 4 sec.
- Level 1 (Novice), 5 sec.
- Level 2 (Intermediate), 8 sec.
- Level 3 (Advanced), 15 sec.
- Level 4 (Tournament), 50 sec.
- Level 5 (Suicide), 10 min.

The times given are approximate average move times. On particular moves, especially in the middle of the game, the computer may take considerably longer to respond.

How the Computer Moves: A flashing dot appears in the computer's chosen square. A bell rings and a piece of the computer's color appears in the square. All outflanked pieces are automatically reversed from your color to the computer's.

How You Move: If you are playing the computer, a flashing dot appears in the lower lefthand corner of the board when it is your turn. Use the left joystick to move the dot to your desired square, then press the hit button. If the move is legal it is registered as described above for the computer's moves. If your move is illegal a buzzer sounds, indicating that you must choose a different square. When two people are playing, left moves using the left joystick controls when the flashing dot appears in the lower left corner, right moves using the right joystick controls when the dot appears in the lower right corner.

HANGMAN Program Guide (For one or two players)

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and then depress the READ button to load the program into the computer. Plug in joysticks (use left joystick for one player).

Game Options: When the program is ready, the computer will ask "PLAY HANGMAN OR CREATE TAPE? P-PLAY T-TAPE". To play a game, type the "P" key. To create a tape see Writing Tape. If you depress the "P" key, the next option is "K-KBDT-TAPE". To enter the words via the keyboard, depress the "K" key. See Reading Tape if you want to enter words from a Data Tape.

Entering Words: The computer will ask you to "TYPE LEFT WORD". If you're entering words from the keyboard, have someone type the secret word while Left Player looks away. Type up to eight characters for each word. Remove errors with the BACKSPACE key. Type the "CR" key when finished. For two players, the computer will then ask "TYPE RIGHT WORD". Repeat the same steps for right word.

Game Play: After words are entered, the computer displays the game scene. Two rows of letters (A-Z) and the Hangman gallows. Move joystick left or right to select one letter for each turn. Push joystick up for top row letter, down for a bottom row letter. If you guess right, the letter will appear on the TV screen. Wrong guesses add a head, neck, arms, etc. to the Hangman. Play ends when one player guesses all the right letters or the other player makes enough wrong guesses to form a complete Hangman. The computer will then declare the winner, reveal the remaining hidden letters and begin a new game.

Writing Tape: To create a tape of game words, choose the "T-TAPE" option. Remove the program tape and insert a blank Data Tape. After the "T-TAPE" option is chosen, the computer will ask you to "TYPE LEFT WORD". Enter the word and type the "CR" key when finished. The computer will follow with "TYPE RIGHT WORD".

After you type the Right Word, type the "CR" key and the computer will repeat "TYPE LEFT WORD". Continue this sequence to enter as many words as you want (up to 200 words maximum). When finished, hold down the CONTROL key while you type the "W" key. The computer will tell you to "INSERT TAPE, THEN TO REWIND, PUSH REWIND, TYPE 'R', 'WAIT, PUSH 'CR' KEY". This reminds you to take out the program tape and insert a Data Tape. Push the tape deck REWIND button, type the "R" key, wait until the tape deck stops rewinding and then depress the "CR" key. The computer will then ask you to "PUSH READ AND WRITE KEYS, DEPRESS 'W'". This means, depress the tape deck's READ and WRITE buttons at the same time and then depress the "W" key. The computer will display "WRITING TAPE" shut off the tape deck and return to the first "PLAY HANGMAN OR CREATE TAPE" question. Depress the STOP button to turn off writing sequence.

(Continued on other side)

KNOCKDOWN Program Guide

(For one or two players)

Loading Program: Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks.

Game Options: When the program is ready, the computer will ask, "1 OR 2 PLAYERS? 1=ONE 2=TWO." Type "1" to play against the computer (and use left joystick). The computer will act as Player Two in the 1 Player option.

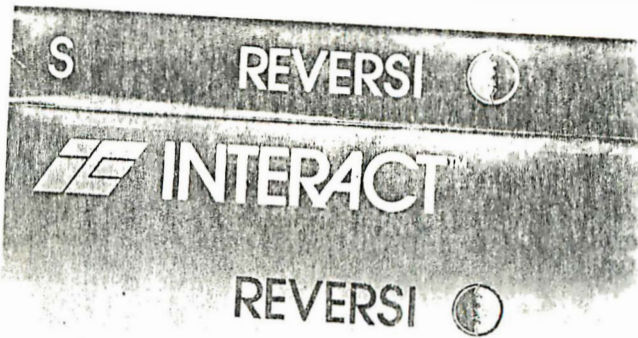
Game Play And Scoring: After option is chosen, the computer will display two rows of nine numbers (1-9). The computer will then roll a pair of dice between the rows. Next, a red arrow will point under the top row of numbers to indicate Player One's turn. Player One must choose the number from the row which equals the total roll of the dice or the two numbers matching the two dice. If neither option is available, select numbers which equal the sum of the dice. Numbers are selected by moving the arrow along the row via joystick until it points at the desired number. Depress the joystick hit button for each number you want. Numbers may be selected only once. If incorrect numbers are tried, the computer will make a sound and not allow the choice. When Player One finishes a turn, a new pair of dice are rolled for Player Two. Play goes back and forth until one of the players no longer has the right numbers that match the dice roll. The computer lets play continue for the remaining player until the other player runs out. At the end of the game, the player who accumulates the highest point total wins.

New Game: To play another game, either player may depress a joystick hit button.

Scoring: At the end of the game a bell rings several times. The computer then displays the final score on the screen. The player with the most pieces of his color wins.

Play Game: When the game ends, press the hit button on the left joystick. The computer then asks if you want to play the same game - that is, a game with the same options. Press the "Y" or the left hit button for "yes" and the game begins immediately. Press "N" for "no" and the computer reviews the list of options, allowing you to make new choices.

Strategy: Since the games are very similar, "How to Win at "Othello" by Goro Hasegawa with Maxine Brady provides a good overview of REVERSI strategies.



Strategy Series, Outflank your opponent but watch out for last minute reverses! Choose from six skill levels to play the computer or challenge another person to this ancient game of strategy.

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DKS

Saving Checking Entries: After preparing or by-passing the budget tape, CHECKBOOK BALANCER displays a message that it is ready to make the tape of uncleared entries for your next balancing run. The program also saves any cleared entries required next time to maintain a record of your running checkbook balance. Insert a Data Tape into the tape deck and follow the instructions displayed after the message.

M CHECKBOOK BALANCER



CHECKBOOK BALANCER

Management Series. Now it's easy to balance and reconcile your checking records. Give information about your checks, deposits and service charges and your running balance is automatically computed for you.

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DKS QQM-501

E HANGMAN



HANGMAN

Educational Series. For big fun and bigger vocabularies! Lets you make your own word tapes so children will learn the words you select.

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DKS QQE-203

VOLLEYBALL INTERACT VOLLEYBALL

ACTION SERIES: Volleyball action fills your screen as you serve, volley and spike the ball to beat your opponent. You set the skill level of this exciting action game!

VOLLEYBALL Program Guide

(For One or Two Players) volley and spike the ball to beat your opponent! You set the skill level of this exciting action game.

LOADING THE PROGRAM: Insert the VOLLEYBALL cassette into the tape deck. Press the RESET button, then the "L" key. Press the REWIND cassette button to rewind the tape if necessary. Press the READ cassette button to load the program.

SELECTING GAME OPTIONS: First you are asked, "1 or 2 PLAYERS?" Press "1" to play the computer, "2" to play another person. Next, you are asked for one player name (if you're playing the computer) or two players names (if you're playing another person). Type in the names, using the backspace key as necessary to erase errors. Press the "CR" key after typing each name. Names must be 10 characters or less in length. Next you are asked, "THREE HIT LIMIT?" Press "Y" or the hit button on either joystick to limit each player to 3 hits or less in which to return the ball over the net. Press "N" for unlimited hits. You are then asked, "BALL SPEED?" Press a 1, 2 or 3 to select slow, medium or fast. Finally, you are asked, "BIG PADDLES?" Press "Y" for big paddles, "N" for small paddles.

HOW YOU PLAY: You serve the ball by pressing your joystick hit button. Use your joystick knob to move your paddle left or right. During play, you may press your hit button to raise your paddle so you can spike the ball. The paddle remains at spiking height until you release the button. The left player always serves first.

SCORING: You score points only when you have served and your opponent fails to return the ball over the net. The serve passes to the other team when the player who served fails to return the ball. A ball bounced off the top or side of the screen remains in play, and the bounce does not count as a hit. The game ends when a player scores 21 points. The name of the winner is then displayed on the screen.

STARTING A NEW GAME: At the end of your game, press the hit button on either joystick after the winner is announced. The computer then asks you "SAME GAME?" Type a "Y" or press the left joystick hit button to start another game with the same options. Press "N" and the computer reviews the options, allowing you to make new choices for your next game.

Backgammon Program Guide (For one player)

Introduction. Interact™ Backgammon is a complete play-against-the-computer backgammon game. With it, you'll never lack a challenging opponent - your Interact™ computer is ready to play when you are.

Loading the Program. Insert the BACKGAMMON cassette into the tape deck. Press the RESET button and press the "L" key. Press the REWIND cassette button to rewind the tape, then press the READ cassette button to load the program into the computer.

Beginning the Game. The computer always plays black, you always play white. The computer sets up the board display on the screen, then displays the opening roll of one black and one white die. The highest number determines who goes first. The first move is made using the numbers displayed for the opening throw.

How the Computer Moves. A flashing dot appears over the point from which the computer has chosen to move a piece. A piece disappears from the chosen point and reappears on its new point. The computer moves its second piece the same way, then displays a random roll of the white dice. A flashing dot appears in the lower right corner of the board on your one point, indicating that it is your turn.

How You Move. Use the left joystick to move the flashing dot left or right across the board until it is flashing on the point from

which you want to move a piece. Pick up a piece by pushing the joystick away from you. Your chosen piece then disappears. Now move the flashing dot over the point on which you want to deposit the piece. Push the joystick lever toward you and the piece appears on the chosen point if the move is legal. If the move is illegal nothing happens, indicating that you must make a different move. You may pick up more than one piece before depositing any pieces. Register the move by pressing the hit button.

Changing Your Mind. At any time before you press the hit button you may start the move over by pressing the space bar on the keyboard. The game board display is restored to the arrangement at the beginning of your turn.

How To Bear Off. Pick up the piece to be borne off but do not put it down. Complete your move, then press the hit button.

Rolling Your Own Dice. The computer normally displays random dice rolls on the screen. However, you may roll dice of your own if you wish and enter the results using the keyboard. To use your own dice, press the "?" key once after the computer displays a random roll of the black dice. After the computer finishes its move one black die disappears. Press the number key (1 through 6) corresponding to the number on one of your dice. The computer displays one white die of that number. Register the second of your dice in the same way. After you complete your move using the numbers you entered, one white die disappears. Throw your dice again and enter the results as described to supply a throw for the computer. To return to computerized

rolls, press the "?" key once again after you enter a roll for the black dice. After the computer moves using the numbers you entered, all further rolls for both you and the computer are displayed automatically.

New Game. When all of one player's pieces have been borne off, the screen is cleared and a message is displayed indicating who won. After a brief pause, a new board is set up and displayed on the screen so you can begin a new game if you wish.

Strategy. Many books and articles have been written on this ancient yet popular game of strategy. Consult your local library or bookstore.

Displaying Ending Balances. To see computed ending checkbook and bank statement balances, select S for STOP after you have recorded as cleared all transactions shown on your statement. The program displays the balances then asks, "OK?" Press "Y" to proceed to preparing budget and checkbook data tapes. Press "N" to go back and step through each entry again as described above.

Preparing Budget Data. After you have okayed your balances, you may select entries to be saved on tape for input to the Expense Analyzer program in the Household Budgeting Library. The Analyzer helps you maintain and analyze records of your expenses. If you want to prepare a budget tape press "Y" when asked, "BUDGET TAPE?" If you choose not to make this tape, skip to "SAVING CHECKING ENTRIES" below.

Choosing Budget Entries. If you request a budget tape, CHECKBOOK BALANCER begins display of each transaction you typed in from the keyboard during your balancing session. For each item you are asked, "BUDGET ITEM?" Press "Y" to include the entry on the budget tape.

Specifying Expense Codes. The expense codes allowed in the Household Budgeting Library programs are listed in the Household Budgeting Program Guide. Use only codes for detail items—summary items are calculated automatically by Expense Analyzer. When asked, "EXPENSE CODE?", type in the code which properly classifies the current entry, followed by a "CR".

Specifying Budget Months. The Household Budgeting Library organizes your expenses by month number—that is, 1 for January, 2 for February and so on. When asked, "BUDGET MONTH (1-12)?", type in the number which identifies the month in which to record the current entry. Follow the month number with a "CR".

Saving Budget Data. After all entries have been reviewed for inclusion on your budget tape, the program displays a message that it is ready to make the tape. Insert a Data Tape into the tape deck and follow the instructions displayed after the message.

Saving Checking Entries. After preparing or by-passing the budget tape, CHECKBOOK BALANCER displays a message that it is ready to make the tape of uncleared entries for your next balancing run. The program also saves any cleared entries required next time to maintain a record of your running checkbook balance. Insert a Data Tape into the tape deck and follow the instructions displayed after the message.

M CHECKBOOK BALANCER

 INTERACT™

M

CHECKBOOK BALANCER

Management Series. Now it's easy to balance and reconcile your checking records. Give information about your checks, deposits and service charges and your running balance is automatically computed for you.

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Made and Printed in U.S.A.

DKS

EQM-501

ledges a perfect 150 "all bricks knocked out" score by flashing "A WINNER" on screen.) In a "2 PLAYER GAME", the computer will announce the winning player's name, e.g. "BILL BEAT LOU".

Ball Movement. Each time the ball bounces, its speed increases. Also, balls will take unpredictable bounces, so quick player reaction is crucial for high-scoring games.

