

MASTERING MILLIPEDE



STAR WARS TACTICS

Nov. 1983 \$2.95
WPS 38140

JoyStik[®]

HOW TO WIN AT HOME, COMPUTER & ARCADE GAMES

WINNING STRATEGIES
FOR DRAGON'S LAIR

EXPERT'S
TIPS ON JOUST

BEATING
BUMP 'N' JUMP





Editor's Message

A few months ago, a new Atari 2600 cartridge (Texas Chainsaw Massacre from Wizard Video Games) arrived at our offices for review. Phrases on the cartridge box like "Let your most wicked fantasies go wild!" and "Know the total pleasures of destruction" aroused my curiosity. Although I don't like the idea of a game selling itself on violence alone (or violence at all, for that matter), I do like intense action games, and decided to give Texas Chainsaw Massacre an objective try.

I was disappointed. The movie Texas Chainsaw Massacre is very intense, but the game is lifeless. It's a little like Frogger, but without the entertaining background music (the best part of Frogger), and I gave it one star out of a possible five in the Home Front section of this issue. The game is very violent symbolically, with Leatherface and his chainsaw making a bloody mess out of anyone that happens by, but it certainly doesn't have the so-called "violent" appeal of games like Asteroids, Berzerk, and Defender. You just watch various objects move across the screen and occasionally hit the fire button; Texas Chainsaw Massacre (the video game) is, in a word, boring.

So what went wrong? Why doesn't this exciting (albeit offensive) theme make an exciting video game? Well, it seems to me that the makers of Texas Chainsaw Massacre made a mistake when they assumed that vicarious violence is an integral part of the thrill of video games. (Sure, anti-game fanatics have been saying that for years, but I didn't think anyone had been listening to them.)

The ability to control what you see on the screen is the real thrill of playing video games. This is why interactive laser disk games have been creating so much excitement lately—they give the player control over detailed animation and imagery unlike anything that has appeared on game screens before. (It doesn't even matter very much what the imagery is—Dragon's Lair, for example, is a cartoon that most players would be embarrassed to admit they watch.) The appeal of a good game, then, isn't the result of vicarious or imaginary feelings—a good game is fun because of the *real* feeling of control that it gives you. Texas Chainsaw Massacre didn't give me that feeling at all.

Doug Makugh
Doug Makugh
Managing Editor

CONTENTS



32

NEO

THE SECRETS OF DRAGON'S LAIR 32

Laser disk technology bows in the arcades with this latest entry from Cinematronics. We'll show you how it works... and how to win.

THE WINNING EDGE

JOUST 28

Even the best flyers will rack up higher scores with these top strategy tips from Eric Ginner.

FEATURES

STAR WARS 10

The force is with you with Tad Perry's strategy tips for Atari's flashy new space game entry.

HURDLING THE OBSTACLES OF BUMP'N'JUMP 16

Fast-paced strategies for the newest game to hit the driving circuit.

MILLIPEDE: THE BUGS ARE BACK 22

The swarms have returned, but they're not unbeatable in this sequel to Centipede. Beat them in no time with these tips.

INTERACTIVE VIDEO: THE CHOICE IS YOURS 50

Home computer technology from Pioneer and RCA offers the player a series of options.

REACHING THE SUMMIT OF CANNONBALL BLITZ 56

Master the rivet and springboard screens with updated strategy for an Apple classic.

DEPARTMENTS

LETTERS 4

NEW WAVES 8

The best from the Consumer Electronics Show.

HOME FRONT 38

The last word on bargains for your home video library.

TRICKS OF THE TRADE 46

Inside tips from the arcade pros.

TECHNOCRACY 62

CHARTS 64



28



10



16



22



50



56



8



38



46

STRATEGY REVIEW

In your July 1983 issue you say you can get any back issues of JoyStik™ for \$2.95 plus 75 cents postage per copy. Can you please send me a list of the issues that contain information on playing Q*bert and Pac-Man?

Sammie Bankhead
Temple, TX

We get many requests about strategy articles in previous issues, so we've compiled the following list of coin-op game strategy articles for readers interested in ordering back issues. The articles marked with an asterisk () are Winning Edge articles.*

Centipede (Jan. '83*)
Defender (Sept. '82,
Nov. '82*)
Dig Dug (Nov. '82, Sept.
'83)
Donkey Kong (Nov. '82)
Donkey Kong, Jr. (Jan. '83)
Food Fight (Sept. '83)
Galaga (Apr. '83)
Joust (Jan. '83)
Ms. Pac-Man (July '83*)
Omega Race (Sept. '82)
Pac-Man (Sept. '82*,
Apr. '83)
Pengo (Apr. '83)
Phoenix (Sept. '82)
Pole Position (July '83)
Popeye (July '83)
Q*bert (Apr. '83)
Qix (Nov. '82)
Reactor (Nov. '82)
Robotron (Sept. '82)
Sinistar (Sept. '83)
Star Trek (July '83)
Tempest (Sept. '82*,
Apr. '83)
Tron (Jan. '83)
Tutankham (Nov. '82)
Xevious (July '83)
Zaxxon (Sept. '82)

*If you're interested in even more strategies for currently popular arcade games, pick up a copy of How to Win Arcade Video Games by the Editors of JoyStik™ Magazine at your local bookstore. It contains detailed strategies and difficulty settings for Dig Dug, Donkey Kong, Jr., Galaga, Joust, Ms. Pac-Man, Q*bert, Robotron, Sinistar, Tron, Xevious, Food Fight, Front Line, Pole Position, Popeye, Time Pilot, Zaxxon, and Zookeeper. How to Win Arcade Video Games is also available directly from us for \$2.95 (plus 75 cents postage and handling).*

SHARP EYES

You have a great publication with great artwork, upcoming game news, and strategy tips that have increased some of my scores tremendously. Keep up the great work!

While I was reading your article "Playing to Win at the Sequel Game" in the July 1983 issue, I noticed that the power pills in the Pac-Man/Ms. Pac-Man layout were missing and the dots surrounding them are not eaten. How is this possible? I am a serious gamer and have poured many tokens into Pac-Man and Ms. Pac-Man, but have never been able to accomplish this feat.

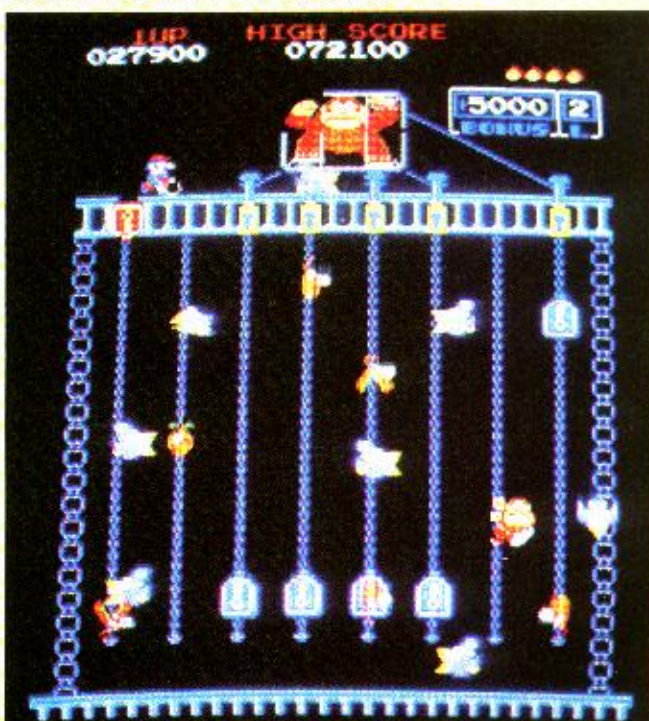
Steve Spatucci
Mt. Laurel, NJ

Well, Steve, we can't tell you how to get the energizers without eating any of the surrounding dots, but we can tell you how to take a picture that makes it look

Continued on pg. 6.



What happened to the energizers?



A Nitpicker flying below the chains.

like you did. Since the energizers are constantly flashing on and off, just take your picture during the fraction of a second when the energizers have disappeared (like we did). We're surprised at the number of readers that noticed this effect. Good game players (i.e., JoyStik® readers) seem to be just as observant when they read as they are when they play.

DONKEY KONG, JR.

In your Donkey Kong, Jr. article (Jan. '83 issue), you neglected to mention that on the second and following chains, the Nitpickers fly all the way below the chains. Also, on the left-most chains, if you avoid the apple and then start to push the next two keys up (about to the apple), two to four Snapjaws will go down the chain with the apple. Then simply drop the apple. This makes it much easier to finish the board.

Robert Springer
Greeley, CO

Thanks for the tips, Robert.

RAIDERS TIPS

I'd like to make a few comments about Rob Leachman's article on Raiders of the Lost Ark in the July 1983 edition of JoyStik®. First of all, every photo in it was backwards. Second, upon entering the Temple Treasure Room, you can always get the Ankh by waiting until the watch is at 6 o'clock, 5 to noon, or 5 past noon before taking the money bag.

Getting to the Black Market is easy. Give the Chai to

the Black Sheik in the Marketplace, and you will be transported to the Black Market in front of the raving lunatic. Drop a money bag next to the lunatic and you can pass.

Also, the Capstone is really just a pile of dirt, not real stone, which is why it's brown and you can dig down through it. For more information, you can obtain a free illustrated step-by-step pamphlet describing exactly what to do from Atari by calling their Customer Service Center's toll-free number at 800-538-8543 (800-672-1404 in California) during business hours.

G.P. Thomas
Ypsilanti, MI

Thanks for the strategy tips. You're right about the backwards pictures, and we apologize for the error.

POLE POSITION

In your July 1983 issue, the tips you gave for Pole Position are great. One thing, though, is that when you're about to go around that very sharp turn, take your car close to the left side unless there is a car already there. Stay in high gear, get a good grip on the steering wheel, and spin the wheel to the left as fast as possible. You will skid, but you should make it around the turn. Since I learned this strategy I have been able to get Pole Position every time.

Chris Evans
Bethlehem, GA

Although your approach will work, there are other

ways to handle the hairpin turn (fourth turn) that are more efficient. One is to stay to the right, at top speed, and then turn all the way to the left so that you slide across the track and come out of the turn on the left side. This approach is very quick, but it won't work if other cars are coming through the turn with you. A safer approach is to drive off the left side of the track just before the turn and then slide back onto the track as you come out of the turn. This way you avoid the other cars completely and only need enough clear space to slide back onto the track. Regardless of how you play it, the hairpin turn is definitely the most crucial part of each lap.

MR. DO!

I am very interested in the game Mr. Do! and would like to see some strategies for that game.

Andy Page
Charles City, IA

You've got it—next issue, we'll be including two pages of Eric Ginner's Mr. Do! strategies. Until then, avoid falling letters and eat all your cherries.

BUCK ROGERS, ASTRON BELT AND DRAGON'S LAIR

In your April 1983 issue, I

saw a picture of Buck Rogers battling treaded robots in the trench scene. I have got 73,000 on Buck and I wonder how far you have to go to reach them.

Also, when will Astron Belt go into the arcades? I have seen pictures of it and I am hoping it will be out soon. On a news program on TV, I saw a game like Astron Belt but it was animated. It was called Dragon's Lair, and I was wondering when it will be out.

Andrew Laird
Radnor, PA

The order of the screens in Buck Rogers was changed after the 1982 AMOA show (where we took the picture you mentioned). So, although the tread robots will eventually appear in the trench scene, it happens at a much later point in the production game than in the AMOA version.

Astron Belt has already been released in Europe and Asia, but it was only out at test locations in the U.S. when this issue went to press. Dragon's Lair, on the other hand, is already out and is featured in a 6-page article beginning on page 32 of this issue.

REACT

Your reaction to JoyStik® is vital—be it hate mail or strategy, comment or exposition. Let us know what you think. We can't guarantee that we'll answer every letter, but we'll answer the best of them right here in the Letters column. Send letters to:

JoyStik® Editors
3841 W. Oakton St.
Skokie, IL 60076

NEW WAVES



Prostick 2002

THE PROSTICK

Newport Controls introduces Prostick 2002, a direct replacement for TI 99:4 and 99:4A Home Computers, with an interface unit included. The joystick is equipped with four-way and eight-way switchable controls and two fire buttons. Suggested retail price is \$29.95.

MOVE OVER, MICKEY

The irrepressible Pac-Man and Ms. Pac-Man characters have found time for another product spin-off. Pac-Man Watch Sales of Florida has introduced watches and clocks featuring fully animated graphics in the same color schemes as the video games themselves. The minute and second hands traditionally found on timepieces have been replaced with gobbling jaws, guiping down the ghosts and power pills scattered about the dial. The products are marketed in the U.S. by Executive Sales Associates.

SCORING

Finally, from an outfit in New Jersey comes a solution to the pesky problem of keeping track of all those high scores you amass in the arcades and at home. The Video Gamesman Scorebooks come in two sizes, one designed to fit in your pocket and the other to sit on a coffee table, in close proximity to your game console. Besides allocating spots for your scores, Dad's scores and Mom's scores, the home version also includes a set of Video Game Wiz Kid of the Week certificates. Information is available from Video Gamesman, P.O. Box 9120, Morristown, NJ 07960.



Video luggage

VIDEO TO GO

Pack up your troubles, and your Atari 5200, and head for places unknown with the new carrying case designed by Southern Case, Inc. of Raleigh, NC. The storage and travel unit holds a console, nine game cartridges, AC power adapter, and a TV switch box and is the size of a portable typewriter. Suggested retail price is \$29.95.

Southern Case also has models to hold Atari 2600, Hewlett Packard, Timex/Sinclair, Commodore 64 and Commodore VIC-20 systems.

BASEBALL VIDEO

A line drive single and another run scores. The crowd cheers. It's Champion Baseball from SEGA Electronics, and it's as American as—Japan?

Thousands upon thousands of these arcade games have been shipped to Japan, and it was this phenomenal success of the American pastime overseas that led to SEGA's decision to market the game at home as well.

SEGA claims their Champion Baseball game "has created nationwide excitement not seen since the Space Invaders craze of several years ago."

The game can be played by one or two players, and features isolated close-ups, pinch hitters and relief pitchers. Players will be able to do everything that happens in a real baseball game. Is there a free agent button?

Q*BERTOONS

The unique Q*bert character has leaped out of the arcades and into Saturday morning children's television. The Ruby Spears-produced series, "Saturday Supercade," airs on CBS. Starring in the series are Mylstar Electronic's Q*bert and a gaggle of friends including Q*ball (voted most likely to create trouble), Q*tee (the star's honey), Q*bit (his little brother), and the totally awesome Q*val. The show runs on Saturdays at 8:30 a.m. EST.

