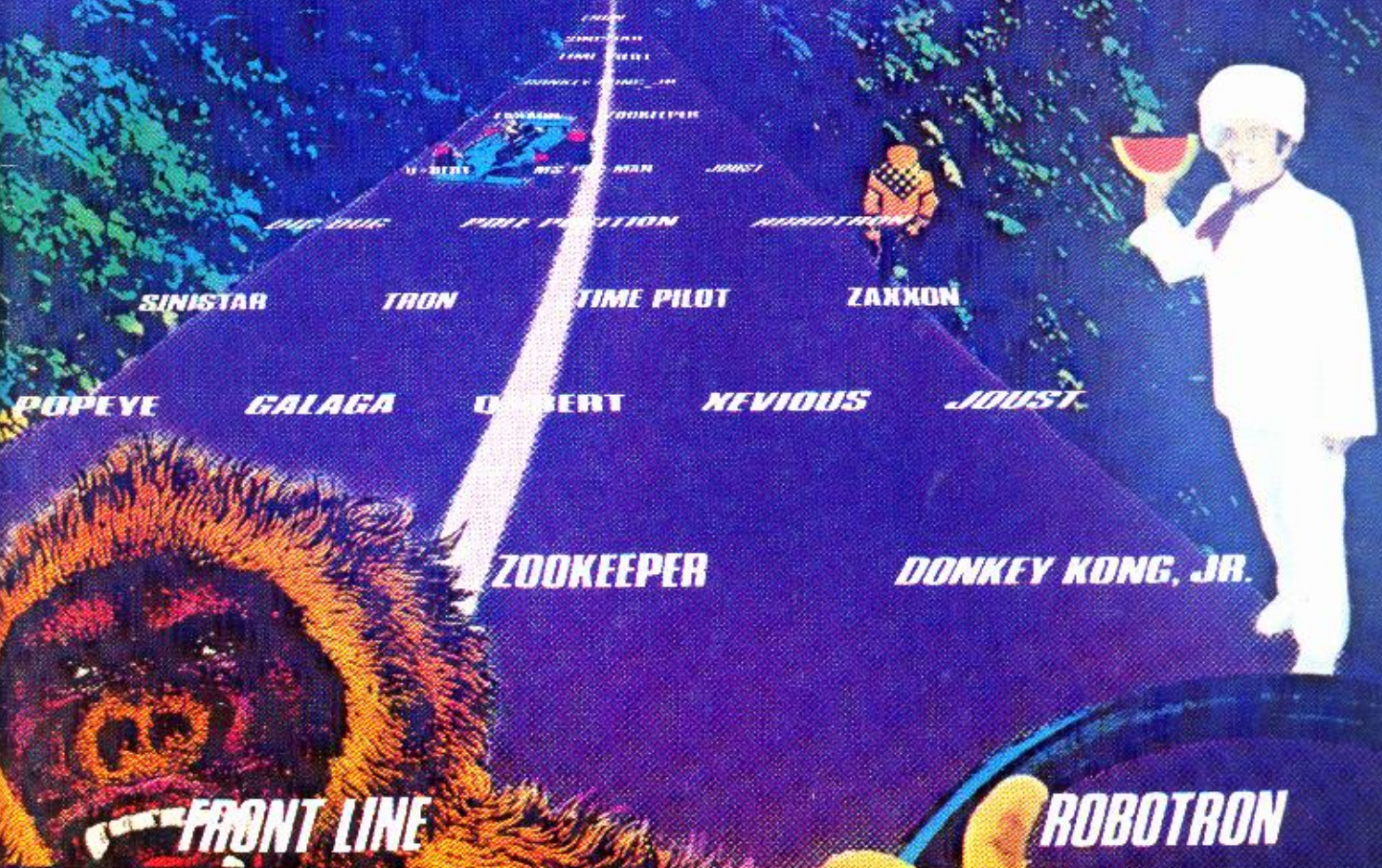


# JoyStik®

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## HOW TO WIN ARCADE VIDEO GAMES



FRONT LINE  
SINISTAR  
POPEYE  
ZOOKEEPER  
TRON  
GALAGA  
ROBOTRON  
TIME PILOT  
DESERT  
DONKEY KONG, JR.  
ZAXXON  
KEVIOUS  
JOUST