New Game. At the end of a game, the computer will ask "SAME GAME?" Push your hit button or type "Y" for another game with the same options. Type "N" for a new set of options.

A BREAKTHROUGH

 INTERACT™

A

BREAKTHROUGH

Action Series. It's designed to drive you through the wall. One of the fastest-moving, most popular arcade games ever. For one or two players.

Copyright 1979, Interact Electronics Inc.

Scientific Notation. The numbers you enter in ordinary decimal notation must have an absolute value in the range .000000001 to 9,999,999,999. To enter numbers outside this range, you use scientific notation. CALCULATOR also uses this notation to display very large or very small results. Several examples of scientific notation are given below. A number in this notation has the form "±n E ±x" where:

The first + or - gives the sign of the number. The sign is assumed to be positive unless you press an "S" prior to entering the exponent.

n is the number to multiply by the power of 10 you specify in the exponent. The number may be up to 10 digits long counting the decimal point.

E is typed to indicate the start of the exponent. An "E" is displayed on the screen to the right of the number to separate it from the exponent.

The second + or - gives the sign of the exponent. If the exponent is positive your number is multiplied by 10^x. If it is negative, your number is divided by 10^x. The sign of the exponent is assumed to be positive unless you press the "S" key after typing the "E" which indicates the start of the exponent.

x is the exponent. It must be less than or equal to 37 in absolute value.

Examples of Scientific Notation:

a) 1.5684 E + 06 = (1.5684) × (10⁶) = 1,568,400. To enter, Type "1.5684", then "E", then "6".

b) -1.5684 E + 06 = (-1.5684) × (10⁶) = -1,568,400. To enter, Type "S", then "1.5684", then "E", then "6".

c) 1.5684 E - 03 = (1.5684) × (10⁻³) = 0.0015684. To enter, Type "1.5684", then "E", then "S", then "3".

d) -1.5684 E - 03 = (-1.5684) × (10⁻³) = -0.0015684. To enter, Type "S", then "1.5684", then "E", then "S", then "3".

M CALCULATOR

 INTERACT™

M

CALCULATOR

Management Series. At last—no starting over when you discover a mistake. This four-function calculator remembers over 150 entries and totals. Back up and change an entry, then all affected totals are automatically recalculated for you!

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CHECKBOOK BALANCER Program Guide

(For The 16K Model One Only)

Introduction. Now it's easy to balance and reconcile your checking account. You simply type in information about your checks, deposits, transfers and service charges. CHECKBOOK BALANCER gives you your running balance, and your ending checkbook and bank statement balances. Then the program helps you prepare a data tape of uncleared entries for input next time you need to balance. You may also prepare a tape for input to the EXPENSE ANALYZER program in the Household Budgeting Library.

Loading The Program. Insert the CHECKBOOK BALANCER tape into the cassette deck. Press the RESET button, then an "L". Push the REWIND cassette button to rewind the tape. Push the READ cassette button to load the program.

Starting Up a New Account. To use CHECKBOOK BALANCER with a newly-opened account, simply enter zero when asked for the previous statement balance. Then enter the transactions you have written since you opened your account, following the instructions below. You may enter up to 200 transactions in one run.

Starting Up An Established Account. To begin using CHECKBOOK BALANCER with an account you've had for awhile, enter the beginning balance as shown on the statement you want to reconcile when asked for the previous statement balance. Ignore the displayed previous checkbook balance. Then locate the earliest uncleared entry in your checking records. Following the instructions below for entering transactions, enter as a deposit your balance immediately prior the earliest uncleared entry. If you were overdrawn at that point, enter the amount overdrawn as a negative deposit amount. Then enter all following transactions—whether cleared or not—beginning with the uncleared entry and continuing through a maximum of 200 transactions, or through the last entry in your records.

Loading Data From Tape. If you have used CHECKBOOK BALANCER in previous months, you have a data tape of uncleared transactions. Load that tape according to the instructions given by the program. Then type in

the beginning balance as shown on your earliest unreconciled bank statement when asked for the previous statement balance. The program computes and displays your checkbook balance as of the earliest uncleared entry. You then type in new transactions you have made since you last ran the program, following the instructions below. You may work with a maximum of 200 entries, including the entries from tape. The program tells you when you reach this limit.

Entering Transactions. Complete instructions for entering transactions are provided by the program. Press "Y" when asked, "TRANSACTIONS INSTRUCTIONS?" The program describes formats for entering deposits, checks and service charges. Use the format for deposits to enter a transfer into your account from another account. Use the format for service charges to enter an automatic teller withdrawal or other transfer out of your account made without writing a check.

Clearing And Correcting Transactions. After you have entered all your new transactions CHECKBOOK BALANCER displays each one, beginning with the first entry from tape and proceeding one-by-one in the order in which they were entered. Cleared transactions are marked with an asterisk (*) after the transaction type code C, D or S. The checkbook balance after each entry is also shown. Positive balances are displayed in yellow, negative balances are in red. After each entry is displayed you may choose from the following actions.

S for STOP. Stop showing individual entries and display ending checkbook and bank statement balances.

N for NEXT. Display the next entry.

P for PRIOR. Display the previous entry.

F for FIX. Allows you to re-enter information for the current entry.

C for CLEAR. Records the current entry as cleared. An asterisk (*) is printed after the transaction type code. The entry remains on the screen.

D for DELETE. Deletes the current entry.

I for INSERT. Allows you to insert a new transaction before the current entry.

Press the code for the desired action.

ADD 'EM UP Program Guide (For one or two players)

Loading Program. Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks.

Game Options. When the program is ready, the computer will ask "1 OR 2 PLAYERS? 1=ONE 2=TWO." To play against the computer, type "1" and use left joystick. If you type "1", the computer will display "EASY GAME? Y=YES N=NO." This determines how well the computer will play.

Game Play And Scoring. After the options are chosen, the computer will display a 7-by-7 grid of squares on the screen. Each screen contains a number (1-9) in random assortment. Several squares contain stars which after they are chosen and added to on-screen totals. The flashing index light is controlled by joystick movement. Left Player (who begins play) moves side to side only. Right Player moves up and down only. Numbers are chosen by moving the index light over a square and depressing the hit button. The number Left Player chooses determines the column Right Player can play in and vice versa. Once a number is picked, it is taken out of play.

Each number picked is added to each player's score by the computer. The object of the game is to add up the highest possible number total. This means you must choose the highest value numbers while you avoid getting trapped on a row where all the numbers have been used up or are of low value. As soon as a player is trapped on a row with no numbers, the computer ends the game, calculates the score and declares the winner.

New Game. For a new game, either player may depress a joystick hit button.

Breakthrough Program Guide

Loading Program. Insert the program cassette into the tape deck, depress the RESET button, depress the "L" key, rewind the tape and depress the READ button to load the program into the computer. Plug in joysticks (use left joystick for one player).

Game Options. When the program is ready, the computer will ask "1 OR 2 PLAYERS? 1=ONE 2=TWO." If you choose "2", the computer will ask you to enter "LEFT PLAYER NAME". Type in the name (up to eight characters long) and depress the "CR" key when finished. The computer will then ask for "RIGHT PLAYER NAME". Enter this name the same way.

After player options are decided, the computer will ask "EXPERT GAME? Y= YES N= NO". If you choose "Y", you play the game with only five balls. If you choose "N", you play with six balls. Next the computer will ask "FAST GAME? Y= YES N= NO". Choose "Y" for a fast game or "N" for a slower paced game. The final option is "BIG PADDLE? Y= YES N= NO". Choose "Y" for a paddle about twice the size of the paddle you get if you choose "N".

Game Play. After all options are selected, the game scene is displayed on the TV screen. On the left is a bar-shaped white paddle, which deflects game balls and is moved up or down by the joystick turning knob. In the middle of the screen is the scoreboard which tallies the score and tells you how many balls you have left to play (including the ball in play). To the right are five vertical rows of red and blue "bricks" in a five-layer-thick wall. The object of the game is to knock out as many bricks as possible with the game balls and accumulate the highest possible point total. (See Game Scoring.) Balls are put into play by depressing the joystick hit button. The balls bounce off the top and bottom white boundary lines, as well as the wall. In a "2 PLAYER" game, the Left starts and plays an entire game. The Right Player plays next.

Game Scoring. The deeper the ball goes into the wall, the more points each brick is worth. Each first row brick (reading left to right) is worth one point, second row, two points, third row, three points, fourth row, four points and fifth row, five points. If your paddle misses the ball, the ball goes off-screen and out of play—a new ball is served up when the hit button is depressed. In a "2 PLAYER" game, the Left Player's score is kept at the top of the screen in red numbers. The Right Player's score is kept at the bottom of the screen in blue numbers. Each game ends when all the balls are gone or all the bricks have been knocked out. (The computer acknow-

CALCULATOR Program Guide

(For The 16K Model One Only)

Introduction. At last—no starting over when you discover a mistake. Use your Interact computer as a four-function calculator with memory register—and a special extra. CALCULATOR remembers over 150 entries and totals. You can back up, change an entry and all affected totals are automatically recalculated for you.

Loading the Program. Insert the CALCULATOR tape into the cassette deck. Press the RESET button then type an "L". Press the REWIND cassette button to rewind the tape. Press the READ cassette button to load the program.

Making Entries. Use the 0-9 digit keys, period key, and +, -, *, / and = operator keys to make entries as you would on any calculator. The "M" operator key designates multiplication. You may type in values up to 10 digits in length. A decimal point counts as one digit. CALCULATOR rounds off results to a maximum of nine digits of accuracy including the decimal point. You may also enter values using the scientific notation described below. CALCULATOR can take as input or can calculate any number whose absolute value falls in the range $(1.1) \times (10^{-37})$ through $(8.506) \times (10^{37})$.

The Current Entry. The bottom line on your screen is used to show the current entry. As you make new entries your old entries are scrolled up and off the screen. CALCULATOR remembers over 150 entries and totals, although up to 11 only are shown on the screen. You may use the backspace key as described below to scroll a prior entry down to the current entry line so you can change it. You may then use the CR key to go forward again and automatically recompute new totals based on the new value(s) of the changed entry or entries.

Special Keys.

clears the current entry by replacing it with zeros on the screen. You may then enter a new number, operator and

CONTROL/C

clears all entries except the contents of the memory register. Hold down the CONTROL key and type a "C" at the same time.

M

puts the value displayed on the current entry line into the memory register.

R

displays the contents of the memory register. To use the register value in your calculations, type the desired operator then "R".

S

changes the sign of the current entry or its exponent. Exponents are described below under "Scientific Notation".

Backspace

scrolls the entry list down one—that is, backs up one entry. Totals are skipped automatically since you may not edit them. You may back up a maximum of more than 150 entries counting totals. When you get to the last entry CALCULATOR remembers, a backspace has no effect. When a prior entry reaches the current entry line you may change it by typing a new number or a new operator and number.

CR

scrolls forward one entry. Any totals which appear as you scroll forward have been automatically recalculated to reflect any changes made to prior entries. If you are on the last entry, CR has no effect. Please note that the memory register contents are NOT changed, even if the register contains a total affected by changes to entries.

Introduction

Interact's "Star Track" space war game program is based upon the popular "star trek" computer game—a game widely played and enjoyed by computer professionals and hobbyists all over the world. Your mission: take command of the Enterprise starship, find units of the Klingon invasion force and destroy all alien battle elements before your allotted star days run out or the Klingons destroy you.

The Enterprise begins the game with a set amount of energy units and a given amount of star days to complete the mission. Each Klingon attack drains off energy. Energy levels are also depleted and precious time is used up every time you scan, move, fire phasers or refer to the computer for mission or damage status. In order to win Star Track, you must waste as little time as possible and maintain sufficient energy levels to search out and destroy Klingons.

To sustain the Enterprise's capacity for battle, you must periodically find Federation star bases to refuel, repair damages and reload torpedoes. Star base docking must be done precisely or the Enterprise can wipe out a base and possibly run out of energy.

Other deep space dangers are solar flares and super novae. These random phenomena can severely damage one or more of the Enterprise's systems.

To become familiar with all the aspects of this game, review the following glossary of game terms, refer to the Command Controls explanations and see the game examples at the end of this guide.

Starting the Game

After the program cassette is loaded, the computer will ask you "TYPE YOUR NAME". Type in your name (up to eight letters) and depress the "CR" key when finished. Erase any entry errors with the BACKSPACE key.

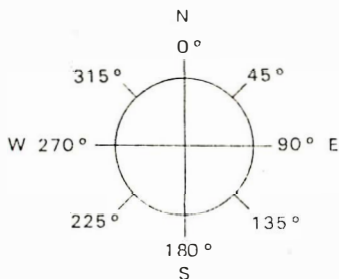
Next, the computer will request "ENTER YOUR ABILITY LEVEL (1-9)". The higher the number, the more Klingons you must destroy. Higher level games also give you fewer starbases and less time to complete your mission. After your name and ability level are entered, the computer will tell you how many Klingons you face, your orders and how many stardays you have to complete your mission.

From this point, you can start the game or refer to the Command List. Type the "?" key and see this: "COMMAND LIST: W=WARP ENGINES, S=SHORT SCAN, L=LONG SCAN, P=FIRE PHASERS, T=FIRE TORPEDOES, D=DAMAGE REPORT, I=IMPULSE ENGINE. Here are explanations of these commands:

Warp Engines

To remove the Enterprise, type the "W" key. The computer will respond with "SET COURSE". This means you must type the compass heading of the direction you want to go, e.g. if you want to go to the quadrant northeast of your present quadrant, type "45" and depress the "CR" key. Next, the computer will ask you to set warp power from zero to 99. Each warp unit moves the Enterprise one sector, e.g. if you type "7", the Enterprise will move seven sectors in the direction your course specified.

The Enterprise will stop short of its destination sector if it collides with any Klingon, star or starbase along the way. Also, warp engines can be damaged if they are used too much.



Impulse engines

In case the warp engines become damaged, you can use the impulse system while the warp drive is in repair. You move the Enterprise with the impulse engines in the same way you use the warp drive. The only difference is that impulse power is

specified from zero to 15 units. Impulse engines can be damaged much more easily than warp engines, so use impulse sparingly.