INTRODUCING MYLSTAR

D. Gottlieb & Co., the coin-op manufacturer who brought you Q*bert, has changed its name to Mylstar Electronics, Inc. According to the company's president, Boyd M. Browne, the name change reflects "plans to grow in the coin-operated field as well as . . . other high-technology segments of the entertainment industry."

ATARI UNVEILS ARABIAN

Taking you back in time is Atari's latest adventure coin-op video game: Arabian.

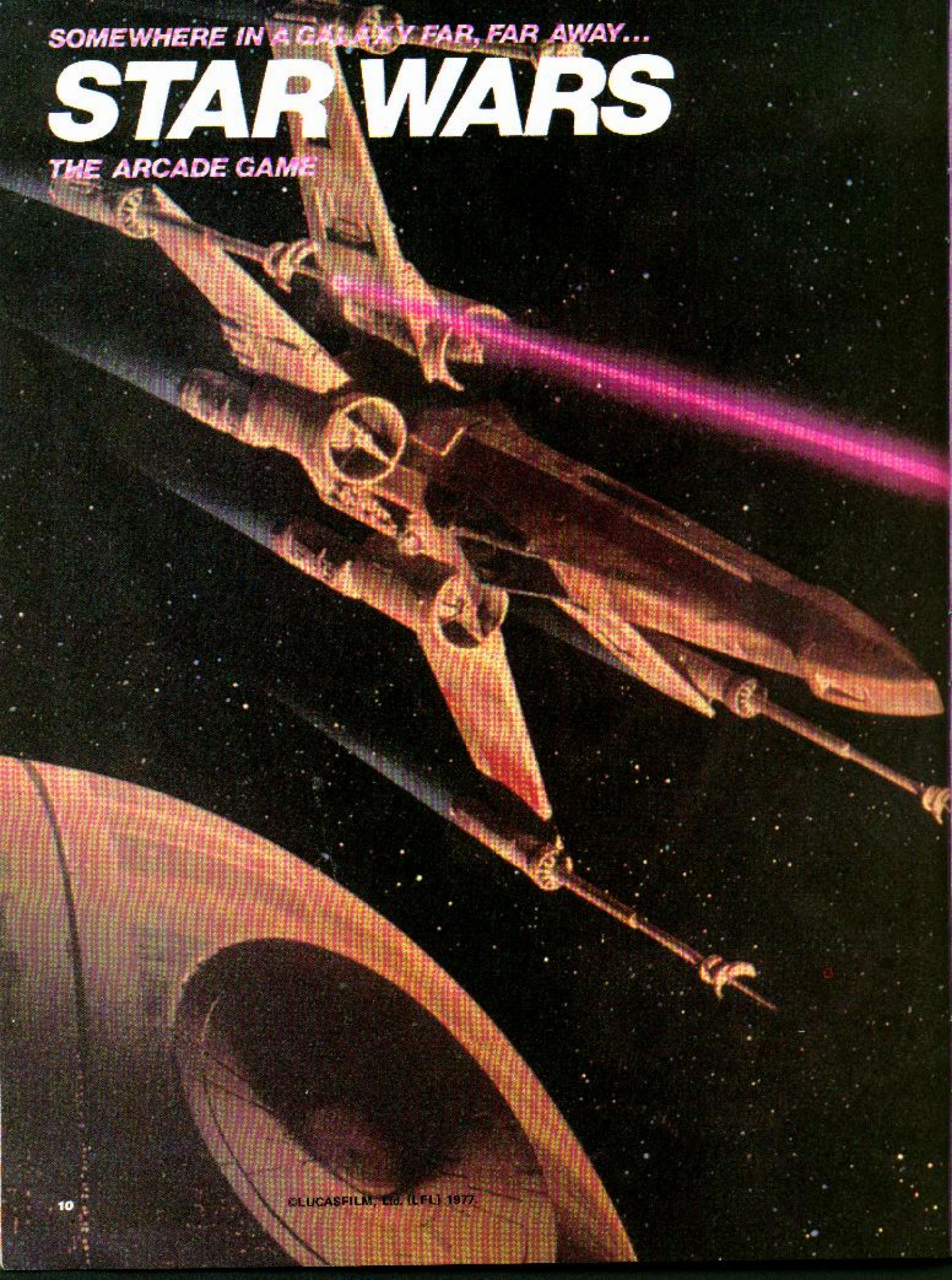
You take on the role of a prince, who must complete four different levels (or "pages," as Atari calls them), each offering different challenges. Your goal: to rescue the lovely princess held captive in a castle tower.


On page one, you must climb to the crow's nest at the top of a ship. On page two, you're on the shore, and must crawl through a cave. On page three, you're at the gates of the castle and get to the top via flying carpets. On page four, your final level, the princess calls to you from her lonely perch. Flying carpets and ropes are your devices for getting to her. All levels feature dandy opponents: Roc Birds dive at you, Oscars chase you, and Genies throw snowballs (snowballs?) at you. You are awarded bonus points for collecting brass jugs spelling out the word ARABIAN.

SOMEWHERE IN A GALAXY FAR, FAR AWAY...

STAR WARS

THE ARCADE GAME





You're flying through deep space in your X-wing fighter, in pursuit of the dreaded Death Star...

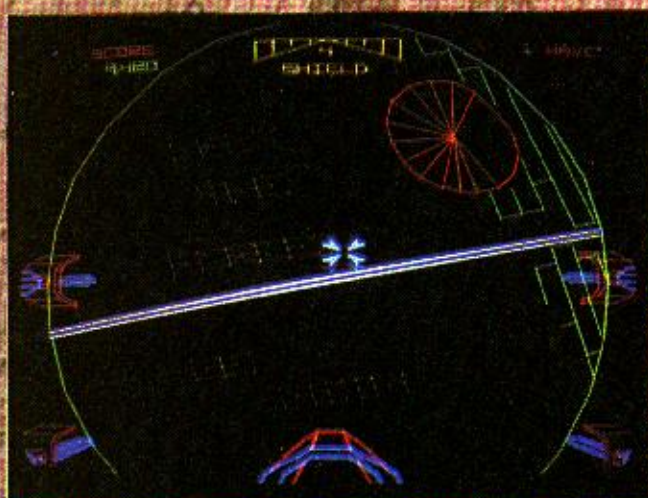
Suddenly you notice a small object on your scanner. Tumbling end-over-end, it grows larger and clearer as it approaches. Then—in the same instant that you recognize it as an Imperial Tie Fighter—a volley of multi-colored fireballs pours from its center gun, headed straight for your ship. Lining up your laser crosshairs with the first fireball, you quickly and methodically begin firing, following their trajectory back to the source so that your last shot breaks the Tie Fighter into two crumpled wings that spin away as you pass between them.

The debris clears, and your destination, the Death Star, is moving slowly across the scanner. Pulling up on the controls, you hear a strangely familiar voice—your own—break the silence.

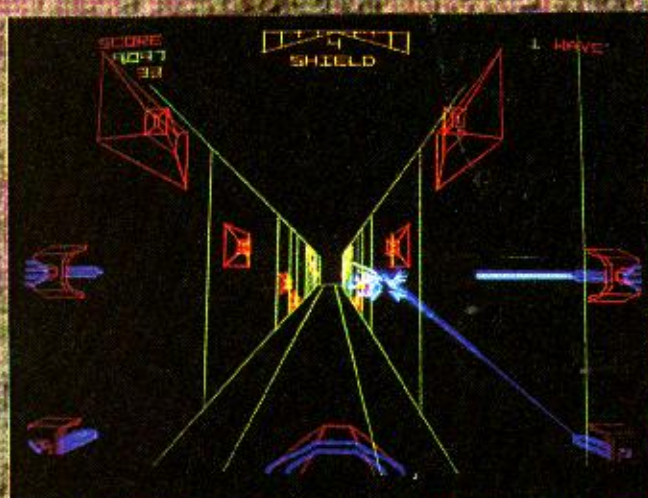
"Hold on tight; we're going in."



Battling Wave 1 Tie Fighters in deep space.



A side-up view of the Death Star, while "going in."



Watch for the reactor's exhaust port in the trench.

It's interesting to compare Atari's *Star Wars* to Sega's *Star Trek*. Both games are based on famous space-adventure

You start the game with six shield units. One shield unit is lost each time you run into some thing (e.g., Tie Fighters, fireballs, Darth Vader's ship, etc.). When all of your shield units have

movies. Both games feature true three-dimensional perspective and eight-color vector graphics. But there the similarities end. Sega tried to produce a strategy game, with multiple screens and subtle interplay between game elements; Atari, on the other hand, went for pure entertainment, from Obi-

Wan Kenobi's "use the force, Luke" to the spectacular explosion of the Death Star. *Star Wars*'s non-stop action and fun

You play the part of Luke Skywalker at the controls of an X-wing fighter. The screen represents a view forward from your ship, and two handgrip controls are used to move a crosshair around the screen. (Note that the controls don't actually determine your path through space—they just position your crosshairs.) Squeeze triggers on either handle fire a laser blast through the position of the crosshairs, so opponents are destroyed by positioning the crosshairs over them and squeezing the trigger.

been lost, the game is over. You can tell when you lose a shield unit by a white flash that lightens everything on the screen momentarily.

There are three areas across the top of the screen that show you what is going on in the game. The leftmost area displays your score, the center area tells how many shield units you have left, and the rightmost area tells which wave you are currently on. Also, just below your score, the value of the last object to be destroyed is displayed. At the start of the game, you'll find yourself flying

through space battling Tie Fighters. Tie Fighters can shoot fireballs at you, but you can destroy the fireballs with your laser guns. It is best, however, to try to destroy Tie Fighters while they are still small and far away. Before they get a chance to shoot fireballs.

After you have battled the Tie Fighters for a certain length of time, the Death Star will appear. It is a large yellow disc with a white band (the trench) through the center and a small red circle on one

side. A voice will warn that you're "going in," and then your X-wing will dive down to the surface of the Death Star.

On wave 1, your ship immediately appears in the trench after diving to the Death Star. (On higher waves, you must first fly across the surface of the Death Star, as described below.) It is impossible to run into the walls or the

floor of the trench, but you must battle fireballs (fired from square targets on the walls) until you reach the exhaust port. The exhaust port is your most important target in the trench, because you must hit it—thereby destroying the Death Star—before you can return to space to battle the next wave of Tie Fighters.

Along the walls of the trench, there are two types of targets: green squares and red squares. Green squares are harmless, but red squares shoot fireballs at your ship. Like the Tie Fighters, red squares should be destroyed as soon as you spot them, before they begin shooting fireballs.

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Wave 2 Tie Fighters, with the Death Star in the distance.



Destroying a bunker on the surface of the Death Star.



Approaching the exhaust port. Note the green targets ahead.



Destroy Wave 3 Tie Fighters as quickly as possible.



Watch for the Death Star, but don't let it distract you.



Stop the fireballs early, and you won't have this problem.

your guns through the exhaust port: push the controls full forward, center the crosshairs, and fire rapidly. If for some reason you miss the port, your ship will hit the wall directly behind it, costing you one shield unit. You will then be returned to the beginning of the trench to try again.

When the Death Star has been destroyed, a wave has been cleared and you will reappear in space, facing the next wave of Tie Fighters. Bonus points are awarded for the destruction of the Death Star, and 5000 points are awarded for each remaining shield unit. You will also receive one extra shield unit, providing that the maximum of six is not already in storage. (The maximum number of shields can be adjusted by the operator from 1 to 9, but 6 is the factory setting.)

Wave 2 Tie Fighters are more aggressive than those in wave 1; there are more of them, and they shoot more fireballs. After coming in from space in wave 2, you must skim the surface of the Death Star, shooting red bunkers. These bunkers will also shoot fireballs, so shoot them as soon as possible. After the bunkers comes the trench scene, and then every wave after wave 2 will have this same Space/Bunkers/Trench progression.

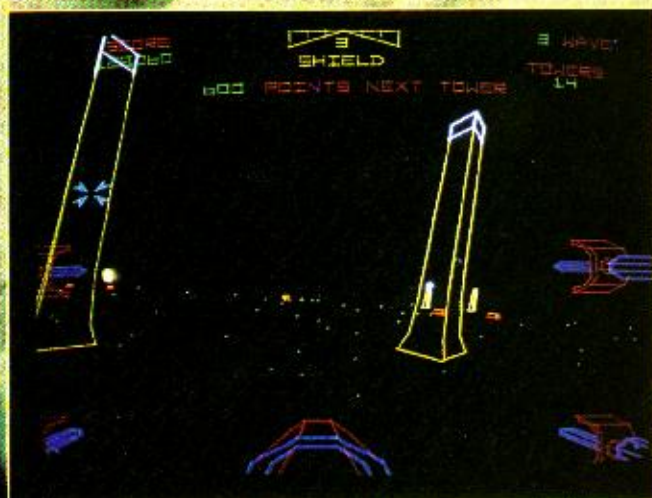
Once in the wave 2 trench, you'll notice another change. There are now catwalks across the top and bottom of the trench. You can—and must—fly under the top catwalks, and you must pull back up on the con-

trols to pass over the lower ones. Hitting a catwalk costs you one shield unit, and although sometimes you can crash through two catwalks in quick succession and only lose one shield, it's still better to weave up and down to avoid them.

In wave 3, the Tie Fighters tend to fire long, continuous streams of shots. If necessary, ignore trying to shoot the fighters and concentrate instead on shooting their fireballs. This will protect your shields, although you'll score much lower than if you shoot the Tie Fighters.

Beginning with wave 3, there are tall yellow towers with white tops among the bunkers on the surface of the Death Star. A 50,000 point bonus is awarded if you can shoot all of the white tops off the towers, so the tops of the towers are worthwhile targets. Shooting at the tops of the towers takes you above the level of the bunkers, however, so be careful of fireballs.

An important point to remember here is that before reaching the trench you will pass through the same set of towers several times. Therefore, you can blow the tops off a few towers each time through, remember which ones you missed, and plan on hitting some of those the next time around. Your ship will begin moving faster as it approaches the trench, so try to get as many tower tops as possible on the first few passes, while it is still a relatively easy thing to do.



Low towers on the surface of the Wave 3 Death Star.