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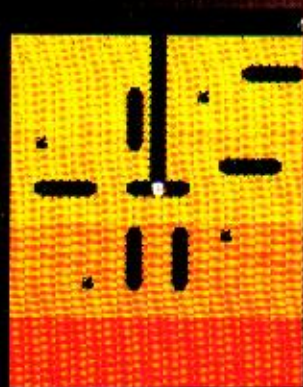
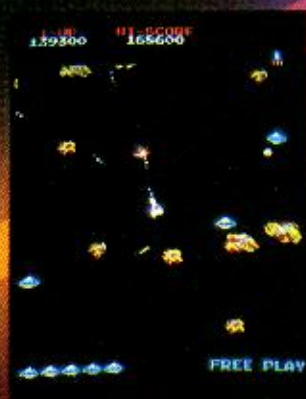
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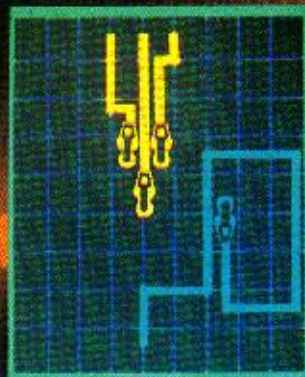
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# GALAGA



Galaga is the sequel to Galaxian, an early coin-op hit, and it has been one of the ten most-played games in the country for over a year. It is a simple and colorful game with good graphics and sound, and it offers the player more firepower than almost any other game by use of the doubleship (described below).

The basic objective of Galaga is to shoot swarms of deadly bugs that enter from the bottom of the screen and then attack from a formation at the top. You control a small spaceship that can move back and forth across the bottom of the screen and fire straight up at the enemies.

The controls are the same as Galaxian. A joystick moves your ship across the screen, and a button is used to fire shots. The fire button has rapid-fire capability, so you can hold it down for automatic firing. Only two shots can be on the screen at one time, however, so it's better to fire manually and conserve your firepower.

The enemy bugs fly onto the screen from below in groups of six to ten. Each group of bugs circles around the screen for a second and then comes to rest at the top. After enough bugs have entered to fill the formation at the top of the screen, they begin peeling off individually and in groups to attack your ship. Your goal is to eliminate all of the bugs on the screen, at which point more groups of bugs will come out and build the formation again. Each formation of bugs is called a Stage.

There are three kinds of enemy bugs. Since they don't have names, we'll just call them blue bugs, red bugs, and flagships.

Blue bugs make up the bottom two rows of the formation. They usually move in a circle when they drop down to attack, and after completing a circle they will pass through the bottom of the screen and return through the top.

Red bugs move towards you in a large sweeping curve, and don't circle back up like the blue bugs. They make up the third and fourth rows of the formation.

Both blue bugs and red bugs fire at your ship. They fire shortly after leaving the formation, and their shots are always aimed directly at your ship if it is in the center part of the screen. The shots don't change course once they're out,

so keep moving to avoid them.

Flagships are the largest bugs. They always go to the top row of the formation, and they are not as aggressive as your other enemies. Red bugs and blue bugs can be eliminated with a single shot, but flagships must be shot twice. After the first shot they glow light blue, so you can easily tell whether the next hit will destroy a flagship.

Occasionally a flagship will do something very strange. After leaving the formation, it will circle downward to a point directly above where your ship was when the flagship began moving. Then, instead of continuing down and off the screen, it will stop and radiate downward a fan-shaped beam of light. This beam only lasts a few seconds, and then the flagship retracts it and drops through the bottom of the screen.

If you move your ship into the flagship's beam before it retracts, your fighter will be captured. It will begin spinning and move slowly up to the flagship, which will then tow it back to the top of the screen. If you were on your last turn the game is over, but if you have another turn in reserve you will begin playing with it while your previous fighter is trapped at the top of the screen.

Your goal now is to free the captured fighter. To do this, you must shoot

the flagship while it is moving out of formation with the fighter in tow. Be careful not to hit the captured fighter; it is worth 1000 points, but it is much more valuable if you can free it. Once the captured fighter is freed, it will drop down and bind to the side of your ship. Both fighters then move and fire in unison — this is the Galaga doubleship.