Short range scan

After you type the "S" key, a map of your quadrant will appear on the TV screen. This short range scan shows the Enterprise's exact sector position within its quadrant. Short range scan also reveals Klingons, star bases and stars, if any.

Long range scan

After you type the "L" key, the TV screen will show the Enterprise's quadrant in relation to neighboring quadrants. Quadrants are represented by three numbers which indicate the contents of each quadrant. The left number is Klingons, the center number is star bases and the right number stands for stars.

Fire phasers

After you type the "P" key, the computer will respond "PHASERS LOCKED ON TARGET" and tell you how much energy is available for your phaser banks. Type in the energy units you want to expend on phasers and depress the "CR" key. You'll hear the phasers fire, the computer will tell you how many units hit target and if you're successful, the computer will tell you if you destroyed the Klingon ship.

Fire torpedoes

To fire photon torpedoes, depress the "T" key. The computer will ask you to set course. Refer to the short range scan and figure out the compass heading of your target in relation to the Enterprise. Type in the course numbers and then type the "CR" key. You'll hear the torpedo fire and see the trajectory read out. The computer will tell you if you hit or missed your target.

Damage Status

After you type the "D" key, the computer will tell you the percentage of damage sustained by warp engines, long scan, short scan, phasers, photon tubes, damage control, impulse beam and record control. All systems return to 00% damage after the Enterprise docks at a star base. Also, each system gradually repairs itself as star days elapse.

Mission Status

If you depress the "M" key, the computer will give you your location (quadrant and sector), current energy supplies, how many Klingons are left, the current star date, your torpedo inventory and how many star days you have left to complete your mission. At the end of the Mission Status update, the computer will request your next command.

Example Star Track Exercise

Long range scan

The computer tells you that the Enterprise is located in quadrant 4-6. You depress the "L" key for a long range scan. Here is what you see on the TV screen:

Long Range Scan for Quadrant 4-6		
012	000	004
100	116	000
001	201	011

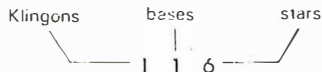
Visualize this

(The Galaxy)

	1	2	3	4	5	6	7	8
1								
2								
3								
4								
5				012	000	004		
6				100	116	000		
7				001	201	011		
8								

The "116" tells you what is in your quadrant - quadrant 4-6. (Four rows across, six rows down.)

How to read the numbers:



Reading from left to right, the "1" tells you that one Klingon is in quadrant 4-6. The middle "1" tells you one star base is in the quadrant. The "6" on the right means six stars are in quadrant 4-6.

The "100" number directly to the left of "116" tells you that in quadrant 3-6 you'll find one Klingon, but no star bases or stars. The "201" number below "116" tells you that in quadrant 4-7 you'll find two Klingons, no bases and only one star.

Short range scan

To get a close-up, detailed look inside of quadrant 4-6, depress the "S" key. You'll see how the "116" number is actually deployed. For example, the short range scan (right)

shows the Enterprise (E) at sector 4-3, three rows down and four rows across. One Klingon battle cruiser is stationed at sector 2-5. There is a base at sector 8-5. And stars are at sector 2-1, 4-1, 7-2, 3-7, 5-7 and 6-8.

Short range scan for quadrant 4-6.

S	S							
							S	
		E						
								B
	K							
		S		S				
						S		

Note: On screen appears as white letters and dots against dark blue background.

How to fire phasers

Activate phasers by depressing the "P" key. The computer will confirm "PHASERS LOCKED ON TARGET" and tell you how much energy is available for phaser use. When you refer to the short range scan example for quadrant 4-6, you see the Klingon target is quite close. This means you will not need large amounts of phaser energy to destroy the Klingon. To be sure of a "kill", type in 40 units, depress the "CR" key, hear the phasers fire and then watch the TV screen as the computer tells you the outcome of your attack.

(Note: Phasers will lock onto more than one target if several Klingon ships lie within your quadrant. The energy amount you specify will first go to the nearest Klingon. Any energy remaining after the first Klingon is destroyed goes toward the next Klingon. If you specify a large enough phaser energy amount, you can destroy two or more Klingons with one powerful attack.)

Firing Photon torpedoes

Type the "T" key to activate the photon torpedo system. Refer to the short range scan example for quadrant 4-6 to see the position of the Klingon target in relation to the Enterprise. When the computer asks for you to set course, type in the compass degree heading that the torpedo will follow to the target. In quadrant 4-6, the Klingon lies about 225 degrees to the southwest of the Enterprise. Type in "225", depress the "CR" key, hear the torpedo fire and watch the sector coordinate trajectory readout as the computer tells you whether you hit or missed the target.

Glossary of Star Track Game Terms

Enterprise

Your starship, seen as "E" on the short range scan.

Klingon

Enemy battle cruisers, seen as "K" on the short range scan.

Star

Random solar obstacles located throughout the galaxy. Stars appear as "S" on the short range scan.

Star base

Re-supply bases where the Enterprise takes on energy and supplies. Bases appear as "B" on the short range scan.

Galaxy

The total area of space where the game is played. The galaxy is laid out checkerboard-style and is made up of 64 quadrants, eight rows down and eight rows across.

Quadrant

1/64th area of the galaxy. Like the galaxy, each quadrant is sub-divided into 64 areas in an eight-column-by-eight-row checkerboard.

Sector

1/64th area of a quadrant--the smallest area of space.

Set Course

Telling the computer which compass heading (from zero to 359 degrees) to aim the Enterprise or torpedoes, e.g. 0 degrees = north, 90 degrees = east, 180 degrees = south and 270 degrees = west.

Phasers

One of the Enterprise's offensive weapons which is dependent upon the Enterprise's energy supplies. Phasers can destroy Klingons only within the same quadrant the Enterprise shoots from. Phaser strength decreases as the Enterprise-Klingon distance increases.

Photon torpedoes

The Enterprise's other weapon system. Torpedoes must be given precise course headings (+ or - 5 degrees) to targets and can destroy stars as well as Klingons. Torpedoes are effective only within the quadrant they are fired from. The Enterprise may carry a maximum of ten torpedoes at one time.

Supernovas and solar flares

Destructive space phenomena which can severely damage the Enterprise.

The Earth

One of the stars in the galaxy is our Sun - the Earth revolves around it. If the Enterprise destroys the Sun (and the Earth), you will be declared a renegade against the Federation and no star base will service your starship for the rest of the game.

Space warp

If you set a course and move to a point which lies outside of the galaxy, the Enterprise will encounter space warp. This causes the Enterprise to assume a new, random position somewhere else in the galaxy.

Short range scan

Function which lets you see the quadrant the Enterprise is in. This scan reveals the exact sector location of your starship, star bases, Klingons and stars.

Long range scan

Function which lets you see the contents of quadrants next to your quadrant. Each quadrant is represented by a three-digit number: The first number on the left indicates how many Klingons, the middle number stands for the number of star bases and the last number shows how many stars lie within the quadrant.

Warp engines

The Enterprise's primary propulsion system. Before warp drive can be engaged, a course must be given. Warp drive is specified in units from one to 99. One warp unit moves the Enterprise one sector.

Impulse engines

The Enterprise's alternate propulsion system, for use when the warp system is damaged. Impulse drive is specified in units from one to 15--one unit moves the Enterprise one sector. The impulse system is prone to more breakdowns than the warp drive--use it sparingly.

How to dock the Enterprise at a star base

Refer to the short range scan example for quadrant 4-6 to find the base (B) at sector 8-5.

The object of docking is to maneuver the Enterprise (E) to the sector occupied by a star base. Count how many sectors lie between the Enterprise and the base and assign one warp unit for each sector. If you specify too many units, the Enterprise will "crash" into the base and destroy it.

Here is one way to dock the Enterprise (sector 4-3) with the star base (sector 8-5). First, depress the "W" key to activate the warp engines. (Impulse engines can also be used.) Set a course 90 degrees due east to put the Enterprise directly north of the base. Type a warp unit of "4" to move east four sectors to sector 8-3. Re-activate the warp engines, set a course for 180 degrees due south and type a warp unit of "2" to arrive at the star base sector 8-5 and dock. The computer will tell you when you have docked.

Reading Tape. This loads your written video on back into the computer. Follow these steps: 1) Insert the Data Tape while the program is running in the computer. 2) Hear the data load into the computer and watch it appear on TV. The tape deck will shut off when finished. Depress the STOP button to turn the reading sequence off.

E COMPUTE-A-COLOR 

 INTERACT 

COMPUTE-A-COLOR 

Educational Series. Create original, colorful video art on your home color TV. Teaches color recognition and design skills. Save computer art on tape to enjoy later. (With keyboard overlay.)

further permits these special moves, but does not check their legality before you make it.
 setting. Move your king two squares to the opposite side. The
 computer will move your rook for you.
 computer will show you your own capturing the computer's pawn.
 Promotion. If you move your pawn to the eighth rank, the
 computer will automatically promote it to the most valuable piece that has
 previously captured by the computer.
 Rules And Strategy. There are many comprehensive books
 on chess of your local library; refer to these for further understanding
 Rules and Strategy.

COMPUTE-A-COLOR Program Guide

(Uses keyboard overlay)

Loading Program. First, put the keyboard overlay on the keyboard. Insert the program tape into the tape deck, depress the RESET button, depress the "L" key, depress the REWIND button on the tape deck, and depress the READ button to load the program into the computer. Plug in left joystick.

Painting Options. The program begins when a flashing index light and four color paintboxes appear on screen. The joystick moves the index light, or "paintbrush", up, down, left, right or diagonally. To move the brush without leaving a trail, hold down the hit button. Change the size of the brush tip by turning the control knob counter-clockwise for the smallest stroke and clockwise for the largest. For one-step-at-a-time printing, utilize the BRUSH DIRECTION keys indicated by the arrows on the keyboard overlay.

Color Options. Choose colors from the paintboxes by depressing the desired key (Box 1-4) in the PAINTBOX COLORS key group. Depress the BRUSH COLOR key to change the brush color (this color appears as a narrow band over the paintboxes).

Moving Index Light (paintbrush) To Another Starting Position. If you don't want to start your picture from the center of the screen, move the index light to your desired starting position and follow the directions for ERASE SCREEN.

Full Screen Option. To remove the paintboxes from the lower portion of the screen and use the entire screen area to paint, hold down the CONTROL key and depress the FULL SCREEN key. (In this mode, the joystick hit button must be held down to paint, the opposite of its normal operation.) Hold down the CONTROL key and depress the FULL SCREEN key to return to normal operation.

Erase Screen. Hold down the CONTROL key and depress the ERASE SCREEN key to blank out a picture. This function still retains the previous paintbox colors.

Writing Tape. The write function saves video art on tape. Follow these steps: 1) remove the program tape and insert a blank Data Tape. 2) if necessary, rewind the tape by depressing the REWIND button, holding down the CONTROL key and depressing the REW. ON key. When tape is rewound, hold down the CONTROL key and depress the REW. OFF key. 3) depress the READ and WRITE tape deck buttons at the same time. Hold down the CONTROL key and depress the WRITE key. The tape deck will shut off when finished. The flashing index light will reappear. Depress the STOP button to turn the writing sequence off.

(Continued on other side)

S VIDEO CHESS I

INTERACT™

VIDEO CHESS ♟

Strategy Series. Play chess against an opponent, using your TV screen as the board and the computer as a referee. Save the game record on tape for replay and analysis.

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DKS

00S-105

Legality Checks and Special Moves. The computer makes sure all moves are legal and it will not let you move your king into check. If you are in check a buzzer will warn you. A bell sounds ten times when checkmate occurs. To end a checkmate, hold down the CONTROL key and type the "S" key or depress either joystick hit button to restart the game.

You may also make these special moves: castling and en passant to either side and pawn promotion - a pawn reaching the 8th rank will be promoted to that side's highest ranking previously captured piece.

To castle, move your king two squares to the appropriate side. The computer will move your rook for you.

Chess Rules and Strategy. There are many comprehensive books about chess at your local library. Refer to these for further understanding of chess rules and strategy.

* CLEAR: Clear the screen.
* FLASH: Flashes the screen.
* BUZZ: Makes a buzzing noise.
* BEEP: Makes a beeping noise.
* ALARM: Makes an alarming noise.
* A single asterisk (*), followed immediately by depressing the "CR" key puts a blank line on the screen.
* SOUND(M.S): allows you to create custom sound effects. The "M" number can only be from one to seven. The "S" number can be from zero to 32767. Experiment for different results.
* COLOR(A, B): Selects two colors for message display enhancement. Number "A" is the background color, number "B" is the text color. Zero = black, 1 = red, 2 = green, 3 = yellow-orange, 4 = blue, 5 = violet, 6 = turquoise and 7 = white. Experiment with different color values to achieve desired effects.
* Writing Tape to Save Messages for Replay: You may save line numbered messages on tape for future reference and display. Follow these steps: 1) Remove the program tape and insert a blank Interact Data Tape. 2) Type the REW command and rewind the tape if you want to start from the beginning. Press any key to tell the computer when the tape is rewound. 3) Depress the READ and WRITE buttons on the tape deck. 4) Type the SAVE command (and optional name if desired) and the "CR" key to write, or record the message on tape. When the tape deck shuts off, depress the STOP button to disengage the READ and WRITE buttons.
* Reading Tape to Retrieve Messages: Follow these steps to read or playback messages from a Data Tape. 1) Insert the Data Tape. 2) Type the REW command and rewind the tape if you want to start from the beginning. 3) Depress the READ button on the tape deck. 4) Type the LOAD command (and optional name if applicable) and depress the "CR" key.

INTERACT

EDU-BASIC

PROGRAMS

QGE-207

INTERACT

INTERACT ELECTRONICS, INC.

P.O. Box 8140, Ann Arbor, MI 48107

Introduction

BASIC for the Interact Model One Home Computer is a convenient, easy to use version of the BASIC programming language.