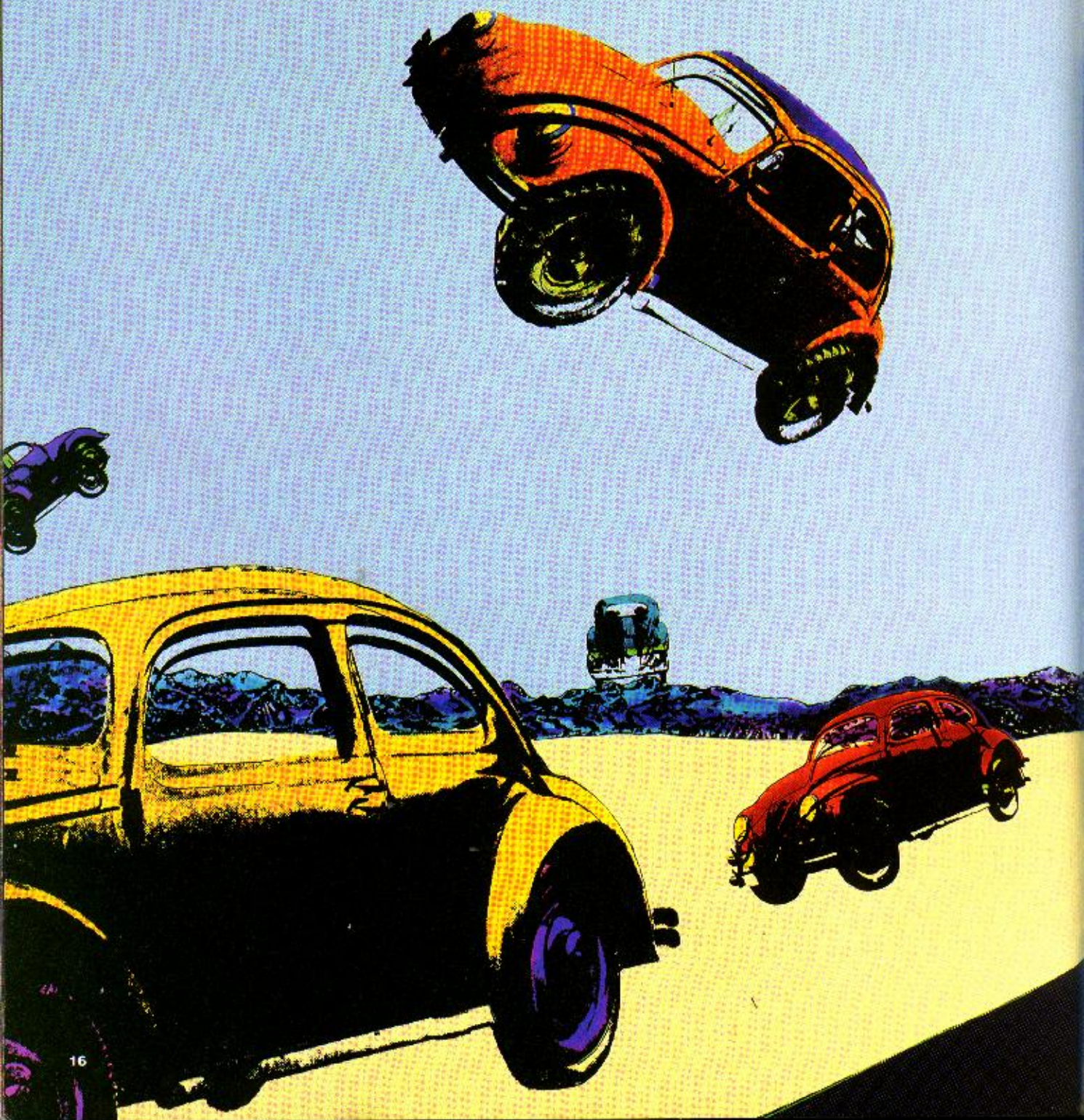
Pay close attention to which towers have been hit already.



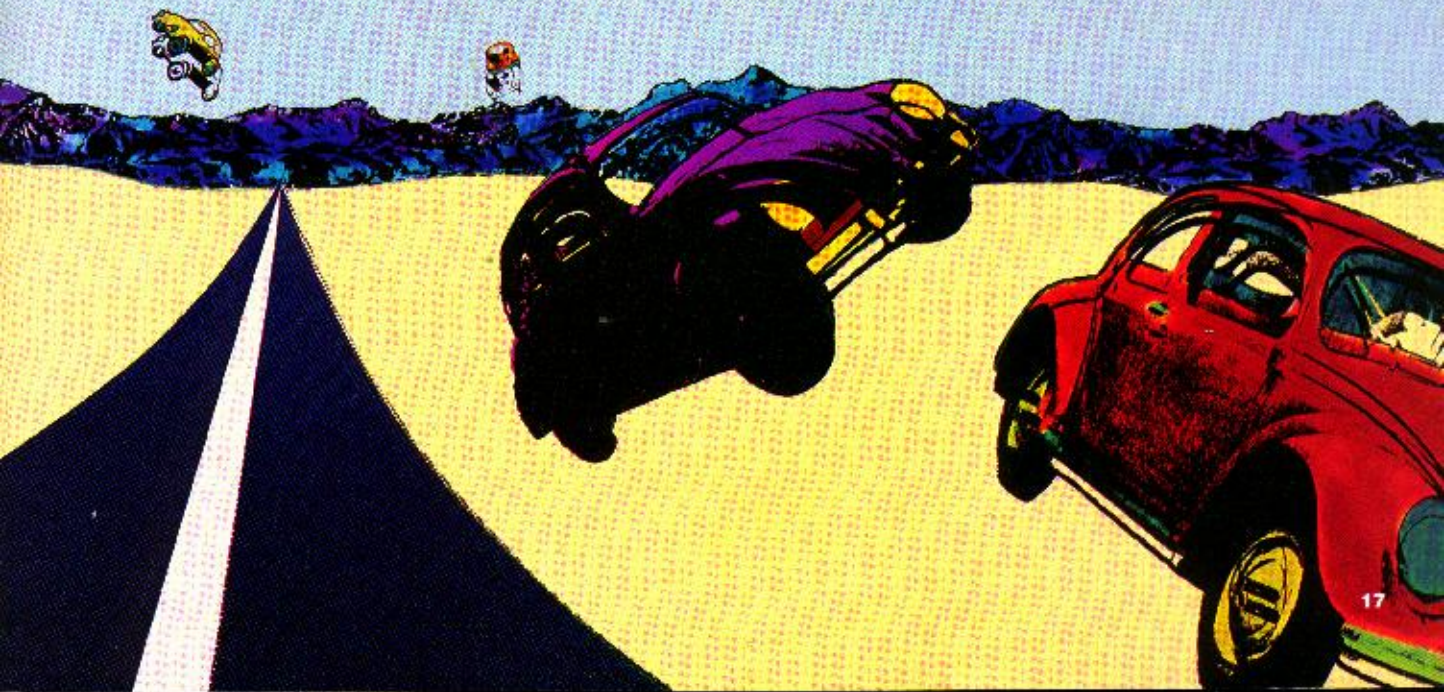
Firing low protects you from the bunkers' fireballs.

BUMP 'N' JUMP

by Mike Ternasky



Bump 'N' Jump is a new car racing game, similar to Monaco Grand Prix and Turbo, in that a changing terrain scrolls down the screen, and the car moves vertically across it. Unlike Monaco and Turbo the car is controlled by an eight-direction joystick, which eliminates the need for a gas pedal. Bump 'N' Jump's car has two added abilities, it can "bump," and it can "jump." The purpose of the game is not to try and go as far as you can in a given amount of time, but to try to complete as many courses as possible. There are 32 courses to master. Unlike other racing games, Bump 'N' Jump is started with five extra cars. An additional car is awarded every 30,000 points.



BUMPING

Finally there is a racing game with a car that can hold its own with the other cars in the race. You can bang into other cars. Better than that, you can even smash them off the road for extra points. The first impulse when you find that your car has this ability is to try and smash every car you can. This, however, can be very dangerous because both cars in a collision lose control for a second. Beware! The other cars can and will smash you into the rocks or water if they have the chance.

JUMPING

What do you do when your car is surrounded by other racers who are about to smash you into the wall? You "jump." Jumping is achieved by simply pressing the jump button next to the joystick. Your car must be traveling 100 mph to jump. The jump itself is proportional to the speed you are traveling which makes speed an important factor in the game play. Luckily there is a speedometer on the top right-hand portion of the screen with a flashing sign that says, "Jump OK" if you are traveling 100 mph or faster. Jumping is necessary to clear waterways in the road and is helpful in avoiding other cars, so it is important to keep your speed over 100 mph.

OPPONENTS

There are a variety of other cars in the race and all are out to get you. The most dangerous opponent is the dump truck. The truck can go faster than your car and dump deadly rocks in your path. You must either avoid or jump these rocks. Deathmobiles are the second most dangerous foe on the course. They are black cars with skulls and crossbones on them. They are as fast as you and are intelligent too. Watch out because they will try to gang up on you. Blue cars are also as fast as you but they are not as smart as the Deathmobiles. Yellow and green cars are slower than you and are easily bumped off the road. They are your easiest foe. Although tanks are in this race, they are very slow and not particularly dangerous. Tanks can rarely be bumped off the road due to their weight, so avoid bumping them.

COURSE

The course itself will cause you more trouble than the other cars because of its jagged rocks, narrow bridges and long waterways. The rocks form difficult terrain through which you must maneuver your car. These rocky sections of the course are where bumping can be hazardous so try to avoid bumping other cars if possible.



If there is water on your left and right, you're on a bridge.

Bridges are half as wide as normal roadways and appear suddenly so be ready to swerve or jump if necessary. You know you are on a bridge if you can see water to your left or to your right. Bridges are hazardous because maneuverability is limited and waterways are common.



Water jumps have a narrow bridge on the left and islands in the middle.

Waterways are areas of the road which are washed over by water. To traverse a waterway, you must jump over it successfully. When you are approaching a waterway, a yellow exclamation point appears to warn you of a coming jump. There are two types of waterways. The first is a washed out roadway.

These water jumps have a narrow bridge on the left-hand side and islands in the middle. Always go left on these jumps and land on the bridge. The bridge is only one or two car lengths so jump off it as soon as you see the end of the waterway. The length of these jumps vary so learn to recognize the rectangular island which will always appear before the end of the waterway. The other islands are large and square but the rectangular island is much smaller. When you see this island it is safe to jump off the bridge because the waterway will end.



A washed out bridge jump is more difficult than a road jump.

The other type of waterway is a washed out bridge. These bridge jumps are more difficult than the road jumps because there is no bridge on the left or scattered islands in the water. To successfully cross these hazards you must jump after you see the exclamation point while having sufficient speed.



STRATEGY

The key to playing Bump 'N' Jump is not to kill a single enemy car for an entire set. If you successfully complete a set without smashing another car you will be awarded a 50,000-point bonus. This sounds easy but it can be very difficult. In fact you may have to kill yourself to keep from landing on or smashing another car. It is worth killing your own car for the points because you will be awarded a bonus car for every 30,000 points you receive.

A rock barrier will separate the road in certain areas after level 3. Always go to the left, just as you would on a jump from the rocky roadway. If you are in trouble on a rock set, jump; and if it is not possible to jump, simply pull back on the joystick until you come to a complete stop. Your enemies, with the exception of the tanks, will drive past you. You must regain your speed before you can jump, so only use this as a last resort.



Rock funnels appear before a jump from a rocky roadway.

Rock trucks can be used to your advantage if you learn to watch them until they are about to drop their rocks. Simply wait behind them until the last possible second (this will draw the other enemy cars closer) then jump. Usually the other cars will run into the rocks and die. Be careful when driving next to dump trucks because all you must do to smash one is touch it. This can ruin a 50,000 point run very quickly.

Learn to recognize your signals, such as the sound the exclamation point makes and the rock funnel your car will go through before a jump from a rocky roadway. The funnel is always the signal of a jump. Whether you're on the ground or in the air move left when you see it. Listening for the high beep made by the exclamation point allows you to tell when a jump is coming without making you look up at the exclamation point and take your eyes off the road.

If you accidentally or purposely kill a car, continue killing them because you will be given bonus points for each car killed. When smashing a car, you will travel opposite the direction of the collision. Try not to hit cars in front of you because you will go backwards and lose speed. It is best to wait until you are in front of the car, then slow down and hit it. You will

regain the speed you lost from slowing down when you bounce off the other car. If you are in a collision and lose control, jump to regain it. If you are landing on a car it is best to jump again when you hit it to keep from losing control.

Try to learn the courses. Each time you complete a course try to remember it. If you die in a certain area remember it so you don't make the same mistake again. Luckily you can start a game from the point you finished if you put another quarter in fast enough. This will help you memorize a course you always die on.

To use the following strategies you must be able to complete the first three levels easily.

Although the first three levels are fairly simple, here are some tips that may help your score. Level 1 has only short jumps and dump trucks will not drop rocks. Therefore you need only wait until you see the water before jumping. Then stay in the middle of the screen until you clear the jump. You will only see one island on these jumps. This is the island which appears before the end of a jump from land in later sets. When you are on the narrow bridge and spot this island it is always safe to jump and move to the center of the screen.




On a narrow bridge, jump and move to the center of the screen.

Level 2 has two long jumps from land. Make sure to recognize the rock funnel before the long jumps then move left to the bridge. When you see the rectangular island, jump from the bridge back to the road. The bridge jumps in this level are short.



When you see the rock funnel, move left to the bridge.

Level 3 will introduce you to a split, which is simply a part of the road where the rocks cut it into two segments. The portion of the road on the left is narrow almost like the bridge from a land jump. The right-hand side of the road is half as wide as the normal road, which is about the same width as a normal bridge over water. The easiest



way to traverse these splits is to simply jump and land on the narrow lane to the left. Follow this lane until you see the end of the split and then jump again.

Level 4 is where the real strategy to mastering the game comes in. The first three levels are unique, meaning you will not see them for the rest of the game. After level 3, a pattern of five repeating patterns begins. If the important characteristics of these patterns are learned the game is easily mastered. In other words, if you learn patterns for levels 4, 5, 6, 7 and 8; you have learned the patterns for the rest of the game, as they keep repeating in order.

The screen changes color depending upon the season. The seasons are not important with the exception of summer. In the summer, the dump trucks usually will not drop rocks. Level 4 is a summer set so remember you can drive behind the dump trucks as much as you like.



Beware the Deathmobiles.

There are four kinds of jumps in these levels. Jumps one and two are short and long jumps from a rocky roadway. The short jump has only the rectangular island and can be cleared without using the narrow bridge to the left. The long jumps from the rocky roadways differ in length and have many square islands. You must use the bridge to the left on these jumps. These two jumps henceforth will be referred to as roadway jumps short and



A short jump has only the middle island. long. The other two jumps are from normal bridges. There is a short jump which can be cleared very easily. The long bridge jump is a little more difficult due to its length. To clear this jump you must be traveling 180 mph and jump at the last possible second. It is best to try to have your speed at 220 mph when approaching these jumps so you won't have to wait until the last second to jump.