Because both ships fire simultaneously, the doubleship gives you tremendous firepower. Although it is a bigger target — and therefore a bigger liability — than a single ship, this is more than made up for by the increased firepower. Most players find that it is best to use the doubleship whenever possible, because it allows you to finish the stages quickly and safely. If a bullet hits one half of the doubleship, the other half will not be harmed, and you simply revert back to single ship play.

The doubleship is especially useful during the Challenging Stages. Challenging Stages are stages where the bugs just come onto the screen in small groups and perform some aerial acrobatics before flying away. They don't fire or fly off the bottom of the screen, and your objective is simply to shoot as many of them as possible before they leave. With the doubleship, you can usually get all of the bugs in a Challenging Stage, and this will earn you a 10,000-point bonus.



PLAYER SHIP



DOUBLESHIP



FLAG SHIPS  
150 - 16,000 points



RED BUGS



BLUE BUGS



The most important part of Galaga strategy is anticipation. In order to play effectively, you need to know where the bugs will appear and how they will move before they get there. This knowledge—combined with double-ship firepower—will allow you to finish each Stage quickly and efficiently.

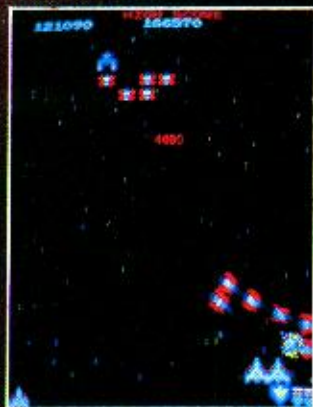
The way that the bugs come onto the screen is called their entrance pattern, and the entrance pattern is always the same for a given Stage. There are three different entrance patterns. Before looking at the other they appear in, let's look at the features of each one.



First entrance pattern for Red Bugs.

The first entrance pattern is the most difficult, because it is the only pattern where bugs will enter from both sides of the screen at the same time. The bugs enter single file in short rows, with the blue bugs coming from the lower left corner and the red bugs coming from the lower right. The best place to fire from in this entrance pattern is the center of

the screen, where both sets of bugs will cross above you. This is also the safest place to be, because the bugs will drop bullets as they come onto the sides of the screen.



Second entrance pattern.

In the second entrance pattern, the bugs enter from one side of the screen at a time in double-width rows. The first group will enter from the left, so position your ship one ship's width in from the left edge of the screen and wait for them.



Third entrance pattern

The third entrance pattern is similar to the second. The bugs enter from one side at a time, starting from the left. But instead of two rows moving together, they appear in a single long row. As in the second pattern, you should wait near the left edge of the screen for the first group of bugs.

After the start of each entrance pattern, the general strategy is always the same. Anticipate the entrance of each group, and kill as many of the bugs as possible before they move into formation. Then move across the screen under their bullets to get in position for the next group. Fire constantly as you move across the screen to clear out the bugs already in formation.

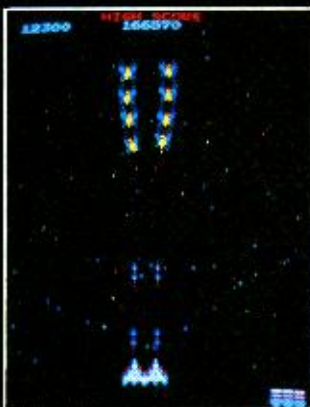
If you eliminate most of the bugs in each group before they reach the formation, there will only be a few bugs left after the last group has entered. You'll have to destroy these individually, but this is the only time you need to aim your shots. Galaga may be the only shooting game in which you rarely need to aim!

A Challenging Stage comes after each set of three entrance patterns. The only exception to this is the first set, where the third entrance pattern is skipped. (Another change in the first set is that the first entrance pattern has red bugs on the left and blue bugs on the right, but this does not affect strategy.) In other words, Stage 1 uses the first entrance pattern, Stage 2 uses the second entrance pattern, and then Stage 3 is the first Challenging Stage. After Stage 3, the set of four different Stages (entrance patterns 1, 2 and 3, and a Challenging Stage) repeats over and over.