This booklet summarizes the statements and commands of Interact BASIC for users who have some knowledge of BASIC programming. If you would like more information on how to program in BASIC, refer to one of the many books on BASIC programming, such as:

John G. Kemeny and Thomas Kurtz, *BASIC Programming*, 2nd Edition, John Wiley and Sons, New York.

Interact BASIC is an integer BASIC. All numbers are integers and must be between -32767 and 32767. There are 26 variables, represented by the letters A through Z. There is also an array or vector capability, represented by an exclamation point followed by an index in parentheses, (Iexp).

The arithmetic and comparison operators in Interact BASIC are:

	/	divide
	*	multiply
	-	subtract
	+	add
	>	greater than
	<	less than
	=	equal to
	<= or >=	not equal to
	>=	greater than or equal to
	<=	less than or equal to
	MOD	modulo (the remainder after division)

Arithmetic operators produce integer values as described above. Comparison operators produce a 1 if the result of the comparison is true and a 0 if the result is false.

Interact BASIC enables the user to combine numbers, variables, functions, and operators (grouped by parentheses as needed) to form expressions. Most Interact BASIC statements act on expressions.

Using Interact BASIC

Most of the Interact BASIC statements can be used in two ways - in the classic BASIC usage as line numbered program statements or as direct commands to the Interact computer. Used without line numbers, each command is carried out immediately, as soon as you type a carriage return. For example:

```
GOTO 20
```

begins execution of the current BASIC program at line 20

Note that LIST, LOAD, NEW, RUN, and SAVE can only be used as direct commands to the Interact computer, *not* as program statements. To enter BASIC commands, type the command after the computer's prompt symbol >.

To enter Interact BASIC statements, type a statement number followed by one or more Interact BASIC commands, up to a maximum of 32 characters on a line. You can enter more than one command on a line if you separate the commands with semicolons. For example:

```
10 LET A = A/2; PRINT A
```

To change any statement in an Interact BASIC program, simply retype the line number, followed by the new contents of the line. To delete a statement, type its line number followed by a carriage return.

To list the current program, type LIST. This directs the system to print all the statements in order by line number. To list the current program beginning at a particular line number, type LIST followed by the desired line number.

For convenient entry and editing of programs, assign statement numbers with space to insert new lines. For example, enter statements numbered 10, 20, 30, 40, 50, *not* 10, 11, 12, 13, 14. This way, you can conveniently insert new statements without retyping lines you wish to keep.

All Interact BASIC statements and commands can be abbreviated to three or fewer letters, followed by a period. A three letter plus period abbreviation is always valid. Some statements can have shorter abbreviations; the shortest abbreviation that uniquely represents the statement is valid. For example

```
CL. CLEAR  
R. RUN  
N. NEW
```

Error Messages

Interact BASIC has three error messages: WHAT?, HOW?, and SORRY.

WHAT? means that the system does not understand a statement. The statement is printed with a question mark inserted at the point where the system detected the error. For example,

```
WHAT?  
30 GOTO 73
```

indicates that you mistyped GOTO.

HOW? means that the system understands the statement but can not carry it out. The statement is printed with a question mark at the point where the system stopped. For example,

```
HOW?  
30 GOTO 73?
```

indicates that there is no line 73

The HOW? error message also appears when BASIC encounters numbers whose absolute values are greater than 32767. For example,

```
10 65000  
HOW?
```

SORRY means that the system has encountered a valid statement, but there is not enough memory to carry it out.

Storing Interact BASIC Programs

To store the current BASIC program, you may first use the REW command to rewind the tape. Type REW, then push the REWIND button on the tape drive. Type any character on the keyboard to stop rewinding.

Next, push the WRITE and READ buttons on the tape drive simultaneously to enable the system to record the program on the tape. Then enter the SAVE command, followed by the name (up to five characters long) you wish to assign to the program. If you type SAVE without a name, the program will be stored with no name. When the computer has stored the program on the tape, the screen displays the OK message.

When storing Interact BASIC programs, be careful not to write over other programs you may wish to save. Another useful practice is to assign separate data and program tapes for saving data and programs.

Summary of Interact BASIC Statements and Functions

The following pages summarize the Interact BASIC statements and functions. For each statement and function, the summary gives its general format, a brief explanation, and an example of its use.

In the summary below, the following syntax conventions apply to the documentation general formats:

- | | |
|-----------|---|
| UPPERCASE | Upper case type indicates a literal parameter; enter it exactly as shown. |
| lowercase | Lower case type indicates a variable parameter; enter a suitable substitute. For example, where a general format reads <i>exp</i> you can enter any expression. |
| [] | Parameters in brackets are optional; enter only when appropriate. |
| { } | Parameters in braces indicate a choice; enter one of the parameters listed within the braces. |

Here are the Interact BASIC statements and functions, in alphabetical order:

ABS [exp]

Function which returns the absolute value of *exp*.

Example: 10 I = 8
20 A = ABS (I) The value of A will be 8.

CLEAR

Blanks the TV screen, but does not delete the current program.

Example: OK
->CLEAR

COLOR [exp1, exp2, exp3, exp4]

This command selects four colors for the TV screen from the following available color values:

- 0 = Black
- 1 = Red
- 2 = Green
- 3 = Yellow
- 4 = Blue
- 5 = Magenta
- 6 = Cyan
- 7 = White

After selecting colors with the COLOR statement, refer to these colors (in other statements) by their corresponding *position numbers* 0, 1, 2, and 3. For example,

10 COLOR (1, 3, 5, 7)

After this assignment statement, color 0 refers to red (the color specified in position 0), color 1 refers to yellow (the color specified in position 1), and so forth. Thus,

20 PLOT (X, Y, 2)

says to plot the point (X, Y) with the color selected by position 2 of the previous COLOR statement, that is, color 5 (magenta).

CONTROL-C

Stops a running program or program listing and displays the OK message.

CONTROL-O

Stops displaying on the TV screen until you enter another control-O, but does *not* stop the program from running. No *output* appears on the screen until you type another control-O, not even the OK message.

Pressing the TAB key on the computer keyboard **stops** program execution and all output until you press the TAB key again. This capability is useful for reviewing long listings, because you can type LIST, then use the TAB key to stop the listing at any point while you decide whether you wish to make changes.

CONTROL-X

Deletes the line currently being typed (works like backspacing to the beginning of the line).

FIRE [exp]

Function which reads the button on the joystick, where *exp* must be 0 or 1. FIRE (0) reads the fire button on the left joystick; FIRE (1) reads the fire button on the right joystick. When the value of the function is 0, the button is pushed. When the value is 1, the button is not pushed.

Example: >A = FIRE (0)

If the value of A is 0, the left button is pushed. If the value of A is 1, the left button is not pushed.

FOR variable = exp1 TO exp2 [STEP exp3]

Begins FOR . . . NEXT loop. Initializes *variable* to the value of *exp1*, then increments it by *exp3* each time the corresponding NEXT statement is encountered, until the value of *exp2* is reached. If *STEP exp3* is omitted, a STEP of +1 is assumed. Negative numbers are allowed.

FOR . . . NEXT loops can be nested; that is, a loop can contain other loops. However, the ranges of the loops (the statements delimited by each pair of FOR and NEXT statements) cannot overlap.

Examples: 10 FOR J = 1 TO 5 Type RUN and this appears on screen.
15 PRINT J
20 NEXT J

Step of +1

- 1
- 2
- 3
- 4
- 5

or, using the STEP parameter:

10 FOR J = 0 TO 100 STEP 5
15 PRINT J
20 NEXT J

Type RUN and this appears on screen.

- 0
- 5
- 10
- 15
-
-
-
- 100

An example of correct nesting is:

```
10 FOR K = 1 TO 5
20   FOR J = 1 TO 5
30     PRINT K, J
40   NEXT J
50 NEXT K
```

GOSUB exp

Causes the program to transfer to the BASIC subroutine starting at the line number specified in *exp*. The last line of the subroutine must be a RETURN statement, which causes the program to transfer back to the line after the GOSUB statement.

Examples: 140 GOSUB 500
(program executes subroutine starting at line 500, then returns to line 150)
150 PRINT K

```
5 IF A = 5 GOSUB 50   DOES STATEMENT
10 IF A = 5 THEN 20   AT LINE 50
                       RETURNS TO 10
                       (FROM LINE 55)
```

```
40 60 TO 5
50 A = B/C - 12
55 RETURN
```

or:

```
10 K = 500
20 GOSUB K
```

GOTO exp

Causes an immediate jump to line number specified in *exp*.

Example: 160 GOTO 200

```
IF exp1 statement
IF exp1 THEN exp2
  GOTO
```

In the first form of IF, if *exp1* is true, the system executes *statement*.

If *exp1* is false, *statement* is not executed. In the second form of IF, if *exp1* is true, the program jumps to the line number specified by *exp2*. If *exp1* is false, the jump does not take place. Actually, the second IF form is simply a special case of the first, as *GOTO exp2* is a frequently used *statement*. That is, *statement* may be any valid BASIC statement, including a GOTO, GOSUB, or even RETURN.

Examples: 260 IF L>5 PRINT "ERROR"

```
10 IF X = 3 THEN 130
```

IS SAME AS:

```
10 IF X = 3 GOTO 130
```

INCHR

Waits for a key to be pressed on the keyboard, and returns the number which is its ASCII value.

Example: >A INCHR
Z
>PRINT A
90

INPUT [string] [variable]

Prints *string* on the screen (followed by a colon), then waits for the user to enter a value for *variable*. If "string" is omitted, the computer prompts with the variable name.

Example: >INPUT "HELLO" A

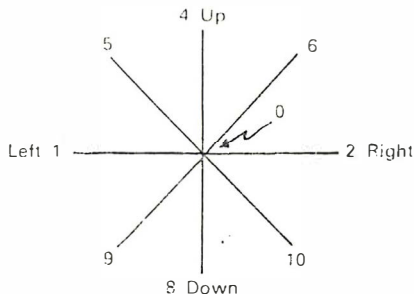
Prints HELLO on the screen, then waits for you to input value of expression A. If you omit *string*, the computer prompts with the name of variable A.

```
10 INPUT "HELLO" A
   ON SCREEN: HELLO:
   THE NUMBER THAT IS TYPED IN IS PUT
   INTO [SAVED IN] A
```

```
20 INPUT A, B
   ON SCREEN: A: WAITS FOR INPUT, THEN
   B: WAITS AGAIN
```

JOY [exp1]

Function which reads the position of the joystick, where *exp* must be 0 or 1. JOY (0) reads the left joystick; JOY (1) reads the right joystick. The position of the joystick returns a value for the function according to the following diagram:



Example: >A = JOY (0)

If the value of A is 0, then the left joystick is in the center.

{LET} variable = exp

The equivalence statement which assigns values to variables and commands the system to perform calculations. LET evaluates the expression on the right of the equal sign and assigns its value to the variable on the left of the equal sign. The keyword LET is optional for convenience.

Examples: 10 LET X = 5
20 LET F = G + (H/K - 17)
30 J = 8
> X = 5

LIST [n]

Used without parameters, causes the entire program to be displayed on the screen. Entering a period (.) produces the same effect as typing LIST. Used with a number, causes the program to be displayed starting with line number *n*.

Examples: >LIST 100 displays the program starting with line 100.

>LIST or L. (or just .) displays the entire program.

LOAD [name]

Reads (loads) the BASIC program called *name* from a cassette tape. If *name* is omitted, the next program on the tape is read. After the system reads the LOAD statement, push the READ button on the tape drive. Note that if you specify *name* and there is no program on the tape with that name, the computer will continue trying to read it until end of tape.

Example: >LOAD ABCD
(then push READ)

NEW

Clears (deletes) the current BASIC program and leaves the memory ready for a new program.

Example: OK
>NEW

NEXT variable

Ends a FOR . . . NEXT loop, where *variable* is the same variable used in the FOR statement that begins the loop. See also FOR.

Example: 10 FOR J = 1 TO 7
15 PRINT J
20 NEXT J
RUN

OUTCHR [exp]

Displays on the screen the ASCII character corresponding to the specified ASCII value.

Example: >OUTCHR (65)

Displays an A at the next text position on the screen.

PEEK [exp], exp2]

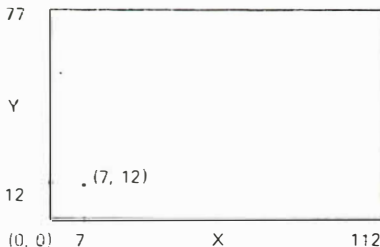
Function which returns the position number of the color previously assigned by PLOT to point (exp1, exp2). See PLOT for a description of screen coordinates and COLOR for a description of position numbers.

Example: C = PEEK (X, Y)

In this example, C will be a number from 0 to 3, corresponding to the position number of a color assigned in a previous COLOR statement.

PLOT [exp], exp2, exp3]

Plots a color *exp3* at a specified x,y location *exp1*, *exp2*. The x-location, *exp1*, can range from 0 to 112, as shown in the diagram below. The y-location, *exp2*, can range from 0 to 77. The color, *exp3*, can be 0, 1, 2, or 3, representing the position number of a color assigned in a previous COLOR statement.



Example: >PLOT (7, 12, 3) plots color 3 at point (7, 12), as shown in the diagram.

POT [exp]

Function which reads the position of the potentiometer knob on the joystick, where *exp* must be 0 or 1. POT (0) reads the knob on the left joystick; POT (1) reads the knob on the right joystick. The potentiometer knob on the joystick returns a value for the function from 0 to 255, depending on the position of the knob.

Example: A = POT (0)

PRINT ["string".] [|%n.| exp] [,]

Outputs a character string, followed by the contents of an associated variable or expression. The computer prints the specified character string, *n* blank spaces, and then the value of the expression. If you omit *n*, the computer leaves 6 blank spaces.

The *n* spaces will be repeated for all output on the specified line. Note that if the PRINT statement ends with a comma, no carriage return is output.