A rock funnel in the summertime.

Level 4 is the easiest of the five repeating patterns. It begins with a split, then a long roadway jump, another split and another long roadway jump. Then you will come to a bridge. Do not jump once you are on this bridge because a short bridge jump is coming soon. When you hear the exclamation point, jump, and be prepared to jump again soon. The short segment of bridge you will land on is not long enough for you to jump and land on again. This type of jumping with only a short interval in between is called a double-jump because of the two consecutive jumps. After the double-jump, you can relax while you drive on a bridge for a short while. It is safe to jump here if necessary. When you leave the bridge, jump and go left because a split is approaching. Stay on the left side of the split until you are near the end, then jump. You will fly over a rock funnel and land at the entrance of a short roadway jump. Jump again and stay in the middle of the screen.


When you land do not jump because there is a long bridge jump approaching. It is important to be in the center of the road so you do not get killed when the road becomes a bridge. Gain speed and wait until the last possible second before jumping. The screen will speed up if you make this jump: do not panic or think the set is over because there will be a short bridge jump right after the long one. This is called a long-short double-jump.



When you leave the bridge, jump and move left.

Level 5 is almost identical to level 4 except that after the second long roadway jump you will come directly into a rock funnel. This funnel leads into a very short roadway jump. The rest of the course is identical to level 4.

Level 6 is unique. Forget all previous rules when learning this course. Just learn it and remember it. It is not that difficult, but it is much different than the other courses. The course will begin with a rocky roadway, then open up to a full road. Do not be fooled because



you are driving on a complete road, because double-short roadway jumps are approaching.



The rocky road gives way to open driving.

You will notice that neither of these jumps has the rock funnel possessed by all the other roadway jumps in the game, and the second doesn't even have the rectangular island. Just as you complete these two jumps prepare for a long roadway jump without a funnel. A short distance after this jump, another short roadway jump appears. This one has a rock funnel but ends in a roadway split. If you are on the left side (as you should be), this will be no trouble for you. You will drive through more rocky roadway before coming to a bridge. It is safe to jump at the beginning of this bridge if necessary, but do not jump once you have been on it for a few seconds because a short bridge jump is approaching. Again you will drive through some rocky roadway until you approach another long roadway jump without

a rock funnel. It is important to jump off the narrow bridge on the left side as soon as you see the rectangular island because at the end of this jump is a short bridge with a short bridge jump at the end of it. After the short bridge jump you will approach a rock funnel which leads into a short roadway jump. Soon after this jump, you will come to the only rock funnel in the game that does not lead to a roadway jump. Instead, it simply funnels into a bridge. The rest of the course is roadway until you come to the final jump. This is another short roadway jump without a rock funnel.



On Level 6, this rock funnel leads to a bridge.

Level 7 starts out with a double-bridge jump, so don't jump at the beginning until you see the water; then wait until you see the water again. There is one long roadway jump a short distance after the double-jump. This jump ends on a bridge, so be sure to jump off the narrow bridge on the left when you see the rectangular

island. This bridge does not lead into a jump, so it is safe to jump if necessary. The course will cross one other short bridge which does not lead to a jump. It will be to your advantage to notice when you cross this bridge because the next one has a triple-short bridge jump. It is identical to the double-jump series on levels 4 and 5, except it has one more segment. This is followed by a long stretch of rocky roadway with many splits. Often you will jump out of a split and see another. Attempt to land on the left-hand side of the next split if possible. The last jump of this set is a short roadway jump.

Level 8 is difficult, but if you can consistently complete it you will have mastered the game. The course starts out with a rocky roadway leading to a standard long roadway jump. After this jump, the course will go through a series of splits. Try not to jump unless it is necessary because you will need your speed for the upcoming jumps. After the third split, the road will come to a bridge which leads to a long bridge jump. This jump is difficult because you have to land on a small island. To reach the island you must be traveling 180 mph and jump at the last second. If you are traveling 200 mph or more, you must jump about two car lengths before the end of the



Prepare to jump.

bridge. After landing on the bridge, you must jump immediately or you will crash. You will then land on a bridge which leads quickly into a long bridge jump. This one is standard but difficult, because you don't have much time to bring your speed back up to 180 mph before jumping.

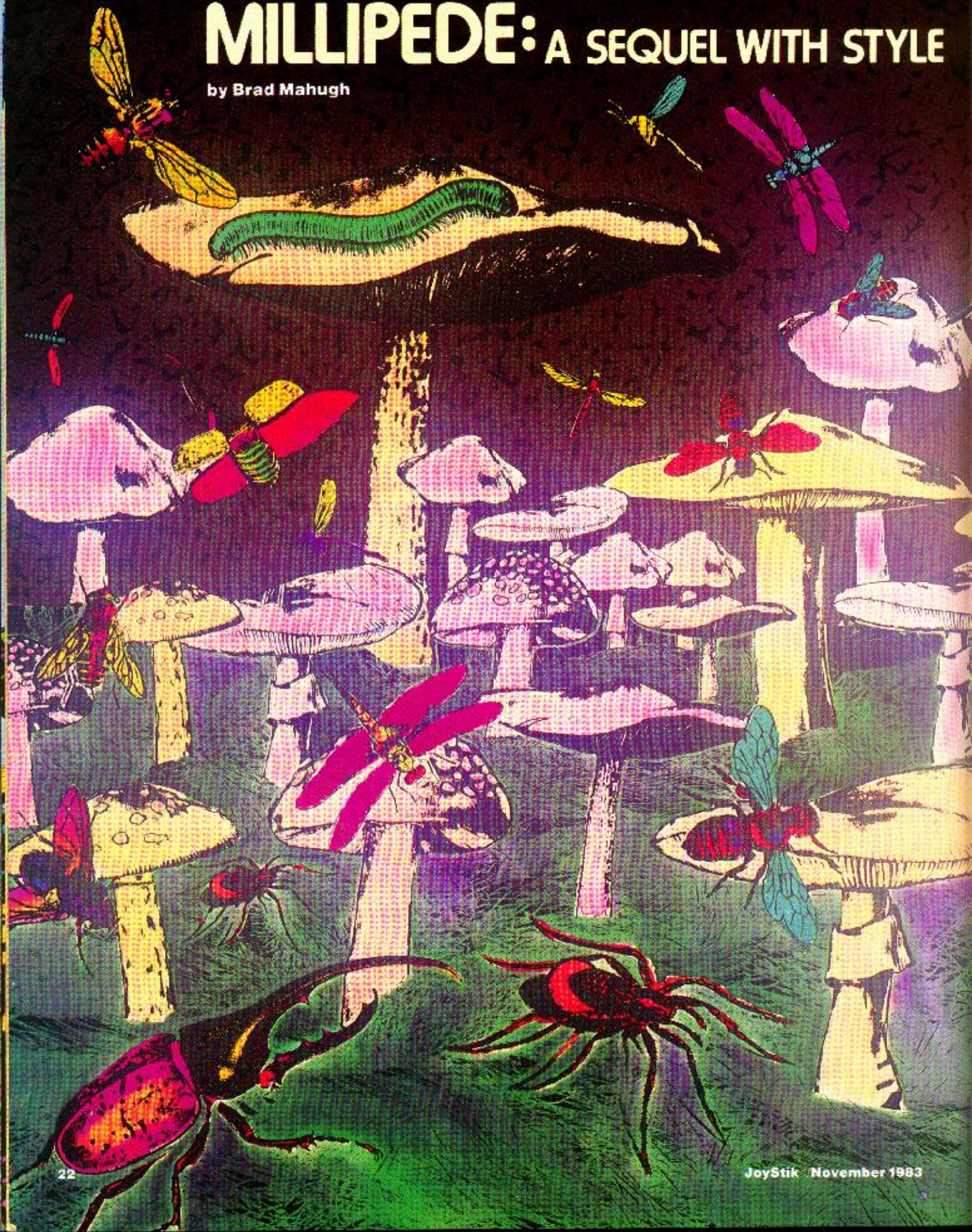
The rest of the course is comprised of rocky roadway with many splits. The course ends with a short roadway jump.



The close of a winter scene.

MILLIPEDE: A SEQUEL WITH STYLE

by Brad Mahugh





In the near-beginning, Atari created Centipede, and it was good. Now they've made Millipede, and it's even better than the original—a rarity among coin-op game sequels. Millipede has retained the 12-part creature and the mushroom forest setting, and for beginning players much of what worked in Centipede works here. But Millipede is much more than a flashier version of Centipede.

Yes, that creature with 12 heads looks familiar, but what's this? A beetle crawling across the bottom of the screen? A kamikaze dragonfly? A bee wave?

You need only to watch Millipede a few seconds to see that comparisons to Centipede are limited. Millipede extends far beyond the humble domain of spiders, fleas, scorpions, and centipede segments (the elements of Centipede) into new territory. Beetles, mosquitoes, dragonflies,

bees, inchworms, and earwigs have been added to the game, and each of these new opponents has its own peculiar behavior.

In addition to the new insect competition, Millipede has some interesting strategical changes. DDT bombs, when detonated, exterminate all opponents within range of their toxic fumes. And the once-stationary mushroom field drops one row whenever a beetle is hit, and rises one row whenever you shoot a mosquito.

CONTROLS

The original Centipede track ball and fire button have remained intact. The track ball allows you to move your archer (shooter) anywhere within the bottom six rows of the screen, and the fire button can be used for single-shot fire or held down for automatic repeat (a new shot comes out when the previous shot hits something).



Beware of Bees—they're fast when they're mad.

BEEES

These little hummers exist mostly as a means to fill the screen with mushrooms and are similar to the fleas in Centipede. They drop straight

down from the top of the screen and leave a line of mushrooms behind them.

You shouldn't have much problem with bees by themselves. Make sure you are directly underneath when you wish to shoot and calmly fire at least two shots up at the approaching bee. The first shot only makes him angry—and angry bees speed up—so be careful not to move in between shots.



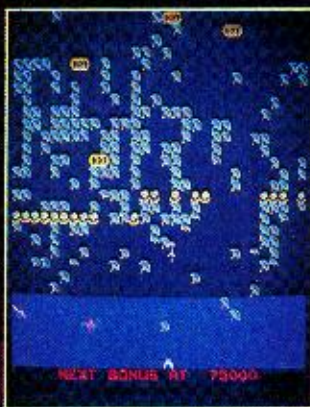
Shoot spiders during breaks in the action.

SPIDERS

These treacherous arachnids are not much different from the ones found in Centipede, except that after you reach 30,000 points you will

have to contend with more than one on the screen at a time. They come onto the screen from either side and bounce across the bottom to exit on the opposite side. Spiders are worth from 300 to 1200 points, depending upon how close you are when you shoot one.

In later waves, as many as eight spiders can be on the screen at once. A good place to be when this occurs is near the bottom of the screen in the space between "S" and "A" in the "NEXT BONUS AT..." message. If you stay near this spot, the spiders are fairly easy to avoid.



The best place to be when hunting Spiders.

BETLES

Beetles are worth 300 points, but that isn't much compared to the trouble you could take trying to shoot them. A beetle's path is basically to come out of the side of the screen about one-fifth of the way up from the bottom, descend to the bottom row, travel across the bottom of the screen, ascend to the row in which he appeared, and exit on the opposite side of the screen.

Since a beetle spends a fair amount of time in the bottom row, it isn't often you have an opportunity to shoot him. If you don't know this about beetles already, you'll want to find out right now: they never travel the full width of the screen in the bottom row. There are three ways to handle a beetle: jump him while he's in the bottom row, shoot him when he moves up, or (if you're quick) you can shoot him when he appears from the side.

A tempting reason to shoot the beetle is that when he runs across a mushroom he coats it with his shielding slime, making the mushroom



invincible to your shots. Let him have the mushrooms. As a rule, avoid beetles—they're more trouble than they're worth.



A clear lower screen during a Mosquito Bombing Wave.

MOSQUITOES

If you heed the wisdom of avoiding beetles, then you'll want to become proficient at shooting mosquitoes. Mosquitoes look like little darts and ricochet off the sides of the screen at about 45 degree angles. Each one that you shoot raises the mushroom field one row.

After you have successfully completed your first mosquito bombing wave (you must learn to master bees and dragonflies since those

waves come first), you will notice that the mushrooms that were at the bottom of the screen have been lifted up many rows. This leaves the bottom portion of the screen clear of mushrooms. As soon as the next millipede enters, bees will be busy dropping mushrooms to fill up the screen. Until the bees catch up with you, you'll have an open field to work in.



Dragonflies are worthwhile targets almost any time.

DRAGONFLIES

Dragonflies are tricky to learn how to shoot. They do not follow a straight line down the screen (like bees), so you'll need to be attentive when you reach a dragonfly wave. Get to the side and watch

for how wide they swerve back and forth. Position yourself in the middle, directly beneath them, adjust your aim, and fire. Dragonflies, like bees, leave mushrooms in their paths. Another good reason to shoot dragonflies is the fact they're worth 500 points apiece. And, unlike earwigs and DDT bombs (which are worth more), it's a lot easier to decide when you want to shoot one.



Can you find the "invisible" Earwig?

EARWIGS

Earwigs are poorly disguised scorpions from Centipede. They are rated at 1000 points and scurry across the top of the playing field, poisoning all mushrooms that they touch. Millipede

players should not concern themselves with trying to shoot earwigs, unless they are an easy shot. Earwigs are the "invisible" bugs, because normally by the time they start to appear, you're so busy watching the bottom of the screen you don't even see them.

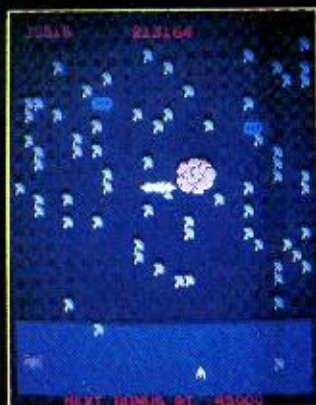


The lowly inchworm can slow the pace down.

INCHWORMS

The Millipede inchworm has one thing in common with his earthly prototype, he's forever underappreciated. At 100 points, the inchworm doesn't affect your score much, but when hit, he slows the action down for three seconds, while you clear mushrooms and remove any insects that are close by.





Anticipate the Millipede's motion when using DDT.