Starting with the second repeat of the entrance patterns (Stages 4, 5 and 6), special bonus bugs begin appearing. A blue

bug will begin pulsating and move out of formation to change into a short row of three bonus bugs. In Stages 4, 5 and 6, the bonus bugs are yellow scorpions, and shooting all three will earn you a 1000-point bonus. In the next repeat of the entrance patterns, the bonus bugs are small green insect heads, and a set of three is worth 2000 points. The next repeat of the entrance pattern has red and yellow Galaxian flagships for bonus bugs, and sets of three are worth 3000 points. After that, the three different bonus bugs repeat in the same order. Bonus bugs are always worthwhile targets, because they are not very aggressive and are worth more than the other bugs.

In the first two Stages, you won't need to worry too much about entrance patterns because the bugs aren't very aggressive yet. Just try to acquire a doubleship, so you'll have it going into the first Challenging Stage.



The first Challenging Stage.

At the start of the first Challenging Stage, position your ship in the exact center of the screen. To make sure you're centered, watch how your shots pass through the words *HIGH*

*SCORE* at the top of the screen. If you're exactly centered, your left shot will pass through the last *H* in *HIGH* and your right shot will pass through the *S* in *SCORE*.



Special bonus for hitting all the bugs in a Challenging Stage.

From this position, you should be able to get all of the bugs in the first Challenging Stage without moving. In fact, it is possible to shoot all of the bugs in this Stage by just holding the fire button down. If you miss any bugs, you'll get another chance to hit them when they retreat off the top of the screen. Move back to the center immediately after chasing any missed bugs, so you'll be ready for the next group.

The second Challenging Stage can also be cleared from the center of the screen. After that, the Challenging Stages require you to move around more. Each Challenging Stage has five groups of bugs, so there will be up to five different positions you must fire from. Once you have found a position that works for a given group of bugs in a given Challenging Stage, always return to that position for that group. Eventually, you will develop your own set of positions for each Challenging Stage.

# JOUST

Joust is an instant classic. Its spectacular graphics and animation have set standards by which other games are judged, and the game concept is so original that it defies classification. At the start of the game, an Ostrich appears at the bottom of the screen. A man holding a lance is seated on the bird's back—that's you. While riding your feathered steed, you can run across rock ledges or even leap into the air and fly. You must battle with Buzzards (by jousting, of course) and avoid the deadly Lava Troll, a large hand that reaches out of burning lava pools at the bottom of the screen. If you're within his reach, the Lava Troll will grab the Ostrich by the legs and pull you both into his fiery home.

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.

The most obvious difference between Joust and other flying games is the controls: a two-direction joystick and a flap button. The joystick controls your horizontal motion, while the flap button is used to keep your Ostrich airborne. Each time the flap button is pressed, the Ostrich's wings flap. To stay in the air, you must repeatedly hit the flap button. Flapping about two times per second will hold the Ostrich at a constant altitude; flap faster and you'll rise, flap slower and you'll descend slowly.

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.