Examples: >10 A = 8
>20 PRINT "HI", %5, A
 >RUN
 Hibbbb8

or:
 >PRINT 3,
 >PRINT 5
 3bbbbb5

or:
 >PRINT %3, A, B, C
 bbb4bbb5bbb2

REM comments

Includes explanatory notes in the program. Each REM line may be up to 32 characters long. REM statements are ignored when the program is run.

RETURN

Causes the program to transfer to the statement after the last GOSUB. That is, RETURN ends a subroutine.

Example: 420 RETURN

or:
 420 IF X = 5 RETURN
 [See GOSUB example]

REW

Rewinds the tape (turns on tape motor). After the computer reads the REW statement, push the REWIND button on the tape drive. Then type any character on the keyboard to tell the computer that rewinding is complete.

Example: >REW
 (Then push REWIND)
 (When rewinding is complete, push any key)

RND [n]

Function which returns a random number between 1 and *n*.

Example: 10 X = 100
 20 A = RND (X)

RTAPE [n]

Turns the tape drive motor on, waits for a data file, reads *n* variables from 1 to *n* into the array at !(1) to !(*n*), then turns the tape motor off. Note that if there are not *n* variables in the data file, the computer continues to try to read them.

Example: >RTAPE (7)

RUN

Executes the current program starting at the lowest statement line number.

Example: >RUN
 (>GOTO 200 starts program at line 200)

SAVE [name]

Stores (saves) the current program on a cassette tape under the name *name*, which may be up to 5 characters long. If you do not enter a name, the program will be stored with no name. First push the WRITE and READ buttons on the tape drive simultaneously.

Example: (push WRITE and READ on tape drive)
 >SAVE ABCD

SIZE

Displays the size of the free program area remaining, that is, the number of characters still available for text.

Example: >PRINT SIZE
 843

SOUND [expl. exp2]

Generates various sounds depending on values selected for parameters *exp1* and *exp2*. Note that *exp1* must be between 0 and 7, and *exp2* must be a positive (non-zero) integer less than 32767. To turn off any sound, enter SOUND (7,4096)

Examples: SOUND (1,2) turns on a hissing noise

SOUND (7,4096) turns it off

STOP

Causes the program to stop, and returns to the OK level.

Example: 100 IF A = B STOP

TONE (f, l)

Plays tones, where f is the frequency and l is the length of the tone. TONE (F,CONST/F) plays tones for all F that will be the same length, according to the value of the constant CONST.

Example: 10 FOR F = 1 TO 100
20 TONE (F,1000/F)
30 NEXT F

WTAPE (n)

Turns the tape drive motor on, writes n variables from array locations !(1) to !(n) onto the tape, then turns the tape drive motor off.

Example: (push WRITE and READ on tape drive)
>WTAPE (8) saves the array !(1) to !(8) on the tape

Sample Edu-BASIC Programs

Sample: 1. Program to generate random tones, sounds and dots

```
10 Clear
20 F=RND (300); L=1000/F
30 M=RND (7); S=RND(32500)
40 X=RND (112); Y=RND(77)
50 C=RND(3)
60 TONE (F,L)
70 SOUND(M,S)
80 PLOT(X,Y,C)
90 FOR I=1 TO 200; NEXT I
100 GOTO 20
```

NOTE: For line 90: numbers greater than 200 decrease speed; numbers less than 200 increase speed.

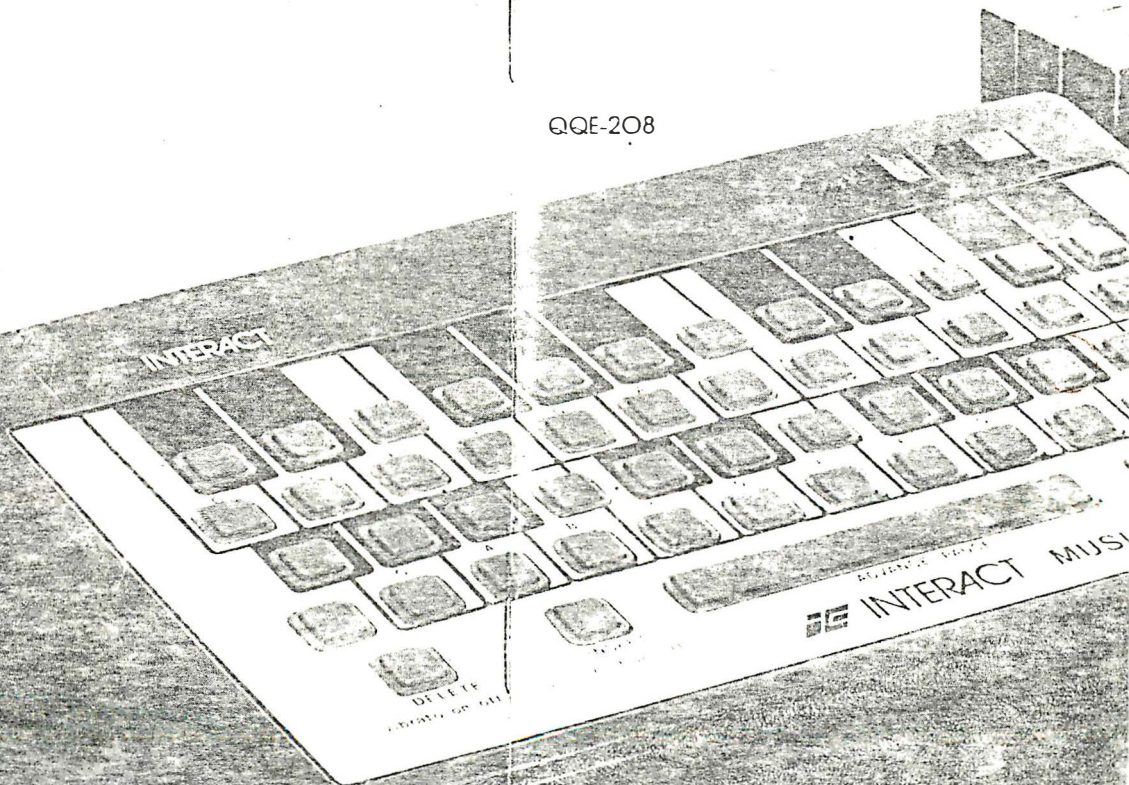
Sample: 2. Program to generate random sounds. (Also prints the numbers that made the sounds.)

```
10 M=RND (7); S=RND (32500)
20 SOUND(M,S)
30 PRINT M, " ", S
40 PRINT
50 SOUND (7,4096)
60 GOTO 10
```

To run these programs on the Interact Family Computer enter these lines and type the "CR" key after each line is entered. When finished, type LIST. This will display the program so you can check again for any errors. To run the program, type RUN and type the CR key. To save these programs on tape, follow the Writing Tape instructions in the Edu-BASIC Program Guide.

INTERACT MUSIC

QQE-208



INTERACT ELECTRONICS INC.

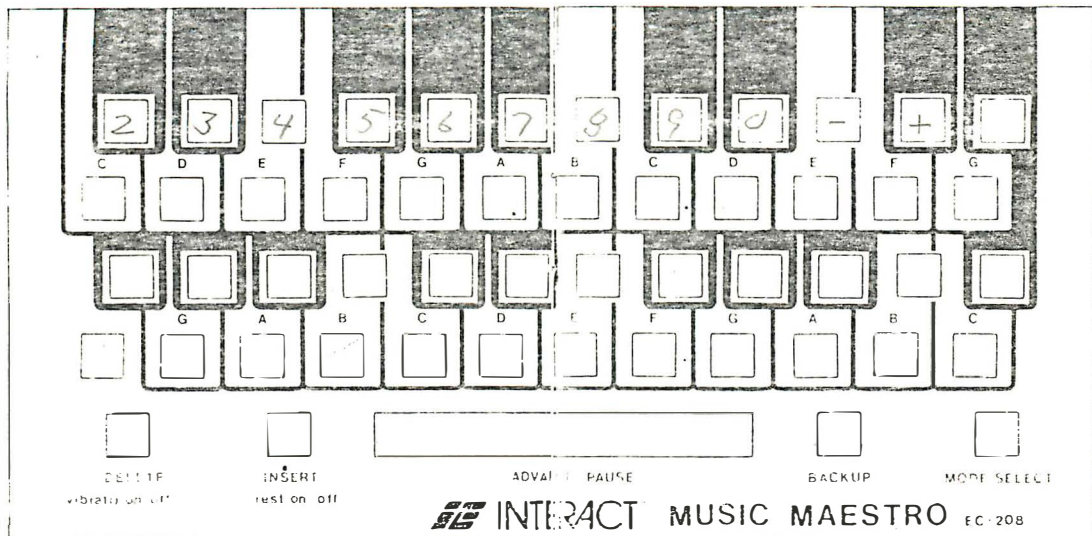
P.O. Box 40, Ann Arbor, MI 48107

Printed in U.S.A.

The Keyboard Overlay

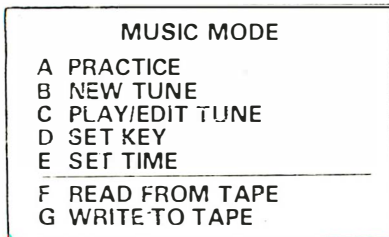
Place the music keyboard overlay on the keyboard of the computer. This represents a continuous three octaves of notes, with the lowest notes at the bottom left of

the keyboard and the highest notes at the top right. Middle C occurs twice, once at the right end of the lower keyboard and once at the left end of the upper keyboard, to make playing more convenient.



Various Music Modes

When the program has finished loading, the following display appears:



This display, called the Command Menu, lists the seven available command modes, each of which enables you to use MUSIC MAESTRO in a different way.

A. PRACTICE displays the notes on the TV screen as you play them. You see and hear the notes, but they are not stored in the computer memory.

- B. NEW TUNE** stores the notes in the computer memory for later editing as you play, hear, and see them on your screen.
- C. PLAY/EDIT TUNE** replays the notes you have stored with NEW TUNE and allows you to delete and add notes as well.
- D. SET KEY** sets the key signature to the key you desire. Any tune currently in storage is automatically transposed to the key signature set in SET KEY. If SET KEY is not used, the initial key of C Major remains.
- E. SET TIME** sets the time signature to the time you desire. Any tune currently in storage is automatically transposed to the time signature set in SET TIME. If SET TIME is not used, the initial 4/4 time remains.
- F. WRITE TO TAPE** puts a tune stored in the memory of the computer onto a data tape for permanent storage.
- G. READ FROM TAPE** restores a tune to the computer memory from a data tape on which it was previously stored (with WRITE TO TAPE).

Although each of these modes has an essentially unique purpose, they are grouped by color according to their effect on the computer memory. The four colors correspond to the seven music modes as follows:

Introduction

The MUSIC MAESTRO application cassette turns your Interact Home Computer into a music composer. A keyboard overlay included with the cassette enables you to use your computer console as a piano-like keyboard covering three octaves of notes. As you strike various notes on the keyboard they appear on a musical staff on your television screen, along with the appropriate time and key signatures, accidentals (sharps and flats), and rests. At the same time, your television produces the correct sound for each note, just like a musical instrument.

MUSIC MAESTRO is an entertaining learning experience with many functions. You can practice a tune, play it back, edit it by deleting or inserting notes, transpose it to a different key, change the time signature, and store it on a cassette for future use. Use MUSIC MAESTRO to learn to sight-read any tune up to 400 notes long, and to transpose from one key to another. The fundamentals of music notation are used in every function, and become more familiar with every session.

This guide explains how to use MUSIC MAESTRO to receive its full value as an educational and enjoyable experience. The guide includes a demonstration of normal use. However, MUSIC MAESTRO's possibilities are many and varied — you are encouraged to experiment as you learn.

Loading the Cassette

To load the MUSIC MAESTRO cassette insert the cassette into the cassette deck and press the RESET button. When the initial display (DEPRESS L TO LOAD TAPE) appears on your TV screen, press the letter "L" on the keyboard, rewind the tape, if necessary, and press the READ button. (For a more detailed explanation on how to load the cassette, see "Loading a Cassette" in the *Interact Family Computer Owner's Guide*.)

While the tape is loading, this display appears:



On a color TV, adjust the color so the display background is green, the MUSIC MAESTRO title box is white, and the treble cleff symbol and staff are yellow. Correct color adjustment is important because the display color indicates what the computer is ready to do.

Example Music Maestro Tune

A sample tune is encoded on the program tape after the program information. Follow these steps to load the tune into the computer and see and hear what this program can do:

- 1) Make sure the Music Maestro program is in the Music Mode option "menu" as seen on page 2.
- 2) Depress any "F" key
- 3) Depress any "C" key
- 4) Depress the READ button on the tape deck to load the sample tune.

For more information, refer to the sections about "Play/Edit Tune" or "Read From Tape".

The Computer Memory

The Home Computer can store notes in a temporary "memory" during certain modes of operation. This memory keeps up to 400 musical elements (notes, sharps, flats, rests) available in the computer for playback and editing. Once the computer is turned off the contents of this memory are erased. Therefore, to replay a tune after turning off the computer, you must have permanently stored the tune on a data tape. (This is explained in "Write to Tape" and "Read From Tape".)

White

(Does not put notes in memory)

PRACTICE Mode
PLAY/EDIT TUNE Mode (without INSERT)

Green

(Puts notes in memory)

NEW TUNE Mode
PLAY/EDIT TUNE Mode (with INSERT)

Blue

(Transposes tune in memory)

SET KEY Mode
SET TIME Mode

Black

(Transfers contents of memory)

WRITE TO TAPE Mode
READ FROM TAPE Mode

The chart below describes the effects of the special keys in relation to the white and green background colors. These colors influence the actual production of notes, and are therefore the most often used.

WHITE BACKGROUND GREEN BACKGROUND

ADVANCE/PAUSE BAR	
Press once: plays next note Hold down: plays all following notes While playing: stops play At end of score: changes to green	Changes to white
INSERT (REST ON/OFF) KEY	
Changes to green	During manual rest state: begin automatic rest production During automatic rest state: begin manual rest production
DELETE (VIBRATO ON/OFF) KEY	
Delete character underlined by cursor	During non-vibrato state: begin vibrato During vibrato state: end vibrato
BACKUP KEY	
-----	Moves cursor back one note If at beginning of screen, moves to last note of preceding screen

To obtain any of the seven command modes at any time, press the MODE SELECT key at the bottom right corner of the keyboard, and select the appropriate letter (A-G).