DDT BOMBS

DDT bombs appear randomly in the mushroom field and scroll up and down the screen with the surrounding mushrooms. Shooting a DDT bomb will detonate it, and the resulting cloud of smoke destroys everything it touches. Opponents destroyed in this manner are worth three times their normal value.

Unfortunately, it's rather hard to find a DDT bomb at the bottom of the screen—where you need them most—because most DDT bombs are accidentally detonated by stray shots long before they scroll to the bottom of the screen. When one does make its way to the bottom of the

screen, it serves well if you can use it. DDT bombs come in handy later in the game, when you need to clear mushrooms from the bottom and don't have time to shoot them all before being overcome by other creatures.

Another good time to use a DDT bomb is just after finishing a mosquito bombing wave, when the mushroom field is scrolling down. (Normally the mushrooms drop one row after each wave, but after the mosquito bombing wave—which raises the field considerably—the mushrooms begin to scroll down row after row.) Detonating a DDT bomb will stop the downward scrolling.



Shooting DDT will save this wide-open playfield.

MUSHROOM FIELD

The most important difference between Millipede and Centipede is that Millipede's mushroom field never stays in the same shape for long. In Centipede you could set up a channel or a trap in the mushrooms to guide centipede segments into your line of fire, but in Millipede the entire mushroom field is replanted every 12 waves.



The Mushroom Field regenerating after Wave 3.

After the field of blue mushrooms (the third wave of each set of 12), the mushroom field is regenerated. Although the change appears to be random, the mushrooms are actually replaced by a set of simple rules: (1) Any mushroom that is touching fewer than two other mushrooms dies

from underpopulation; (2) Any mushroom that is touching more than three other mushrooms dies from overpopulation; and (3) Any mushroom adjacent to a poisoned mushroom dies.



Bombing Waves can be worth big points.

BOMBING WAVES

After the first three millipede screens, a shower of bees comes pouring down at you. This is the first "bombing wave." Between every two to four millipede waves, a bombing wave appears as an interlude before resuming play on the millipede. On these bombing runs, bees, mosquitoes, and dragonflies can be worth up to 1000 points each, making these treacherous waves potentially very lucrative.



The order of the five bombing waves goes: bees, dragonflies, mosquitoes, dragonflies with bees (and very few mosquitoes), and all three together on the fifth wave. After the fifth bombing wave has been reached, the millipede returns to its wholly intact state and the order repeats.

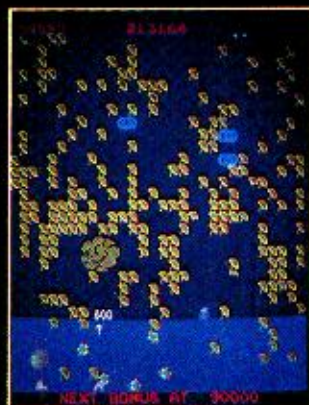
STRATEGY

Some of the techniques used by successful Centipede players will work for Millipede, but many others don't apply. For example, the "clear the bottom, fill the top, do this so more fleas will drop" approach used by many Centipede players will not work in Millipede because the mushroom field itself moves and changes. In fact, none of the Centipede mushroom strategies (building traps, loops, and blocks of mushrooms) works well for Millipede.



Keep the lower six rows clear.

Your first priority throughout the game should be to clear the bottom of mushrooms. This keeps you, the archer, free to move your bow and arrow around the lower fifth of the screen.



The infamous Side Feed—don't let this happen to you.

After mushrooms, the millipede is your next priority. If you let it reach the bottom row and turn around, new millipede heads will begin appearing from the sides, and you won't have much time before the bottom of the screen is filled with them. Always try to completely eliminate the millipede before any segments reach the bottom.



Don't chase Beetles unless you have nothing to do.

It's best to avoid beetles and spiders, unless you have some spare time to deal with them. When they appear at one side, try to move to that side of them as soon as possible, so that they will be moving away from you.

Don't waste your time on beetles, but a spider is usually worth taking a moment to shoot, especially when he's blocking your movement.



Mosquitoes are worth a little effort.

Shooting mosquitoes and avoiding beetles are the two most important objectives in Millipede. The motivation behind these two practices is to keep the level of mushrooms just above your field of movement. If you work to increase upward scrolling (shoot more mosquitoes), and attempt to decrease downward scrolling, the mushrooms will be out of your way and in your line of fire.




THE
WINNING
EDGE

JOUST

TOP-FLIGHT STRATEGIES

by Eric Ginner





In this month's Winning Edge, we'll be looking at Joust, one of the best new games of the last two years. If you haven't played Joust lately, pick up the January 1983 issue of JoyStik[®] and re-read the basic description presented there before trying your hand at this advanced strategy. As in previous articles of the Winning Edge series, our goal is to turn your good game into a great one. Good luck!

Becoming an expert at Joust requires different skills than in most other games. The first step is becoming an ace flyer. After that, you can set up the enemies in the key areas on the screen. Patience is important in Joust. Flying around chasing after the birds is fun, but it's also a sure way to lose quickly. Always set up the enemies in the proper position and wait for them to come to you. It's the safest and most effective way to play longer and get higher scores.

For super fast flying, nothing beats the double flap technique. Instead of pounding on the flap button, use two fingers on the button and alternate pressing the button with each finger very quickly. The timing is difficult to learn, but soon you will be able to fly like a Shadow Lord. The double flap is also good for going down, because the fastest way to go down is to bounce off a ledge or the top of the screen.

Gravity pulls you down too slowly, especially with the Shadow Lords and Pterodactyls on the screen. Reversing directions is also quite slow, so it is better to fly out the sides to change position. Flying wildly around the screen is fun, but most of the time you should stay in the same area and move only if you're about to be jousted.



Always be sure to clear the eggs before they hatch.

EGG WAVES

Wave 5 and every fifth wave after that is an Egg wave. Twelve eggs are randomly placed on the ledges. The best strategy is simply to get all of the eggs right away and advance to the next wave. Waiting for the eggs to hatch will get you more points, but you risk losing a life. The extra time required also makes the Pterodactyl come out. Eventually the eggs will hatch so fast that it's impossible to get them all before the birds pick them up. In that case, just clear off two rows of eggs and move to safe ground. Egg waves always have every ledge on the screen, so play the fast hatching Egg waves like a normal wave with all the ledges.



Pterodactyl wave with the middle ledge.

PTERODACTYL WAVES

On wave 8, then every fifth wave, Pterodactyls appear at the beginning. Only one Pterodactyl appears on early waves, but the maximum of three will appear in later Pterodactyl waves. Avoiding the Pterodactyl and jousting the other warriors is difficult, but it's usually unnecessary. The

early Pterodactyls can be killed from one of two spots. When the middle ledge is present, stand on it before the Pterodactyls come out. The Pterodactyls will appear on the bottom and fly right up into your lance. On some waves, the warriors will come after you before you can hit the Pterodactyls. It's all right to jump up a little to avoid them. The Pterodactyls go to the same place as long as you're standing on the ledge before they come out.



Pterodactyl wave without the middle ledge.

When the middle ledge is missing, stand on the bottom ledge directly above the hundred-thousand digit in the first player's score. You have about an inch of space in which to kill the Pterodactyls. This time, the Pterodactyls enter from the middle and come down to you. While you're standing there, no Buzzards will enter from the bottom ledge. Any Hunters coming down from the right will buzz right over your head and sink into the lava. Once the Pterodactyls are gone, move back to the center and play the wave normally.

NORMAL WAVES

The first 15 waves consist of only Bounders and Hunters. In wave 16 the Shadow Lord makes his first appearance. More Shadow Lords are added each wave until there are only Shadow Lords in every wave. Surviving these waves consistently is the mark of a Joust wizard. Shadow Lords are fast, but they are very predictable. Always try to kill the Hunters before dealing with the Shadow Lords. Fortunately, Shadow Lords take a long time to energize, which gives you a chance to kill the Hunters.

Two different strategies are required after wave 15. The middle ledge is the key. When the ledge is there, stand on the energizing area right under it. When Hunters approach from the side, fly up and kill them. Shadow Lords usually drop down from the side ledges. As long as you're on the ground, they will stay on the ground. When one runs toward you, fly up just before he hits you. You will kill him and also catch his egg in the air. When the middle ledge is not there, play it like a Pterodactyl wave. Stand on the bottom ledge over the first player's score. Hunters coming from the right will drop into the lava. Hunters coming from the left will be caught by the Lava Troll. After the Hunters are gone or trapped, go back to the middle. The basic idea is always the same—let the enemies kill themselves by coming to you rather than chasing after them.



Fly above the lower energizing platform on Shadow Lord waves.

SHADOW LORD WAVES

Wave 37 is the first to consist solely of Shadow Lords. After that, only Egg waves and the waves immediately after the Egg waves have Hunters. After wave 60, every wave is all Shadow Lords. All Shadow Lord waves are actually quite easy because they are so predictable. Again, strategy is determined by the middle ledge. Standing under the middle ledge is no longer advisable; it takes too long to wait for the Shadow Lords to drop down to the bottom. Instead, hover at the top of the screen, directly over the right energizing area. Most of the Lords will appear underneath you and fly straight up. The others will bounce along the top of the screen. You might have to move a little to adjust to their bounces. After they're all gone, quickly go around and collect all of the leftover eggs.

When the middle ledge is missing, hover directly above the bottom energizing area. Hover just high enough to allow the Shadow Lords to appear underneath you. Let them fly up into you and kill themselves. As soon as you see which way they are facing, move over in that direction to make sure they hit you. Always stay below the Shadow Lords on the side ledges. After all of them have come out, drop down to the bottom. When one of the remaining Shadow Lords drops down from the side, hover where the end of the middle ledge would be. He will drop right past you, then come up under you.

TWO-PLAYER STRATEGY

When two play simultaneously, many different strategies are available. Usually, both players team up against the enemies. The best way is to have each player cover his own side of the screen. Use the same strategies as in a one-player game. The only difference is that you have to avoid the other player. Greed doesn't pay off in doubles. Both players going for the same bird or egg usually causes a fatal collision. Always allow the player with fewer lives to get the extra points (on Egg waves for example). This will keep both players playing as long as possible.

The Pterodactyl waves are the same as in a one-player game. Both players should stand on the middle platform. If threatened by an enemy, one can jump up to protect both players. Without the middle ledge, both players should be on the bottom, one on each side. The player on the right should be on the extreme right edge.

On the Hunter and Shadow Lord waves, both players should play the bottom, with one player under each edge of the middle ledge (even when it isn't there). Kill the Hunters first, then get the Shadow Lords. When one player is killing a Shadow Lord, the other player should be standing on the bottom. Otherwise, the Shadow Lord may go after him and kill the first player in doing so. With only Shadow Lords, both players should hover side by side above the bottom energizing area and kill all but the ones standing on the sides and on top. When the middle ledge is there, both players should play the top. One should be directly over the right side energizing area. The other should be between the top middle and top left ledges, or directly over the left energizer.



Killing a Pterodactyl at the end of a wave.

PTERODACTYL HUNTING

Original Joust machines were often victimized by the infamous Pterodactyl hunters. A technique was quickly developed which allowed players with very little skill to play one game forever. You could catch the last enemy in the hand and stand on the middle ledge while the Pterodactyls would rise from the bottom and fly up to you. You could stand there all day and kill Pterodactyls as the last enemy was still stuck in the Lava Troll's grasp. A new chip was quickly provided to correct the problem, but there are still some old chip games in circulation.

With the new chip, mass slaughter of Pterodactyls isn't possible, but hunting single Pterodactyls can still be done. Attacking one from the air is an excellent test of your flying prowess. The best time to go after one is when there are a lot of warriors flying around. You get a slow motion effect, which gives you a better chance to spear the Pterodactyl right in the mouth. An easier way to kill one is to take a cheap shot at the end of a wave. When the Pterodactyl leaves the screen at the end of a wave, he leaves on one of three levels. When he goes off the middle of the screen, you can kill him by standing on one of the side ledges (the lower one on the right side). Another way is to stand on the extreme right edge of the bottom ledge on a wave with the middle platform. When the Pterodactyl comes out from the middle platform let him come to you. Just before he reaches you, flap once and you'll jump up and kill him.

NEO: DRAGON'S LAIR

FEATURING PROVEN STRATEGIES FOR
THE SIXTEEN TOUGHEST SCENES

BY JOE MENOSKY
STRATEGY BY TAD PERRY

It's been a long time since a truly exciting new arcade game has come out. Sure, there have been some good games in the past year, maybe even a great game or two. But a good game isn't necessarily exciting (or vice versa), and not since Joust has there been any real excitement in the arcades.

That is, until Dragon's Lair. Ever since Cinematronics showed a prototype version of the game at last spring's AOE show in Chicago, operators and players have been talking about the exciting possibilities of interactive laser disk games. And as the first application of this revolutionary technology, Dragon's Lair represents a turning point in video game design.

Because of the unique nature of Dragon's Lair's game play, you'll have more success (and more fun) if you understand how the game responds to your moves. On pages 34 and 35, Joe Menosky explains what is happening when you play the game and how this should affect your approach. Then, on pages 36 and 37, Tad Perry provides helpful hints for the 16 most difficult scenes in the game. The easier scenes have been left out, so that you can enjoy the thrill of discovering the solutions yourself.



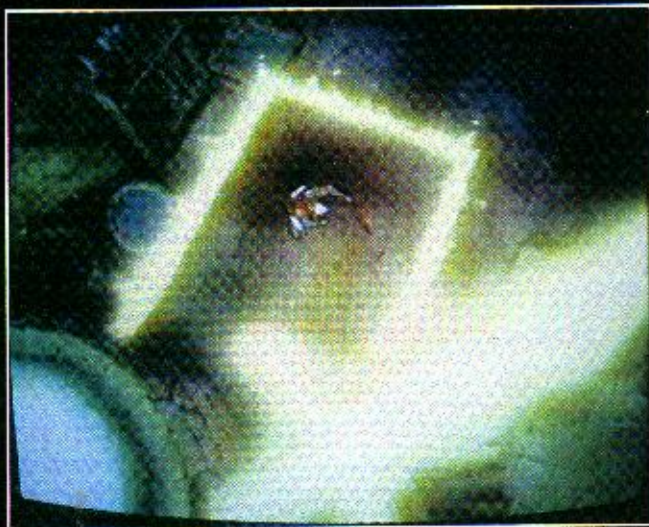
At an arcade in Denver the quarters were lined up all the way across the display and along the floor for ten feet. And with good reason. After all the uninspired reruns we've had to put up with over the past year, Dragon's Lair—the world's first laser disk video game—promises something more.

Dragon's Lair was created by Southern California based Starcom, animated by ex-Disneyite Don Bluth and his group, manufactured and marketed by Cinematronics, and was a full six years in the making. It certainly shows. The incredible visuals and sound effects aren't even half the story. Dragon's Lair forces the player to explore completely new ways of thinking about strategy and play, and the technology behind the game could mean a completely new direction for the arcade. Starcom, Don Bluth, and Cinematronics will be coming out with a second laser disk game (a "superhero outer space adventure") in October, and other manufacturers are scrambling to follow suit. If you've been moping around with the "just-one-more-sequel-game-and-I'll-go-back-to-pinball" blues, then Dragon's Lair and its spawn may be exactly what you need.

The Dragon's Lair story line is nothing to get excited about. A dippy-looking knight, Dirk the Daring, has to make his way through an evil wizard's castle to rescue the lovely Princess Daphne, who is

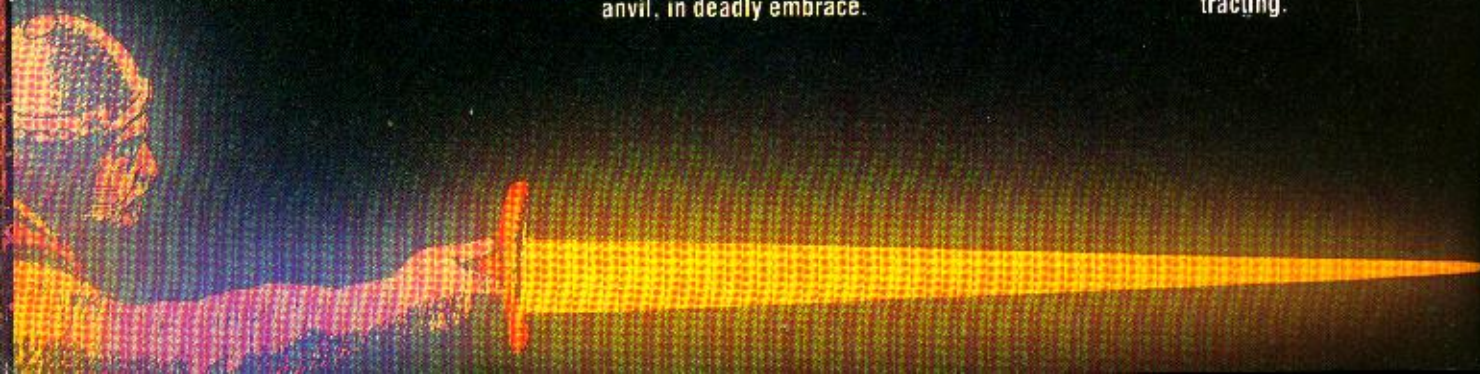
being held captive by your typical fire-breathing dragon. But this less than original tale is told in a revolutionary way. The game is literally a feature film quality animated cartoon that you control.

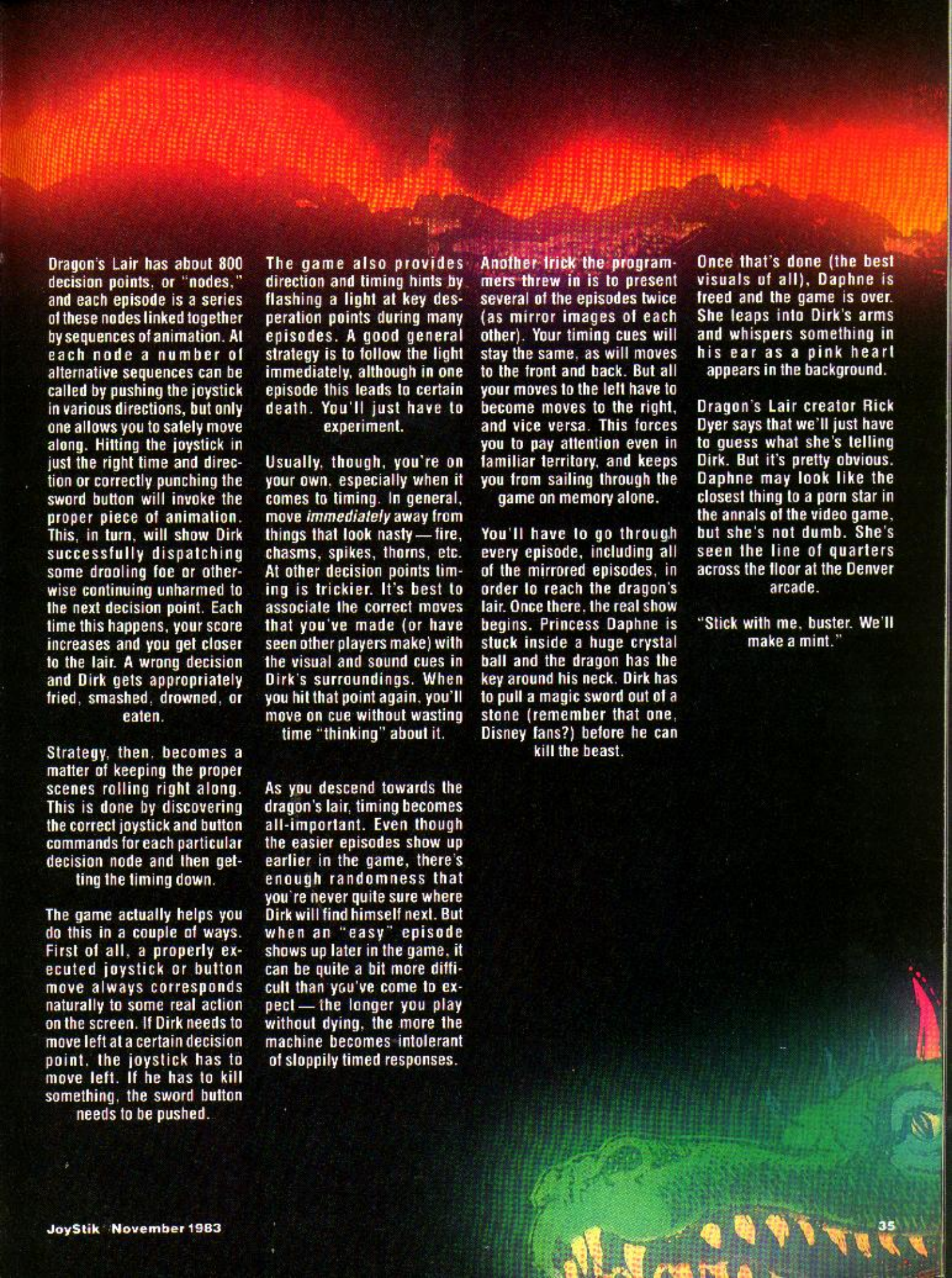
We're talking some serious mayhem here. By using a sword button and an eight-position joystick, you have to safely guide Dirk through 40 such locations or "episodes" of varying difficulty before reaching the dragon's lair and the unfortunate Daphne. Mistakes are punished by a graphically brutal (though invariably amusing) death.



You are standing in a very large stone floored room. A low wall of fire surrounds you on three sides. Far overhead, in defiance of gravity and all laws of reason, hovers a flaming sword. At once, it makes its move, straight for your heart. And you make yours—striking it harmlessly away with your own sword. A hovering mace takes its place above you, but again, you successfully parry the attack. Then, without warning, a glowing anvil lifts off the floor in front of you and screams across the air. You jump, but too late. The anvil smashes into your midsection, taking your broken body along as it punches through a wall, leaving behind nothing but an outline in the stone: you and the anvil, in deadly embrace.

Dirk starts out with a limited number of lives (usually three to five, but it's adjustable) that are quickly lost until you get used to the new style of play. The big difference between a laser disk driven game such as Dragon's Lair and previous video games is that in a laser disk game all possible actions are contained within the game itself. You don't really control Dirk's movements. What you're doing is telling the game's computer to go to the video disk (basically just a Pioneer laser disk player sitting in the cabinet), pick out a certain piece of stored animation, and run it on the screen. The beauty of the laser video disk is that these different scenes can be accessed so quickly that there isn't a significant break in the action. The occasional "blackouts" in the game mostly occur between episodes rather than within them, which isn't too distracting.





Dragon's Lair has about 800 decision points, or "nodes," and each episode is a series of these nodes linked together by sequences of animation. At each node a number of alternative sequences can be called by pushing the joystick in various directions, but only one allows you to safely move along. Hitting the joystick in just the right time and direction or correctly punching the sword button will invoke the proper piece of animation. This, in turn, will show Dirk successfully dispatching some drooling foe or otherwise continuing unharmed to the next decision point. Each time this happens, your score increases and you get closer to the lair. A wrong decision and Dirk gets appropriately fried, smashed, drowned, or eaten.

Strategy, then, becomes a matter of keeping the proper scenes rolling right along. This is done by discovering the correct joystick and button commands for each particular decision node and then getting the timing down.

The game actually helps you do this in a couple of ways. First of all, a properly executed joystick or button move always corresponds naturally to some real action on the screen. If Dirk needs to move left at a certain decision point, the joystick has to move left. If he has to kill something, the sword button needs to be pushed.

The game also provides direction and timing hints by flashing a light at key desperation points during many episodes. A good general strategy is to follow the light immediately, although in one episode this leads to certain death. You'll just have to experiment.

Usually, though, you're on your own, especially when it comes to timing. In general, move *immediately* away from things that look nasty—fire, chasms, spikes, thorns, etc. At other decision points timing is trickier. It's best to associate the correct moves that you've made (or have seen other players make) with the visual and sound cues in Dirk's surroundings. When you hit that point again, you'll move on cue without wasting time "thinking" about it.

As you descend towards the dragon's lair, timing becomes all-important. Even though the easier episodes show up earlier in the game, there's enough randomness that you're never quite sure where Dirk will find himself next. But when an "easy" episode shows up later in the game, it can be quite a bit more difficult than you've come to expect—the longer you play without dying, the more the machine becomes intolerant of sloppily timed responses.

Another trick the programmers threw in is to present several of the episodes twice (as mirror images of each other). Your timing cues will stay the same, as will moves to the front and back. But all your moves to the left have to become moves to the right, and vice versa. This forces you to pay attention even in familiar territory, and keeps you from sailing through the game on memory alone.

You'll have to go through every episode, including all of the mirrored episodes, in order to reach the dragon's lair. Once there, the real show begins. Princess Daphne is stuck inside a huge crystal ball and the dragon has the key around his neck. Dirk has to pull a magic sword out of a stone (remember that one, Disney fans?) before he can kill the beast.

Once that's done (the best visuals of all), Daphne is freed and the game is over. She leaps into Dirk's arms and whispers something in his ear as a pink heart appears in the background.

Dragon's Lair creator Rick Dyer says that we'll just have to guess what she's telling Dirk. But it's pretty obvious. Daphne may look like the closest thing to a porn star in the annals of the video game, but she's not dumb. She's seen the line of quarters across the floor at the Denver arcade.

"Stick with me, buster. We'll make a mint."



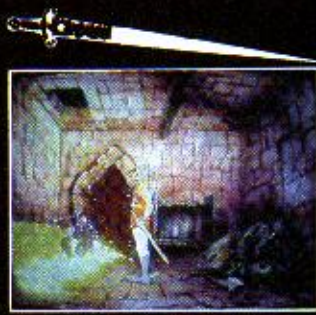
THE SPINNING BALLS

When Dirk's hand goes forward and he reaches the bottom of his crouch, push the joystick forward and he will get beyond the spinning posts. Next will come the Grim Reaper. Just when the thorns grow to surround you, pull the joystick toward yourself. When more thorns surround you, push the joystick forward to exit the door.



THE TENTACLE FROM THE CEILING

As soon as you see the tentacle coming from the ceiling, push the sword button. Next jump forward to the rack of weapons and then right to the blocked door and right again to the stairs. When the stairs become blocked, jump to the left to a low table on the floor and then immediately jump forward out the door.



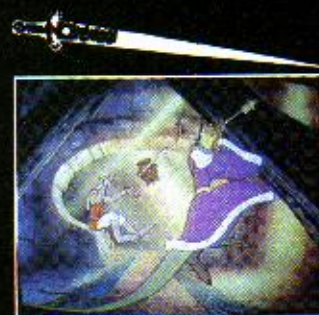
THE ROOM OF FIRE

The fire will begin to the left, so jump right to avoid it. Then it will begin from behind, so jump forward. Then push the joystick to the left over and over until the game has registered two moves. Dirk will head for a bench lying against the wall — push it aside and exit through a hole in the wall behind it.



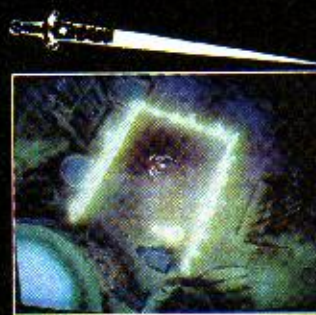
THE CRUMBLING WOODEN WALKWAY

Push the joystick forward until the game registers two moves and you are being attacked by bats. Then keep pushing the sword button until you hear the "move accepted" sound and then push the joystick to the right. Continue to the right until you make it to the rope on the other side of the chasm.



THE LIZARD KING

When the Lizard King first raises his scepter to crown you, go left. All turns after the first are to the right and the Lizard King raises his scepter to strike just before every turn. Soon you will catch up to your sword; push forward to grab it, and then press the sword button to finish off the Lizard King.



THE SMITHIE

When the floating sword comes at you, push the sword button. Then push the sword button just after the enchanted mace begins moving. Move to one side to avoid the anvil, and push the sword button when the view moves from the spear to Dirk. Then, when the Smithie begins to stir, push the sword button.



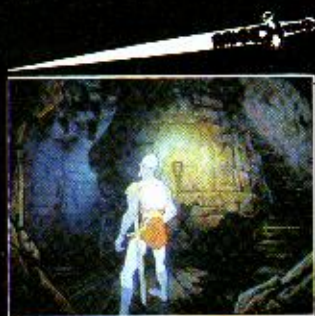
THE SLIDE

Begin pushing left when this scene begins. Next, while on the walkway, push the sword button and then push the joystick to the left. Now you have a choice: the chain or the hole in the wall to the left. Don't go for the chain — it's certain death. Push the joystick left and move to the hole in the wall.