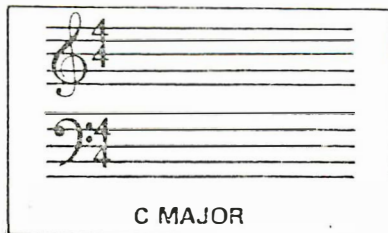
Sample Session Using Each of the Music Modes

Following is a sample session using each of the seven music modes. A portion of the melody "Ode to Joy" from Beethoven's Ninth Symphony is used throughout the session. In this sample session, all functions are presented step by step and each mode is explained in detail.

Note: Throughout your session with MUSIC MAESTRO, respond to all requests for information by striking the appropriate key(s) sharply. This is the best way to ensure that all responses are interpreted accurately by the computer. If at any time you experience confusion or difficulty with operation of the MUSIC MAESTRO program, you can begin over again by depressing the RESET button. This empties the computer memory and reestablishes 4/4 time in the key of C Major.

Practice

To begin the program you may practice a melody. Notice that the letter A indicates PRACTICE on the Command Menu. Press any A on the keyboard and the following display appears:

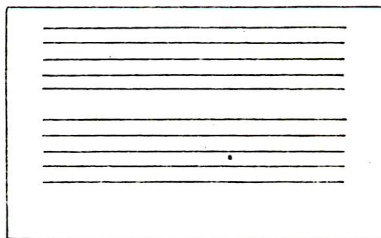


In this mode, each note you press on the keyboard sounds and appears on the displayed staff as well as in printed letters at the bottom of the display. For example, press the following adjacent keys on the upper keyboard: E E F G G F E D C D E E D D. The first display should look like this:



If you do not hear the notes as you play them, turn up the volume control on your television.

When you play more notes than can fit on one display screen, the display changes to a continuation of the staff with time and key signature no longer visible. So the second display appears as:



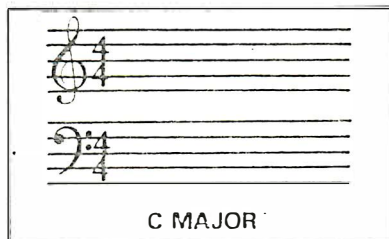
Note that the background of the display screen is white. This means that each note you play is simply heard and seen, just as if you were playing a musical instrument while looking at written music. How long you hold each key down determines the length of the note which is played. For example, pressing the key and quickly releasing it produces an eighth note, releasing the key more slowly produces a quarter note, and so on. The pauses in between notes do not affect the length of the notes or the rhythm of the tune. (Exception: See "Producing Rests" in this guide.)

When you are finished practicing, press the MODE SELECT key at the bottom right corner of the keyboard. The display returns to the Command Menu.

New Tune

Now play a tune and store it in the memory of the computer by using the NEW TUNE command mode. Every time you select NEW TUNE you erase the previous con-

tents of the memory, so use it only if you wish to start with a completely new selection. The letter B indicates NEW TUNE on the Command Menu, so press any letter B on the keyboard. Each time you select NEW TUNE, four "beats" play, representing the time signature that is in effect (in this case, 4/4 time). The following display appears:



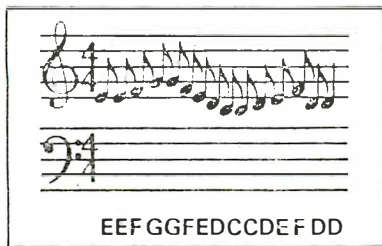
Note that the background of this display is green, meaning that each key you press sounds the note, displays it on the screen, and stores it in the memory of the computer. To put into memory the same tune you just practiced, press E E F G G F E D C C D E F D D on the upper keyboard. (Note: the last F is purposefully incorrect in order to demonstrate editing in the next section.) The display should look like this:



The NEW TUNE mode automatically stores these fifteen notes in the computer memory at the same time that they appear on the screen. Since the last F in the sequence is incorrect, you must now proceed with the PLAY/EDIT TUNE mode.

Play/Edit Tune

Press MODE SELECT to return the display to the Command Menu, and select PLAY/EDIT TUNE by pressing any letter C on the keyboard. The computer replays the notes which were stored in memory during the NEW TUNE procedure and stops at the end with this display:



The tune is automatically played to the end unless you stop it by pressing the ADVANCE/PAUSE bar. If you stop it in this way, pressing the ADVANCE/PAUSE bar plays the tune continuously to the end, or until ADVANCE/PAUSE is pressed again.

Note that the display background is white, meaning that any notes you play now are not stored in the memory of the computer. However, the notes which you stored in memory by using NEW TUNE and played back by using PLAY/EDIT TUNE still exist in memory. The display which appears when you select PLAY/EDIT TUNE is a representation of the current contents of memory.

To change the last F of this tune to an E requires five steps:

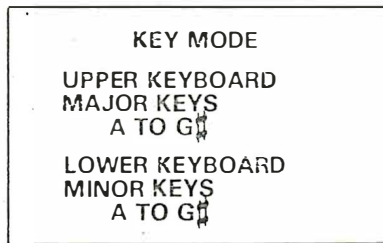
1. Press the BACKUP key at the bottom right corner of the keyboard, and the cursor moves back one note. (The cursor is a small line which designates one of the notes on the staff by appearing under it.) The cursor now underlines the incorrect F.
2. Press the DELETE key at the bottom left corner of the keyboard. The F disappears and the cursor moves back to underline the E.
3. Press the INSERT key at the bottom left corner of the keyboard. The display turns green to indicate that notes are to be inserted into the tune at the position of the cursor. The last portion of the tune (preceding the cursor) plays back automatically so you can hear it again. The cursor should now underline the space between E and D.
4. Press E and an E is inserted into memory between E and D.

5. Press the ADVANCE/PAUSE bar to indicate that the insertion is complete.

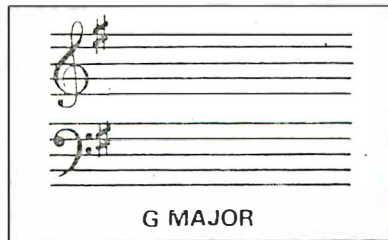
If you simply play more notes at the end of the tune while the PLAY/EDIT TUNE mode is in effect (white screen), the new notes appear in green. This means they are not being stored in memory, but are treated the same as notes played in the PRACTICE mode.

Set Key

MUSIC MAESTRO plays all tunes in the key of C Major and the time of 4/4 unless you tell it differently. To change the key signature, first press MODE SELECT to obtain the Command Menu. When the Command Menu is displayed on the screen, press any D on the keyboard to select the SET KEY option, and the following KEY MODE display appears:



Press the key in which you want your stored tune to be played. For major keys, press a key on the upper keyboard. For minor keys, press a key on the lower keyboard. For this sample session, press G on the upper keyboard. The tune stored in memory is automatically transposed to the key of G Major. The resulting key signature appears on your TV screen.



If you now return to the Command Menu by pressing **MODE SELECT** and select **PLAY/EDIT TUNE**, the tune appears on the screen and plays in G Major. If the transposition from the previous key signature to the new one results in a note that is an octave above or below the natural staff, it appears on the staff in red.

Set Time

In addition to automatically playing all tunes in the key of C Major, **MUSIC MAESTRO** also automatically plays in 4/4 time. To change the time signature, first press **MODE SELECT** to display the Command Menu. Next, since E indicates **SET TIME**, press any E on the keyboard. This display appears:

TIME SELECT MODE

- A 2/4
- B 3/4
- C 4/4
- D 6/8
- E OTHER

If you select A, B, C, or D the corresponding time signature flashes on the display and the display quickly returns to the Command Menu. For this sample session, press E, which represents OTHER. The display should look like this:

OTHER BEATS/MEASURE?

- A 2
- B 3
- C 4
- D 5
- E 6
- F 7
- G 8

The letter you provide in response indicates the number of beats per measure you desire. For the sample session, press C to select four beats per measure. This display changes to look like this:

BEAT = ?

- A EIGHTH
- B QUARTER

Press A (Eighth Note) and the new time signature is 4/8 or four eighth notes per measure. The display briefly displays the new time signature and returns to the Command Menu.

Write To Tape

Note: Only during the **WRITE** or **READ** procedure is it possible to rewind any cassette tape.

Now that you have practiced, stored, and edited a tune and set the key and time signatures, you can write the tune onto a data tape. Data tapes provide permanent storage which enable you to play the tune you have entered and edited during another **MUSIC MAESTRO** session.

You can use any conventional tape cassette for storing tunes during a **MUSIC MAESTRO** session. However, it is important to remember that any information currently on the cassette will be destroyed.

Before you can insert the data tape, you must remove the **MUSIC MAESTRO** application cassette. Place the data tape in the cassette deck and be sure the Command Menu is displayed on your TV screen. Next, simultaneously depress both the **READ** and **WRITE** buttons on the cassette control panel so that they remain in the depressed position. Select the **WRITE** mode by pressing any G on the keyboard and the display should change to this:

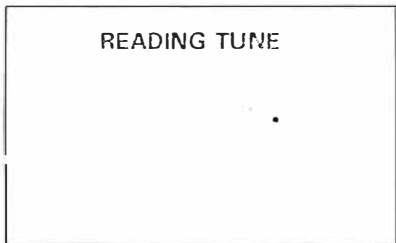
WRITING TUNE

Caution: Failure to press the READ and WRITE cassette control buttons *before* selecting the WRITE FROM TAPE mode (G) causes all data in the memory of the computer to be lost.

While writing to tape, the tape spindles turn until all the data stored in the memory of the computer is recorded on the tape. The screen then returns to the Command Menu display. To remove the tape at this time and save it for later replaying, press the STOP/EJECT button firmly.

Read From Tape

Finally, play back the tune you have stored on the data tape. To select the READ FROM TAPE mode, be sure the Command Menu is on the display, then press any F on the keyboard. The display looks like this:



Rewind the tape if necessary by depressing the REWIND button. Depress STOP/EJECT, then the READ button, making sure it stays in the down position. The tape spindles turn and the contents of the cassette are transferred into the computer memory as if you had just completed the NEW TUNE process. You can then return to the Command Menu by pressing MODE SELECT, and select PLAY/EDIT TUNE to play back the contents of the tape.

The data tape can be used again and again to restore your tune to the computer memory, or it can be used to store another tune.

Producing Rests

You can place rests in your tune in two different ways: manually and automatically. To produce rests manually, you must enter the PLAY/EDIT TUNE mode and insert rests in the same way that you insert a note. Once

you have pressed the INSERT key, which results in a green background, press the INSERT key twice again. The type of rest that results depends on the timing with which you press the INSERT key. It requires very precise timing and a certain amount of practice to master the production of particular rests. Because of this, manual insertion of rests while in PLAY/EDIT TUNE mode is not recommended.

To automatically produce rests as you play in the NEW TUNE mode, press the REST ON/OFF key (INSERT) once. This means that you are now in the automatic rest production state. While in this state, the pauses you make between notes are measured and rests which are equivalent to the length of the pauses are inserted into your tune. To get out of the automatic rest production state, press the REST ON/OFF key again.

Producing Vibrato

To produce notes with vibrato the screen must be green (NEW TUNE mode or INSERT of PLAY/EDIT TUNE mode). Press the VIBRATO ON/OFF key (DELETE) once; each note that you subsequently play is given vibrato, and is stored in the computer memory with vibrato. If you play back the stored tune by using the PLAY/EDIT TUNE mode, the notes replay with vibrato. To eliminate vibrato, press the VIBRATO ON/OFF key a second time.

INTERACT

FINANCIAL LIBRARY I

Program Guide



INTERACT ELECTRONICS INC.
P.O. Box 8140, Ann Arbor, MI 48107

Your FINANCIAL LIBRARY I program tape contains four Level II BASIC programs to help you manage your stock portfolio. These programs, like all Interact applications, emphasize ease-of-use and meaningful analysis. Each of the programs is run from Level II BASIC on any 16K Interact Model One personal computer. Detailed instructions for each program are provided on the following pages.

- INTRO** tells you about each program on the tape. Information includes the program name, its capabilities, how to load it and how to run and stop it.
- DEFINER** helps you prepare and edit data about your holdings, and produces a Data Tape for input to REPORTER and INCOME ANALYZER.
- REPORTER** helps you analyze gains and losses for each stock or for the portfolio as a whole. It also helps you analyze the effects of potential prices and buy/sell decisions, and the performance of alternative portfolio compositions.
- INCOME ANALYZER** focuses your attention on dividends, yields, and P/E and payout ratios of your stocks—individually or for the whole portfolio. INCOME ANALYZER also helps you analyze the income effects of alternative portfolio compositions.

See your Interact dealer for these other personal finance aids:

- FINANCIAL LIBRARY II** provides more BASIC programs to help you evaluate borrowing alternatives, compute your equity, calculate your net worth, and analyze and forecast trends.
- CHECKBOOK BALANCER** eases the monthly chore of balancing and reconciling your checking records. The program keeps uncleared entries on tape for future input, and also helps prepare a tape of your expenditures for input to programs in the Household Budgeting System.
- HOUSEHOLD BUDGETING SYSTEM** is a series of programs which help you plan your budget and track your progress against your plan. The library encompasses a ready-made budget account system of detail and summary expense and income categories to help you budget for any contingency.

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INTRO Program Guide

Loading the Program

To load INTRO, first load Level II BASIC in the normal manner if it is not already loaded. Then insert the FINANCIAL LIBRARY I tape into the cassette deck. Type "CLOAD "INTRO"" followed by a "CR". Press the REWIND cassette button to rewind the tape if necessary. Press the READ cassette button to load the program. Type a "RUN" command to start the program.

INTRO produces a screen-by-screen description of each library program. Press a "CR" to move one screen to the next. The program prints an "OK" message when you reach the end of the program descriptions. To load another library program, simply follow the instructions in the Program Guide for the program you want to run next.