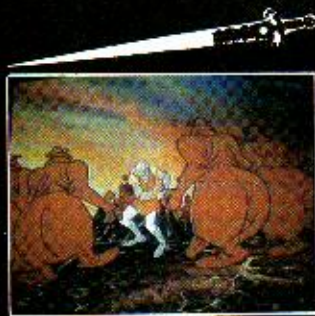
THE POOL

First, move towards the side Dirk's sword is on. Then move forward, and after you land for the second time move away from the wall and jump forward into the pool. Move to the side that you reached the pool from, move forward immediately, and use your sword to kill the spider. Quickly go to the side and forward.



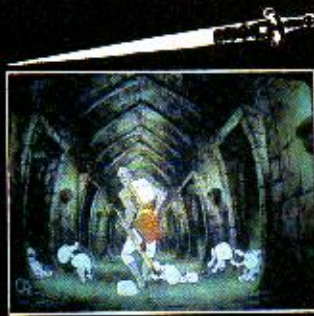
THE OTHER ATTACK BY BATS

As soon as you recognize this scene, start pushing the sword button. Push the joystick left when the stairs fall away before you, and then push left again to jump the gap. A large bat appears in the doorway, so begin pushing the sword button to kill it and then continue to the left and exit through the door.



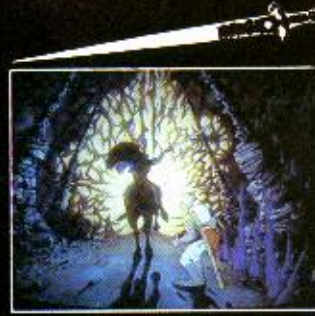
THE LAVA MONSTERS

When this scene begins, start pushing the sword button. When your sword has ineffectively bounced off the nearest lava monster and has just been returned to its sheath (the timing is critical), push the joystick forward. The next move is forward, the one after that is to the right, and the rest of the moves are all forward.



THE SKULLS BOUNCING ON THE GROUND

The skulls will come from the left and the right, so you must jump forward. Next—in anticipation of the hand that will grab you—begin pushing the sword button. After the hand falls completely apart, jump forward again, push the sword button, and exit through the unblocked doorway to one side.



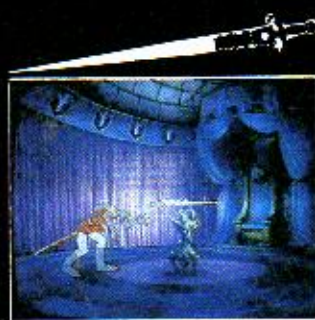
THE KNIGHT ON THE HORSE

This scene is easy once you realize that your sword is permanently stuck by the lightning and can't be used. Avoid the knight and the thorns by diving to the left twice and by going to the right the last time. As you exit through the cave, the Knight will throw his sword at you, but don't worry—he misses.



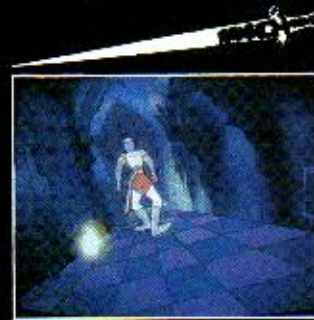
THE KNIGHT

Dirk is to one side of the Black Knight. Move in that direction. After landing, move back to the side you just came from and then push forward. Your next move is in the same direction as the last move before going forward, the next three moves alternate, and then push the sword button to finish off the Knight.



THE THRONE ROOM

An above view of this room will be given at first, and then a large magnet will pull your sword away. Begin by going right and then quickly forward and quickly right again. You will land in the throne, and your sword will be returned. The throne spins around through the wall, and you must get off by going right.



THE TILTING FLOOR

As soon as you see some of the tiles in the floor fall away, pull the joystick back toward yourself. When Dirk's legs spread apart, push the joystick back to the forward position and then immediately begin pushing it to the left. Don't move forward—a large grate will come down if you do.

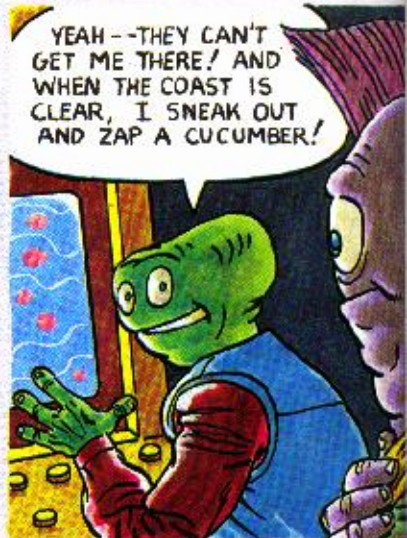


THE DRAGON'S LAIR

This is a complicated room. It has the best animation and graphics in the game, and it even has background music. Because it is fun to figure out, you're on your own. The only advice we will give you is: try not to wake up the dragon for a while and once he is awake run from him until you find the magic sword.

TRICKS OF THE TRADE

by Doug Mahugh



Pac-Man after 255 boards are cleared.

WHY 255?

If you can clear 255 boards in Pac-Man, you'll get to a board that looks like the one shown above, and your pattern (if you use one) definitely won't work. Is this an intentional deterrent to high scores—as many players claim—or is it just a problem in the game that shows up when you clear 255 boards? To understand the answer to this question, you need to understand the concept of "rolling over" a byte of computer storage.

All players are familiar with the concept of rolling over a game. To roll over a game means to surpass the highest score that the game can register, so that the score goes back to zero and begins climbing again. For example, if the game can

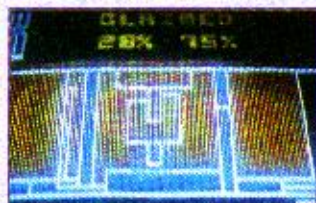
only display six digits of score, it will roll over at 999,999 points, because there is not enough room to display a score of 1,000,000 points. What really happens, of course, is that the score continues to climb over 1,000,000 points but only the six right-most digits of the score are displayed.

The byte rollover is exactly the same phenomenon occurring at another level—instead of rolling over the score display, you are rolling over a single byte (or register) of computer storage. In the Pac-Man split screen, for example, the register that stores the board number has rolled over, and the game program thinks that you are on the "0" board. Since the Pac-Man program was not designed to generate a board numbered 0 (it starts at board 1, the Cherry board), it gets confused and generates the mess depicted above.

Because of the way that computers store numbers (in binary representation), a byte of storage rolls over at 255. In other words, when the game machine adds 1 to 255 it gets a result of 0, in much the same way that

scoring 1 point when you have a score of 999,999 in Centipede will give you a score of 0. The reason this happens is that the binary representation of 256 is 100000000, and the computer can only see the eight right-most zeros. (Just as you can only see the six right-most zeros when you score 1,000,000 points in Centipede.)

The byte rollover is a common problem in video games. It's the reason that many games come to a strange and sudden end after 255 boards have been cleared or 255 turns have been earned. If a game does something strange (like the Pac-Man split screen) after 255 boards, it is usually a consequence of the byte rollover and should not be mistaken for an intentional trick by the designer.



By using this pattern, sparks will be trapped.

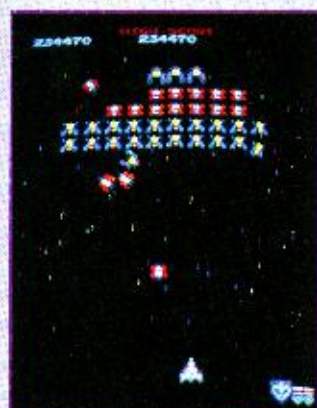
QIX SPARK LOOP

There are many tricks for avoiding the sparks in Qix,

but the one shown above is the best we've found. By building this figure at the center of the top edge of the screen, you can trap all of the sparks in a small loop.

Start out by moving to the top of the screen immediately after appearing on the screen. You must jump over a spark on the way to the top, but don't draw any more than is absolutely necessary.

Once you've reached the top, draw three blocks to form the sides of a rectangle with the top edge as the fourth side. Make the block on the side opposite where you jumped the spark a little larger so that both sparks will get back to the top at the same time. When both sparks are inside the rectangle, close off that area and move to the bottom of the screen. If the trap is set up properly, all additional sparks will go directly into it and you can take as much time as you want to trap the Qix in the lower part of the screen. Just be careful about moving too high up the screen; if you move above the bottom edge of the trap, the sparks will come out of the loop.



Galaga bugs that can't shoot aren't a threat.

DISARM THE BUGS

In the picture above, none of the Galaga bugs are firing. This isn't just because we took the picture during a break in the action; the Galaga bugs can be made to stop firing for an entire game by the following trick.

Shoot all of the bugs in a wave except for one of the two blue/yellow ones on the far left. You can leave either one or even both, but it is easier to leave just one, because your next task is to avoid the bugs' fire for up to 20 minutes without shooting them.

After you have waited long enough, (anywhere from about five to 20 minutes—we don't know why it isn't always the same), the bug

will stop firing. After he has passed through the top of the screen four times without firing, you can shoot him. From that point on, none of the bugs will fire at you.

Avoiding the bug's shots for 20 minutes can be difficult. One good technique is to stay in the far right corner most of the time. The only shot that can hit you there is one released by the bug while he is off the screen momentarily when he wraps around. If you do get killed, you can just pick up where you left off.

After the bugs have stopped firing, the game is very easy. If you are careful to avoid the bugs that scroll off the bottom of the screen, you should be able to last indefinitely.

If you're in a two-player game, the first player can do the trick and bugs will not fire on the second player's turns either. But after the first player has lost his last turn, the second player's bugs will resume firing.

DONKEY KONG, JR. INFINITE PLAY

This trick allows Player 1 to earn an infinite number of

extra turns, at the expense of Player 2's game. Player 1 just plays a normal game, but each time Player 2 has a turn he must perform a trick that costs him that turn and earns each player an extra turn. If Player 2 can do the trick every time, Player 1 will always have extra turns to play with and Player 2 will always have at least one turn left to perform the trick the next time around.



Donkey Kong, Jr. can be played forever.

At the beginning of the first screen, Junior appears on a platform in the lower left corner of the screen, as shown above. Walk to the right edge of this platform, and move as far right as possible without falling off. Only Junior's heel should still be on the platform.

Wait at the edge of the platform and watch for a blue Snapjaw to come down the first vine to the right. As soon as the Snapjaw leaves the end of the vine to fall in the water, jump toward it. You should hit the Snapjaw at the same time it hits the water.

If you timed your jump correctly, your turn will be over but both players will be awarded an extra turn. You can then play normally (as Player 1) until Player 2's turn comes up again and you must repeat the trick.



If you would like to see your favorite trick in this column, write it down and send it to us; for this issue, we extend a special thanks to Desiree McCrorey (for the Qix spark loop) and Tad Perry (for the Galaga and Donkey Kong, Jr. tricks).

TECHNOCRACY

THE NEXT VOICE YOU HEAR

Atari, Inc. has demonstrated the first home video game controller to use voice synthesis and recognition, allowing the player to control games with oral commands from a controller headset rather than with conventional joystick or paddles.

The new voice capability, shown at the Summer Consumer Electronics Show in Chicago, is made possible with an add-on module, the Voice Controller. The Voice Controller plugs into the controller port of the Atari 2600 and is accompanied by an audio headset.

The Voice Controller is manufactured by the Milton Bradley Company and should be available now. The initial library of games to use the module will include RealSports BASEBALL, Star Raiders, Battlezone and Berzerk. Suggested retail price is \$99.95.

ANDROBOT

Has Nolan Bushnell done it again? We'll just have to wait and see. If—in a few years—personal robots are as common as video games, then the man who founded Atari and Chuck E. Cheese Pizza Time Theatres can claim to have been at the forefront of yet another hi-tech craze.

Androbot, Inc. is Bushnell's latest venture, and he has high hopes for this small, aggressive Silicon Valley company. Androbot's first commercial products are B.O.B. and TOPO, person-

al robots for your home. B.O.B. operates entirely on his own, while TOPO requires a home computer to control him.

B.O.B. (an acronym for "brains on board") features three megabyte processing capability and three Intel 8088 16-bit microprocessors. Five built-in ultrasonic sensors allow B.O.B. to locate and measure objects in his immediate vicinity, and this information is logged in his memory so that he can move about at will without running into things. Infra-red sensors enable him to differentiate between humans and inanimate objects (based on their temperature), so that—supposedly—B.O.B. can treat people like people and objects like objects. (In other words, he knows better than to walk up to your television set and strike up a conversation.)

TOPO is similar to B.O.B., but he has no brains of his own—he needs the help of a home computer to control him. A remote radio link will allow TOPO to receive commands from your home computer up to 90 feet away.

Both robots stand three feet tall and move about on two motor-driven wheels. They are completely stable even when they aren't moving, because of a revolutionary drive assembly called Andromotion (TM). B.O.B. will sell for \$2495, and TOPO will sell for \$995.

A wide range of accessories will be available for B.O.B., allowing him to

perform many common household tasks. He can carry things around in his Androwagon, for example, or dispense cold beverages from his optional AndroFridge. And an AndroSentry cartridge will enable him to patrol and safeguard your home.

In addition to B.O.B. and TOPO, Androbot has announced plans to introduce F.R.E.D. (Friendly Robotic Educational Device) and AndroMan. F.R.E.D. stands 12 inches tall and can walk, talk, and draw pictures on command. He has a 45 word vocabulary, but his real interest is sketching. Put a pen in his drawing pen attachment, and F.R.E.D. will duplicate any pattern you create on your computer screen by dragging the pen across your floor or tabletop. With a little planning and patience, you could even teach him to do it on paper.

AndroMan is designed to play games with you on your Atari 2600. While you control the action on the TV screen, AndroMan will be playing the same game "in real life," moving over a GameScape that you set up on the floor complete with real objects that correspond to images on the screen.

Androbot has not announced specific prices or shipping dates for F.R.E.D. and AndroMan.

THE WAIT IS OVER

If you've been frustrated over the selection of games for your Colecovision,

we've got some good news for you—the wait is just about over. In a manner similar to that which got companies with varied interests involved in putting a glut of Atari-compatible games on the market, a number of manufacturers are cautiously preparing Colecovision game cartridges.

The new cartridges, in many cases, outdo Coleco by eliminating the 15-second load time. You just plug in the cartridge, turn the switch on, and enter game options through your keypad, or in some games, just start playing. A major complaint about Coleco games is now virtually eliminated, and with competitors on the market, Coleco undoubtedly will come out with their own "instant-on" cartridges.

The list of manufacturers of Coleco carts is impressive and continues to grow. Imagic is the first major Atari-compatible manufacturer to sign a licensing agreement with Coleco. Their Nova Blast game and a yet untitled adventure game both boast impressive graphics. Sydney Development Company, a Canadian software house, is set to release Colecovision versions of Evolution and Quest for Tires. Micro Fun will be coming out with Miner 2049er, an adaptation of the very popular Big Five computer game for Atari. Starpath is adapting the most successful of its SuperCharger games to the system; the first release will probably be Escape from the Mindmaster, with

others scheduled to follow shortly. Parker Brothers, N.A.P. (the makers of Odyssey2), and a host of others will soon be entering the field with their own releases.

DIFFICULTY SETTINGS

Arcade owners have the option to adjust their machines to prevent individual players from tying up a game for too long. Here are the possible difficulty settings for several current games, along with the setting recommended by the manufacturers.

Atari designed Star Wars to be played at easy, moderate, hard or super hard levels. It is possible to begin a new game with as many as nine shields and there are zero to three bonus shields available per wave completed. When Star Wars machines leave the factory, they are set at the hard level, games begin with six shields and one bonus shield is awarded per wave completed.

Congo Bongo can be set at easy, medium, hard or hardest difficulty levels. Sega sets it for easy play. There are a potential five hunters allocated per game and bonuses can be earned at 10,000, 20,000, 30,000 or 40,000 points. New machines are set for three hunters and bonuses are awarded at 10,000 points.

Difficulty levels for Time Pilot by Centuri range from very easy to easy, difficult, and very difficult. A possible three, four or five lives

are available and bonuses can be earned at 10,000 and 50,000 points and 20,000 and 60,000 points. Recommended settings are difficult, three lives and bonuses at 20,000 and 60,000.

There are ten possible levels of difficulty (ranging from zero to nine) available on Splat by Williams. The factory sets the machines on level 5. In a long game, a man is awarded every 1000 points; in a very short game, a new life is earned every 79,000 points. The factory setting lets you earn three men during a game. The number of seconds per wave varies from 15 to 99. Factory standard is 30 seconds per wave.

When Millipede games reach an arcade, they can be set for easy or hard millipede heads, easy or hard beetles and easy or hard spiders. A total of three, four or five lives are possible. They can be set so no bonuses are available or so extra turns are awarded at every 12,000, 15,000 or 20,000 points. The select mode enables a player to choose a starting level from novice to expert. The games leave Atari's factory set for easy millipedes, beetles and spiders and three lives are available. Bonuses are awarded every 15,000 points and they are set at "disable" mode, which begins each game at a score of zero.

Two levels of difficulty are possible in Cinematronics' laser disk Dragon's Lair game. There are a possible three or five lives available.

Machines leave the factory set on level 1, giving three lives. The machines can also be adjusted to accept two, three or four coins. Most accept two, making Dragon's Lair the first game to absolutely require a double dip.

BUSINESS AND PLEASURE

Home video takes on a new aura of respectability with the introduction of Coleco's Adam Family Computer System, just in time for holiday celebrations and income tax filing. But besides the inspired marketing bid of blending business and pleasure in one package, what makes this system remarkable is its price tag. The Adam is a complete computing/gaming package retailing for less than \$600, comparable to the price of an electric typewriter, an appliance which the system virtually erases all need for.

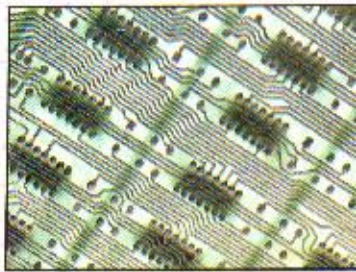
Giving the Adam its bite is the union of two memory systems. A solid state 80K of RAM is supplemented by a magnetic digital drive the manufacturer dubs Data-Pak. The digital drive stores up to 500K bytes of data (that's 250 double-spaced pages) by expanding the standard RAM to 144K with an optional 64K memory module. A modular expansion port will accept a variety of peripherals, even a second digital drive, all on the same neatly engineered console that plays Colecovision game cartridges.

Perhaps symbolic of Coleco's new cloak of serious

computing are the two game controllers included in the package. Hand-held or attached to the computer, they double as devices for entering numbers and cursor control, as well as playing games. There are also several other features making the system an attractive multi-purpose unit for the home. Word processing software is built in. The keyboard is full sized. An optional printer, which accepts fanfold computer paper or conventional letterhead, delivers 120 words per minute using standard daisy wheels.

Not only is the Adam's software integrated, permitting the interchange of data among various programs, but the system is designed to be compatible with CP/M application programs and Apple-Source Code software. Many programs written in AppleSoft Basic will run on it. Coleco also is introducing its own line of Smart Software, including educational and information management programs.

The key to the system is a network of matched microprocessors in the keyboard, printer and memory console. Together, they free the full power of the central processing unit to simultaneously perform coordinated tasks.



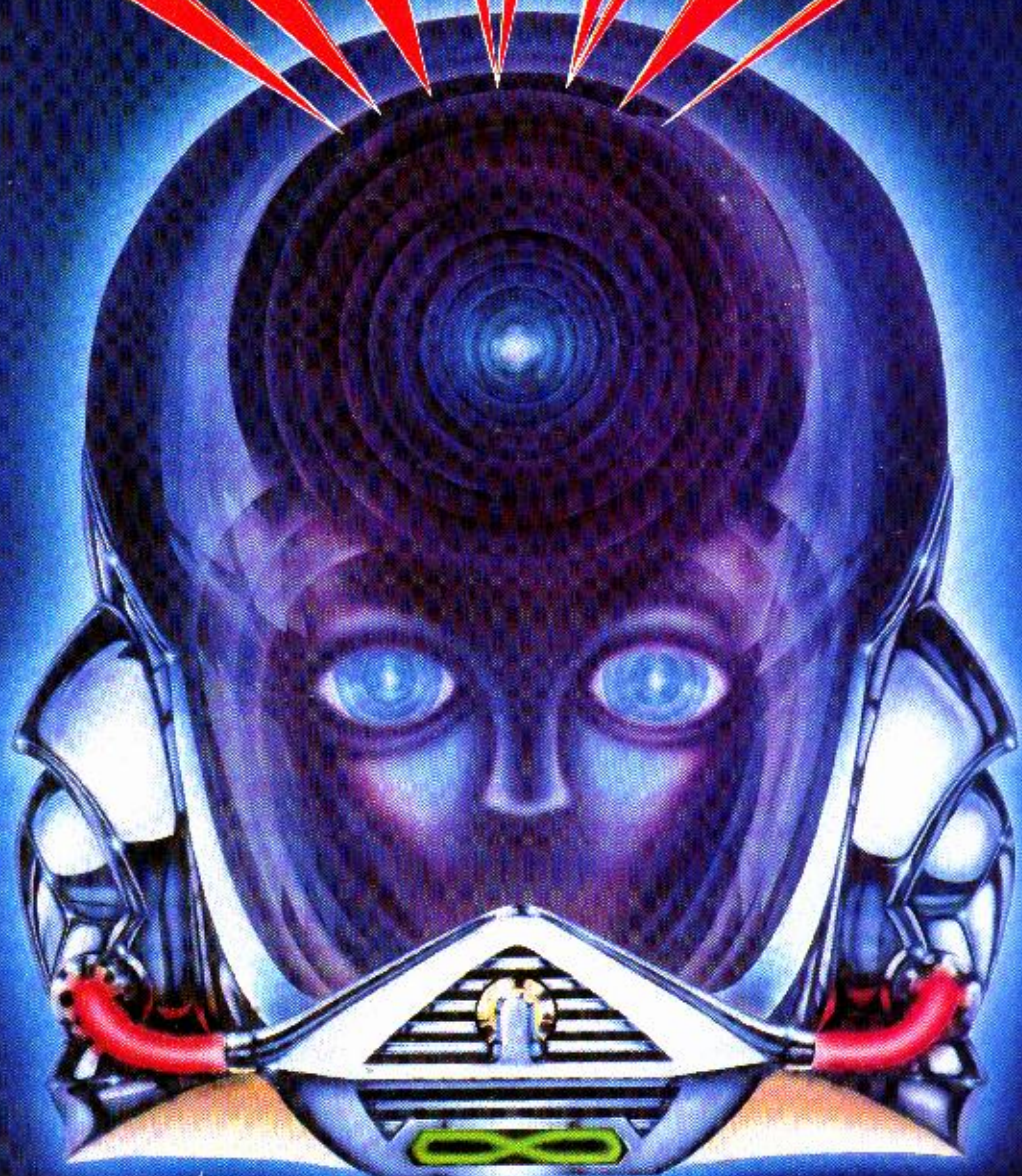
JOYSTIK CHAMPS

The list grows longer and the scores grow higher! Send your high scores to the Twin Galaxies International Scoreboard: 226 E. Main Street, Ottumwa, Iowa 52501. Please include a signed verification of your score(s) from the owner or manager of the arcade in which the score was achieved. Also, be sure to include the bonus and difficulty settings from the machine you played, and any comments you wish to make about the game.

Game	Player	High Score	Date	Arcade Location
Arabian	Mike Ziara	102,850	6/15/83	Golden Dome: Salisbury, MD
Asteroids	Leo Daniels	40,101,910	2/6/82	Ocean View Corp.: Carolina Beach, NC
Asteroids Deluxe	Leo Daniels	2,269,230	5/3/82	Light Years Amusement: Wrightsville Beach, NC
Bagman	Mark Robichek	3,333,330	4/30/83	Golfland USA: San Jose, CA
Battlezone	Jack Haddad	21,851,000	5/5/83	Golfland USA: San Jose, CA
Berzerk	Ron Bailey	77,490	3/22/83	Time Out Arcade: Gastonia, NC
Bubbles	Spencer Ouren	749,790	5/5/83	Strand Union Recreation Center: Bozeman, MT
Buck Rogers	Bruce Borasato	313,330	3/8/83	Electric Pizazz: Trail, British Columbia
Bump-n-Jump	Mike Ternasky	1,971,000	5/23/83	Golfland: Milpitas, CA
BurgerTime	Thomas Sher	5,663,220	5/11/83	Columbis Video: San Francisco, CA
Certipede	Darren Olson	15,207,353	10/7/83	Reflections: Calgary, Alberta
Congo Bongo	Steve Harris	376,470	6/22/83	Bob's IGA: Kansas City, MO
Defender	Burl Jennings	76,377,300	4/8/83	Outer Limits: Durham, NC
Dig Dug	Ker Arthur	4,129,600	1/20/83	Video Games Inc.: Blacksburg, VA
Donkey Kong	Bill Mitchell	874,300	11/82	Twin Galaxies Arcade: Ottumwa, IA
Donkey Kong, Jr.	Bill Mitchell	957,300	11/82	Twin Galaxies Arcade: Ottumwa, IA
Frogger	Mike Mann	4,789,909	3/4/83	The Arcade: Oak Park Heights, MN
Front Line	Jeff Peters	668,400	5/13/83	Starship Video: Upland, CA
Galaga	Mike Lynn	12,753,570	12/29/82	Phil's Lakewood, CA
Galaxian	Perry Rodgers	389,770	5/12/83	Martini's Time Machine: San Luis, CA
Gyruss	Todd Walker	905,650	no listing	Golfland: Milpitas, CA
Jungle King	Michael Torcello	1,510,220	5/83	Wegman's: East Rochester, NY
Make Trax	Clifton Newman	1,888,940	4/21/83	Outer Limits: Durham, NC
Millipede	Ben Gold	4,304,549	2/4/83	Pro Video Game Center: Dallas, TX
Missile Command	Victor Ali	69,739,020	1/21/83	Cinedome 7: San Francisco, CA
Moon Patrol	Mark Robichek	1,214,600	3/11/83	Golfland USA: Mountain View, CA
Mr. Do!	John McKeever	2,535,850	5/14/83	Casino Amusement Ctr.: Montreal, Quebec
Ms. Pac-Man	Tom Asaki	419,950	6/19/83	Twin Galaxies: Ottumwa, IA
Pac-Man	Les Martin	12,719,060	no listing	Golden Dome: Salisbury, MD
Pengo	Kevin Lechner	809,990	2/25/83	Mission Control: Racine, WI
Phoenix	Mark Gottraud	987,620	3/7/83	Cloverleaf Miniature Golf: N. Miami Beach, FL
Pole Position	Les Lagier	66,710	6/7/83	Video Paradise: San Jose, CA
Popeye	Steve Harris	818,280	5/17/83	NKC Pro Bowl: Kansas City, MO
Q*Bert	Terry Mann	24,000,060	5/18/83	Saturn's Ring: Medford, OR
Qix	Bill Camden	1,666,604	1/15/83	Galaxy I: Lynchburg, VA
Reactor	Todd Mayberry	396,731	2/11/83	Mack Gold Mine: Kennett, MO
Robotron	Robert Bonney	325,325,325	4/26/83	Wizards Video Magic: Kirkland, WA
Satan's Hollow	Michael Ward	8,692,035	3/12/83	Odyssey: Madison, WI
Scramble	John Norman	999,250	12/6/82	Light Years Amusement: Wrightsville Beach, NC
Sinistar	Don Morlan	1,099,000	6/28/83	Arnolds Arcade: Kent, WA
Space Duel	Dave Covell	597,750	4/23/83	Bun & Games: Kenosha, WI
Space Invaders	Ted Troide	2,066,060	5/31/83	Alvin Orcs: Nacogdoches, TX
Stargate	Roger Mangum	71,473,400	4/8/83	Outer Limits: Durham, NC
Tempest	Pablo Zaldiver	9,911,772	12/24/82	Marty-Mart: New Orleans, LA
Time Pilot	Bill Bradham	4,134,400	6/10/83	Take Ten: Dublin, GA
Tron	Huberto Gandara	8,999,998	6/12/83	7-11: Temple, TX
Turbo	Garlin Bullard	154,442	5/8/83	Just For Fun: Villa Park, IL
Tutankham	Mark Robichek	1,004,980	4/3/83	Golfland USA: Milpitas, CA
Xevious	Tim Williams	9,999,990	5/16/83	Mr. Bill's: Moscow, ID
Zaxxon	Eric Burch	3,839,550	4/9/83	Chuck E. Cheese: Waco, TX
Zookeeper	Eric Ginnet	8,601,990	6/27/83	Golfland USA: Sunnyvale, CA

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Joystik - November 1983 Issue

nov83-01	Cover
nov83-02	Editors Message
nov83-03	Contents
nov83-04/05	Letters
nov83-06	New Waves
nov83-07/12	Star Wars
nov83-13/18	Bump 'n' Jump
nov83-19/24	Millipede
nov83-25/28	Joust
nov83-29/34	Dragon's Lair
nov83-35/36	Tricks of the Trade
nov83-37/38	Technocracy
nov83-39	Joystik Charts
nov83-40	Journey AD