DEFINER Program Guide

Introduction

DEFINER works with REPORTER and INCOME ANALYZER to help you analyze your stock portfolio. You tell DEFINER about your holdings, and it helps you prepare or update a Data Tape for input to the other programs, where your holdings may be analyzed and reported.

Loading the Program

If it is not already loaded, load the Level II BASIC language tape in the usual manner. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY I tape into the cassette deck. Type "CLOAD "DEFINER"" followed by a "CR". Push the REWIND cassette button to rewind the tape if necessary. Push the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Entering Your Stocks

DEFINER first asks if you already have stocks on a Data Tape previously prepared by DEFINER. Press "Y" for yes to receive instructions for loading the Data Tape. Press "N" for no if you don't have a tape, and DEFINER prompts you for information to be typed in from the keyboard. For each stock, you are asked for a name up to 10 characters long, the number of shares held, the total cost of the shares, the last 12 months total earnings/share, and the per-share annual dividend. Type in each

item when asked for it. Follow each item value with a "CR". You may work with a maximum of 25 stocks. If you do not have earnings or dividend data, enter zero when asked for these items. You will still have all items necessary for analysis using REPORTER. However, since the INCOME ANALYZER works primarily with earnings and dividends, you may not get useful reports from this program if you omit earnings and dividend items for most stocks.

Options

DEFINER then asks "WHAT NEXT?" and displays a menu of options. Press the code from the list below for the option you desire:

L-LIST STOCKS: Produces a report for each stock showing all input items. Press "CR" to proceed to the report for the next stock. Press "H" after any report to halt the listing and return to the options menu.

T-TAPE SAVE: Saves your portfolio on a Data Tape for input to other library programs. Instructions are displayed when you request this option. Because your Data Tape may have an extra-long leader, it is recommended that you start recording after advancing the tape a few turns. To do this, follow the rewinding instructions given by DEFINER but do not type the CR immediately after the tape is rewound. Rather, press the READ cassette button and advance the tape a few turns. Then press "CR" and continue to follow the instructions as they are displayed. As the tape is written, you hear several series of beeping noises separated by leader tones as DEFINER writes streams of information about your stocks.

A-ADD A STOCK: Asks you to type in information about a new stock to add to your portfolio. Type in each value when asked for it. Follow each value with a "CR". You may work with a maximum of 25 different stocks.

R-REMOVE A STOCK: Asks for the name of a stock, then deletes all holdings of the named stock from your portfolio.

C-COST: Asks for the name of the stock for which you want to change the total cost, then asks for the new cost.

N-NAME: Asks for the name of an existing stock, then asks you for a new name for it.

- S-SHARES HELD:** Asks you for the name of the stock for which you want to change the number of shares held, then asks for the new number of shares.
- E-EARNINGS:** Asks you for the name of the stock for which you want to change the annual earnings/share, then asks for the new earnings.
- D-DIVIDEND:** Asks you for the name of the stock for which you want to change the annual dividend amount per share, then asks for the new dividend.

To reflect the purchase of more of an existing stock, a stock split, or stock dividend, change to number of shares held to reflect the new total. Then change the total cost to include the new purchase cost if any. To reflect the purchase of a new stock (one in which you had no prior holdings) select the ADD option. To reflect the sale of part of your holdings, change the shares held and the total cost. To record the sale of all holdings in a stock, select the REMOVE option. Use other options as needed to reflect new earnings and dividends amounts for stocks in your portfolio.

You may use DEFINER to prepare several Data Tapes of different portfolios. Make sure to label each Data Tape so you know which portfolio is stored on which tape.

Loading Other Library Programs

When you have finished making a Data Tape of your current portfolio, press RESET and "R" and type a "RUN" command to rerun DEFINER so you can make or edit other portfolio tapes. To run REPORTER or INCOME ANALYZER, press RESET and "R". After you get an "OK" from BASIC, follow the instructions in the Program guide for the program you want to run next.

REPORTER Program Guide

Introduction

Now you can easily produce meaningful reports about your stock portfolio. REPORTER reads a Data Tape of information about your stocks prepared by DEFINER, then lets you analyze your holdings—investigate gains or losses for each stock or for the total portfolio based on current or anticipated prices, or, evaluate the performance of alternative portfolio compositions.

Loading the Program

If it is not already loaded, load the Level II BASIC tape in the usual manner. After you get an "OK" from BASIC, insert the

FINANCIAL LIBRARY I tape into the cassette deck. Type "LOAD "REPORTER"" followed by a "CR". Push the REWIND cassette button to rewind the tape if necessary. Push the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Entering your Portfolio

REPORTER gets information about your holdings from a Data Tape prepared by DEFINER. If you do not have such a tape, see the "DEFINER Program Guide". If you have a tape, follow REPORTER's instructions for loading it.

Entering Prices

After loading your portfolio you are asked to type in a price per share for each stock. The name of each stock and your average cost/share are displayed before you are asked for the stock's price. To analyze actual portfolio performance, enter current prices. To evaluate performance based on your expectations, enter your forecast for each stock. Follow each value with a "CR". You may enter prices using the decimal point or using fractions. For example, a stock price of \$24 50/ share may be entered as 24.5, 24.50 or 24 1/2. Use the "+" key for the slash (/) in a fraction.

Options

REPORTER next asks, "WHAT NEXT?" and displays a menu of options. Press the first letter of the option you desire:

- Total Stocks** Displays the current worth, original cost and dollar and % gain or loss for the entire portfolio. REPORTER also displays the current balance in a special "cash account". The cash account balance starts out at \$0.00. The account balance is recomputed as you "buy and sell" stocks using the BUY and SELL options described below. Press "CR" to return to the options menu.
- List Stocks** Displays a report for each stock showing shares held, price, value based on the prices you entered, purchase cost, dollar and % gain or loss, and the stock's percentage of the worth of the entire portfolio. Stocks which exhibit a gain of 10% or more are displayed against a green background. Those with a loss of 10% or more are

displayed on red; all others use a yellow background. This allows you to move quickly through reports and easily identify the high gain/loss stocks. Press a "CR" after a report is displayed to see the report for the next stock. Press an "H" after any report to halt reporting and return to the option menu.

Display Stock	Produces the same report as "LIST STOCKS", but for one stock only. Enter the name of the stock to report when asked, followed by a "CR". Press a "CR" to remove the report from the screen and return to the options menu.
Omit a Stock	Asks for the name of a stock to omit temporarily from calculations and reports. The stock is still on your Data Tape, and may be put back into calculations and reports by using the "RESTORE" option described below. After omitting a stock, use the "TOTAL STOCKS" option to see if your portfolio would have performed better without the omitted stock.
Restore Stock	Puts the omitted stock whose name you specify back into calculations and reports.
Price Change	Allows to enter a new "current" price for the stock you name. The new price is used in further analyses and reports.
Buy	Asks you for the name of a currently-held stock, then asks how many shares you wish to "purchase" at the current price. The cost of the specified purchase is subtracted from the current balance of the cash account included in the TOTAL STOCKS report, and your additional holdings are included in further analyses. The holdings information on your Data Tape is NOT changed.
Sell	Asks you for the name of a currently-held stock, then asks how many shares you wish to "sell" at the current price. Proceeds from the "sale" are added to the current balance of the cash account included in the TOTAL STOCKS report, and your "sale" is subtracted from your holdings in further analyses. The information on your Data Tape is NOT changed.

Loading Another Library Program

Press RESET and "R", then type "RUN" to rerun REPORTER with another portfolio Data Tape. To run DEFINER or INCOME ANALYZER, press RESET and "R". After you get an "OK" from BASIC, follow the loading instructions in the Program Guide for the program you want to run next.

INCOME ANALYZER Program Guide

Introduction

INCOME ANALYZER helps you analyze and report dividend income, yield, and P/E and payout ratios for your portfolio. INCOME ANALYZER also helps you analyze the income effects of alternative portfolio compositions, anticipated dividends and so on.

Loading the Program

If it is not already loaded, load the Level II BASIC language tape in the usual manner. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY I tape into the cassette deck. Type "CLOAD "INCOME:"" followed by a "CR". Push the REWIND cassette button to rewind the tape if necessary. Push the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Entering Your Portfolio

INCOME ANALYZER gets information about your holdings from a Data Tape prepared by DEFINER. If you do not have such a tape, see the "DEFINER Program Guide". If you have a tape, follow ANALYZER's instructions for loading it.

Entering Prices

After loading your portfolio you are asked to type in a price per share for each stock. The name of each stock and your average cost/share are displayed before you are asked for the stock's price. To analyze actual portfolio performance, enter current prices. To evaluate performance based on your expectations, enter your forecast for each stock. Follow each value with a "C". You may enter prices using the decimal point or using fractions. For example, a stock price of \$24.50/share may be entered as 24.5, 24.50 or 24 1/2. Use the "-" key for the slash (/) in a fraction.

Options

INCOME ANALYZER next asks, "WHAT NEXT?" and displays a menu of options and codes for them. Press the code for the option you desire:

- | | |
|---------------|--|
| Total Stocks | Displays the current worth, annual dividend income and % yield for the entire portfolio. |
| List Stocks | For each stock, displays number of shares held, current price per share, annual total dividends, % yield, % of portfolio dividend income contributed by the stock, and current P/E and payout ratios. Press "CR" to see the report for the next stock. Press "H" after any report is displayed to halt reporting and return to the options menu. |
| Display Stock | Produces the same report as LIST STOCKS, but for one stock only. Enter the name of the stock when asked, followed by a "CR". Press a "CR" to remove the report from the screen and return to the options menu. |
| Omit a Stock | Temporarily omits a stock from further analyses. The stock may be put back into reports and analyses using the RESTORE option described below. Use the TOTAL STOCKS option after omitting a stock to see how your portfolio would have performed without the omitted holding. Your Data Tape is NOT affected by OMIT. |
| Restore Stock | Puts the omitted stock whose name you enter back into analyses and reports. |
| Price Change | Allows to enter a new "current" price for the stock you name. The new price is used in further analyses and reports. |

Loading Another Program

Press RESET, and "R" then type a "RUN" command to rerun ANALYZER with a new Data Tape. To run DEFINER or REPORTER, press RESET AND TYPE "R". After you get an "OK" from BASIC, follow the loading instructions in the Program Guide for the program you want to run next.



Your Financial Library II program tape contains five Level II BASIC programs to help you with your personal financial management:

- INTRO** provides information about other programs on the library tape, including the program name, its capabilities, how to load and run it and how to stop it.
- LOANS** helps you evaluate borrowing alternatives, compute equity, monthly payments and more.
- SAVINGS** helps you evaluate alternative savings plans and focus on the plan that meets your specified savings goal.
- NETWORTH** asks you questions about your assets and liabilities to help you figure your net worth.
- TRENDS** puts the power of professional forecasting techniques in your hands. The program develops a time-trend equation for your data, and forecasts it into the future.

These programs, like all Interact applications, emphasize ease-of-use and meaningful analysis. Each of the programs is run from Level II BASIC on any 16K Interact Model One personal computer. Detailed instructions for each program are provided on the following pages.

INTRO Program Guide

Loading the Program

First load Level II BASIC in the normal manner if it is not already loaded. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY II tape into the cassette deck. Type "CLOAD "INTRO"" followed by a "CR". Press the REWIND cassette button to rewind the tape if necessary. Press the READ cassette button to load the program. After you get an "OK" from BASIC, type a "RUN" command to start the program.

INTRO produces a screen-by-screen description of each library program. Press a "CR" to move from one screen to the next. The program prints an "OK" message when you reach the end of the program descriptions. To load another library program simply follow the instructions in the Program Guide for the program you want to run next.

LOANS Program Guide

Introduction

With LOANS, you won't need a banker to investigate borrowing alternatives. LOANS can compute a monthly payment, or the number of months it would take to pay back a loan at a rate you specify, or how much you can borrow at a given repayment rate. And there's more—LOANS can tell you what your equity is at any moment, how much of a given payment is interest and how much is principle and so on.

Loading the Program

First load Level II BASIC in the usual manner if it is not already loaded. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY II tape into the cassette deck. Type "CLOAD "LOANS"" followed by "CR". Push the REWIND cassette button to rewind the tape if necessary. Push the READ cassette button to load the program. When you get an "OK", type a "RUN" command to start the program.

Choosing the Item to Compute

LOANS computes any of four items pertaining to an installment loan, given values for the other three items:

Monthly payment: Given the amount you want to borrow, the interest rate you would pay and the length of the loan, LOANS tells you what the monthly payment would be.

Loan amount: If you know the monthly payment, term of the loan and the interest rate, LOANS computes the original amount borrowed. This is particularly useful if you know a monthly amount you could afford to pay on a loan, and want to know how much you could borrow.

Term: Given the amount to borrow, the annual interest rate and your desired monthly payment, LOANS tells you how many months it would take to pay back the loan.

Interest %: If you know the borrowed amount, term and monthly payment, LOANS tells you what percentage interest rate is being paid on the borrowed funds.

When asked which item you want to compute, press "A" to compute the amount of the loan, "T" for the term (life) of the loan in months, "I" for the annual percentage interest rate, and "P" for the monthly payment amount.

Defining the Loan

After you specify which item LOANS is to compute, you are asked to type in values for the other three items from the list above. You may use the backspace key to erase mistakes. Follow each value with a "CR". Please note that the term of a loan is entered in years. You may type in fractional terms, e.g. "2.5" for 2½ years (30 months).

The Loan Summary

After all three required values are entered, LOANS displays a Loan Summary which reports the four items listed above. The item you asked LOANS to compute is displayed in yellow. The report stays on the screen until you press the "CR" key. After displaying the Loan Summary for your initial values, you may define a new problem, request an amortization schedule, or change one of your original values. LOANS displays these options and the codes for them. Enter the code for your desired option.

Changing Your Inputs

You may change any of the three values you entered originally. Changing input values lets you examine alternatives easily. For example, suppose you originally computed a monthly payment. Now you wonder, "How much would my payment be if I borrowed a little more?" Press "A" for "AMOUNT" when asked which item to change. Then enter the higher amount. LOANS then displays a Loan Summary with the new monthly payment based on the higher amount.

The Amortization Schedule

For each payment, the amortization schedule tells you how much of the payment is interest charges and how much is principle. It also tells you how much equity you have accumulated and how much interest you have paid since you began paying on the loan. When you request this schedule, LOANS asks at which payment reporting should begin. Enter your desired payment number, followed by a "CR". One screen display is used to report each payment, beginning with the payment you specified. Press "CR" to see the report for the next payment. Press "H" for "HALT" to return to the Loan Summary.

Starting a New Program

To respectify which item to compute and to enter new starting values, press "N" for "NEW PROBLEM" when asked for your option choice.

EXAMPLES: The following examples describe typical sequences you might follow when using LOANS:

Example 1: Mr. Jones is thinking of buying a new car, and wants to get an idea of how much he can afford to spend. He has \$1500 to use as a down payment, and figures he can afford a monthly payment of about \$125. He knows his bank offers 3, 4 and 5 year car loans at 11% annual interest.

1. Mr. Jones runs the LOANS program. He presses "A" for "AMOUNT" when asked which item to compute.
2. Next, he defines his loan as a 3-year loan at 11% interest with a \$125 monthly payment. The Loan Summary report tells him he can borrow \$3,818.12 at 11% for 36 months, making a monthly payment of \$125.
3. After pressing a "CR" to remove the Loan Summary from the screen, he presses "T" for "TERM" when asked which item to change. He specifies a new term of 4 years. His new Loan Summary tells him he can borrow \$4,836.45 at 11% over 48 months, still making a \$125 monthly payment. He repeats this process for a term of 5 years, and finds he can borrow \$5,749.15 over 5 years.

Mr. Jones now knows that with his down payment, he can spend \$5,318-\$7,249 for a new car, depending on how long he wants to take to pay for it at \$125/month.

Example 2: Jim Public has his eye on a motor boat which sells for \$7,500. His local bank tells him they can loan him the money at 12% over 4 years. Jim wants to know what his monthly payment would be, and also wonders if he could afford to pay off the loan in 3 years instead of 4.

1. Jim runs LOANS and presses "P" for "MONTHLY PAYMENT" as the item to compute.
2. He defines his loan as a 4-year term, \$7500 loan at 12%. The Loan Summary report tells him his monthly payment on a 48-month loan of \$7,500 at 12% would be \$197.51. He presses "CR" to remove the Loan Summary from the screen and display his further options.
3. Jim presses "T" for "TERM" to change the life of the loan. He enters a new term of 3 years. The Loan Summary tells him he could pay off a \$7,500 loan at 12% interest in 36 months if he made a monthly payment of \$249.11.

Example 3: The Smiths have been making a monthly mortgage payment of \$400 not including property taxes, for the past 5 years. The mortgage has a term of 25 years and an interest rate of 8.5%. They put \$9,325 down when they purchased the home. They are thinking of buying a new home and wonder how much they could expect to pocket from the sale of their present home:

1. Mr. Smith runs the LOANS program and presses "A" for "AMOUNT" as the item to compute, since he doesn't have the exact amount of the mortgage handy.
2. LOANS tells him his mortgage amount was \$49,675 at 8.5% over 25 years with a \$400 monthly payment. He presses "CR" to remove the Loan Summary report from the screen.
3. Next, he presses "S" for "AMORTIZATION SCHEDULE" when asked for his option. He specifies "60" for the 60th month as the payment at which to begin reporting. The schedule tells him that they have accumulated \$3,583.23 in loan equity in the five years they have been paying on their home.

The Smiths figure their present home has appreciated about \$30,000 since they bought it. Their total equity is the down payment plus the appreciation plus the loan equity. Therefore, they would pocket about $\$9,325 + \$30,000 + \$3,583$, or \$42,908 total if they sold their home now.

Loading Another Library Program

Press the RESET button, then type an "R". After you get an "OK" from BASIC, follow the instructions in the Program Guide for the program you want to run next.

SAVINGS Program Guide

Introduction

Now it's easy to investigate alternative savings plans. Tell SAVINGS how much you want to save every month. SAVINGS tells you how much you'll have at the end of any time period you specify.

Loading the Program

First load Level II BASIC in the normal manner if it is not already loaded. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY II tape into the cassette deck. Type "CLOAD "SAVINGS"" followed by a "CR". Press the REWIND cassette button to rewind the tape if necessary. Press the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Entering Your Savings Plan

You are asked a series of questions to define your personal savings plan. Type in each value as it is requested, using the back-space key as necessary to erase errors. Press the "CR" key to enter a value:

INITIAL INVESTMENT: Enter the amount of money you have with which to begin your plan. It might be the current balance in your savings account. If you are opening a new account, use the amount of your initial deposit.

NOMINAL INTEREST RATE %: Use the interest rate your savings account earns. Use the stated rate, not the "effective annual yield".

COMPOUNDING PERIODS/YEAR: Specify the rate at which your interest is compounded. Do not confuse this rate with the rate at which interest is actually paid—that is, posted to your account. For example, enter "4" for quarterly compounding, "12" for monthly. Enter a zero for continuous compounding.

ADDITIONAL MONTHLY DEPOSIT AMOUNT: Enter the amount you intend to deposit every month.

FOR HOW MANY YEARS: Enter the number of years to use in calculating your total savings. For example, if you want to know how much you'd have after 3½ years following the plan you've outlined, enter "3.5".

SAVINGS now computes and displays your total savings under the plan you gave after the number of years you specified. Press "CR" to remove the savings report from the screen. SAVINGS next displays your current plan and gives you a chance to change any item in it, or to start an entirely new problem. You may change any item by typing the code from the list SAVINGS gives you. After asking you for a new value for the item you selected, SAVINGS displays the total amount you would save under your new plan. You may continue to change items and display results until you have investigated any alternative you wonder about. Press "N" to define an entirely new problem.

Loading Another Library Program

Press the RESET button, then type an "R". After you get an "OK" from BASIC, follow the instructions in the Program Guide for the program you want to run next.

NETWORTH Program Guide

Introduction

Now you can use the same methods employed by financial institutions to compute your net worth. Just answer the questions asked by the program—you're probably worth more than you think!

Loading the Program

First load Level II BASIC in the normal manner if it is not already loaded. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY II tape into the cassette deck. Type "CLOAD "NETWORTH"" followed by a "CR". Press the REWIND cassette button to rewind the tape if necessary. Press the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Entering Data

NETWORTH asks you for amounts of all assets and liabilities you may have. A brief definition of each item is given below. Enter each value, followed by a "CR". Press "CR" only to specify a zero amount for an item. As you enter each value, NETWORTH maintains a running total at the top of the screen. After all items for assets or liabilities have been entered NETWORTH asks, "CORRECT?" Press "Y" if you entered all items correctly. Press "N" and the program reviews all items in the category. For each item, the original value is displayed. Press a "CR" if the item amount is correct. Type in the new amount followed by a "CR" if you need to make a change. After all assets and liabilities have been entered and specified as correct, NETWORTH prints the total assets, total liabilities and net worth, and again asks "CORRECT?". Press "Y" for "yes", Press "N" for "no", and NETWORTH asks if you want to change items under the asset category or the liability category. Press the code for the category from the list given by the program. NETWORTH then reviews all items in your chosen category, allowing you to make changes.

Categories

The following list gives a brief definition of each asset and liability item that NETWORTH asks you to enter.

ASSETS

- Cash on hand: The amount of cash you have on hand that is not in a bank account.
- Cash-checking accounts: The total current balance of your checking accounts.
- Cash-savings accounts: The total current balance in any checking accounts you have.
- Loans receivable: The total amount due from any loans you have made and for which you expect repayment.
- Home market value: The amount for which you could sell your home right now.
- Other real estate market value: The total of amounts you would receive if you sold any other real estate you have now, e.g. a vacation home.
- Automobiles: The current market value of your automobiles. Include recreational vehicles.
- Furniture: Estimate the amount you would receive from the sale of all your furniture and household appliances.
- Jewelry: The current market value of your jewelry.
- Works of Art: The current market value of paintings, sculptures, and so on.
- Furs: Coats, stoles, and other fur garments.
- Other personal property: Estimate the market value of any personal property not included in other categories above, e.g. musical instruments, hobby equipment, recreational equipment and so on.
- Stocks: Enter the value of your stocks based on current prices for each stock.
- Bonds: Enter the value of your bonds based on current bond prices.
- Mutual Funds: Enter the value of shares invested in mutual funds using current prices.
- Life Insurance Cash Surrender Value: Enter the amount you would receive if you cashed in your life insurance policy now.
- Business Equity: Enter the current market value of your share of any business you own in whole or in part.
- Miscellaneous Assets: Enter the total value of any assets not covered by the categories listed above.

LIABILITIES

- Visa: Enter your current VISA card balance.
- Master Charge: Enter your current Master Charge card balance.
- Other Cards: Enter the total balance from all other charge cards, including retail store charges, gasoline credit cards and so on.
- Medical Bills: Enter the total amount due for medical services, including doctor, dentist, optometrist, etc. Include charges outstanding for prescriptions, surgery, prosthetics, glasses and so on.
- Unpaid Taxes: Enter only taxes you owe but have not yet paid. Include income, self-employment and property taxes.
- Auto loan: Enter the amount you still owe on your automobile. Include loans for recreational vehicles.
- Other loans: Enter the total amount you owe on any loans not covered by the above categories, excluding your home mortgage.
- Mortgage on Home: Enter the balance owed on your home.
- Other Mortgages: Enter the total owed on any other mortgages, such as a vacation home mortgage.
- Miscellaneous Debts: Enter the total amount of any other debts you may have which are not covered by other categories listed above.

Loading Another Library Program

Press the RESET button, then type an "R". After you get an "OK" from BASIC, follow the instructions in the Program Guide for the program you want to run next.

TRENDS Program Guide

Introduction

How fast is your home appreciating? How much might your stocks be worth in a year if past trends continue? With TRENDS and your interact, the power of professional forecasting techniques is yours.

Loading the Program

If it is not already loaded, load the Level II BASIC language tape in the usual manner. After you get an "OK" from BASIC, insert the FINANCIAL LIBRARY II tape into the cassette deck. Type "CLOAD "TRENDS"" followed by a "CR". Push the REWIND cassette button to rewind the tape if necessary. Push the READ cassette button to load the program. After you get an "OK", type a "RUN" command to start the program.

Specifying Periodicity

TRENDS asks if you have weekly, monthly, quarterly or annual data values. Press "W" for weekly data, "M" for monthly, "Q" for quarterly, "A" for annual values, or "O" for other. Annual compound growth rates are not computed for data with "OTHER" periodicity.

Entering Values

You are asked for values one at a time. Type in the value using the backspace key to erase mistakes. Press "CR" to enter the value. Press "E" and a "CR" to signal that you are done entering values. TRENDS works with a maximum of 30 values including forecasted data points.

Displaying Data

After you are done entering values, TRENDS asks, "DISPLAY DATA?" Press "Y" for yes, "N" for no. The listing displays the sequence number and value for each data point. As your values are listed, you may freeze the listing temporarily by holding down the "CONTROL" key and typing an "S". To resume the listing again, hold down "CONTROL" and type a "Q".

Editing Values

After displaying the data if you requested it, TRENDS asks, "EDIT ANY VALUES?" Press "Y" for yes, "N" for no. If you request editing, TRENDS asks, "WHICH VALUE?" Enter the sequence number of the value you want to change. After displaying the old value, TRENDS asks for the new one. Enter the new value followed by a "CR". After editing a value, TRENDS gives you a change to list the data again.

Forecasting

After you are done listing and editing values, TRENDS asks how many data points into the future to forecast. Enter the number of periods to forecast, followed by a "CR". Remember that TRENDS uses a maximum of 30 data points including the forecast.

Trend Statistics

TRENDS next displays the results of the time-trend linear regression for your data. The first report shows:

- 1) The average, minimum and maximum data values, along with the standard deviation.
- 2) The percentage of the variation in your data which is accounted for in the computed regression equation. The higher this percentage, the more accurately the equation describes your data.

Press a "CR" to see the next report:

- 1) TRENDS tells you the average per-period increase or decrease between data points.
- 2) TRENDS also displays the regression equation $Y = A * T + B$ and values for A and B. In this equation, the variable Y is the value of your data as forecast for period "T".

Press a "CR" to compute your forecast.

Forecast Display

After computing your forecast, TRENDS lists each actual and each forecasted data value. Actual values are printed in green and marked with an "A". Forecasted values are printed in blue and marked with an "F". TRENDS lists 7 values at a time, then waits until you press a "CR" before listing more data. After all actual and forecasted values are listed, TRENDS displays the compound per-period and annual growth rates exhibited by your data. Press a "CR" and TRENDS draws a bar graph of actual and forecasted values. Green bars represent actual values; blue bars are forecasted values. The number of units represented by each mark on the vertical axis is displayed at the top of the graph.

After the forecast display, TRENDS asks if you want to review the results again, beginning with the first regression statistics report. Press "Y" for yes. Press "N" for no, and TRENDS goes back to the beginning of the program, allowing you to specify values for a new analysis.

Interpreting Your Forecast

TRENDS uses the computed regression equation to calculate your forecast. This equation mathematically described past history, and assumes the trend follows a straight line. How accurately the equation describes past history is judged by the percentage of explained variation shown in the first report. In general, a value of 85% or higher means the equation is a good description of past performance. For the equation to accurately model the future, underlying factors must continue to exhibit the average past linear trends. You may judge this somewhat by examining the bar graph. If the values close to the forecast seem to be changing at a different rate than earlier values, this suggests the overall trend might be changing, so the forecast may be less reliable. Remember that not even a computer has a crystal ball, and the future can never be precisely predicted.

Loading Another Library Program

Press the RESET button, then type an "R". After you get an "OK" from BASIC, follow the instructions in the Program Guide for the program you want to run next.

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