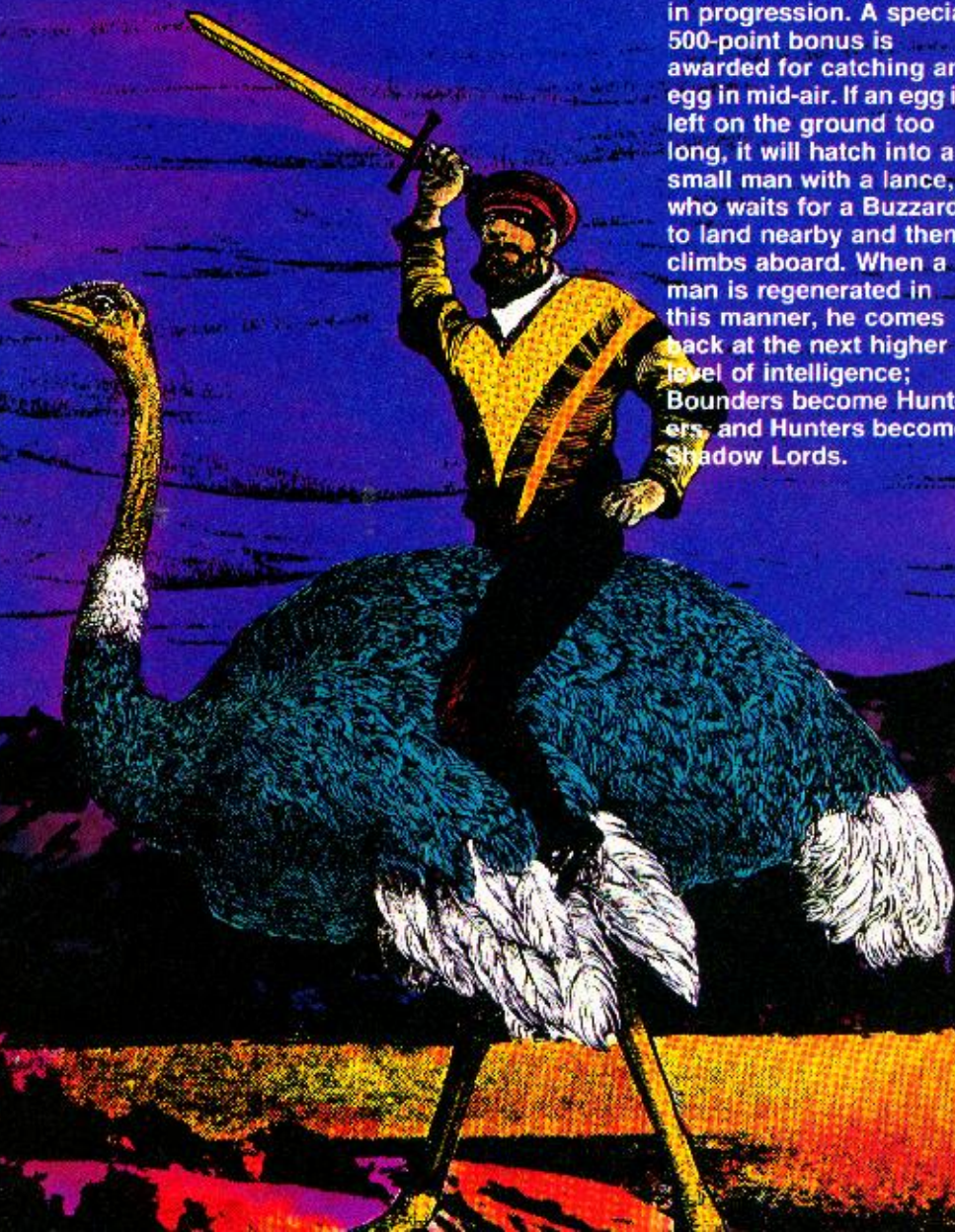




There are three types of opponents in Joust: Bounders, Hunters, and Shadow Lords, worth 500, 750, and 1500 points respectively. They all ride on green flying Buzzards, and the only way to tell them apart (besides their progressively more intelligent behavior) is by the colors of their turbans—Bounders are red, Hunters are grey, and Shadow Lords are light blue.

You destroy opponents by unseating them with your lance. In any collision between you and an opponent, the lower lance loses. If you're both on the same level, it's a "tie," and you bounce off each other.

When you lose a joust, your Ostrich will fly off the screen and then reappear by rising out of a trap door in the least crowded portion of the screen. When you win a joust, your opponent's Buzzard drops an egg and flies off the screen. These eggs are very rubbery, and can survive a fall from any height. Collecting an egg (by landing on it) nets you 250, 500, 750, or 1000 points in progression. A special 500-point bonus is awarded for catching an egg in mid-air. If an egg is left on the ground too long, it will hatch into a small man with a lance, who waits for a Buzzard to land nearby and then climbs aboard. When a man is regenerated in this manner, he comes back at the next higher level of intelligence; Bounders become Hunters, and Hunters become Shadow Lords.



PLAYER 1



PLAYER 2



BOUNDERS  
500 points

HUNTERS  
750 points

SHADOW LORDS  
1500 points



PTERODACTYL  
1000 points



EGGS  
250 - 1000 points



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, facing to the left.

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 dropping from the sides. 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 when possible.

## PTERODACTYL HUNTING

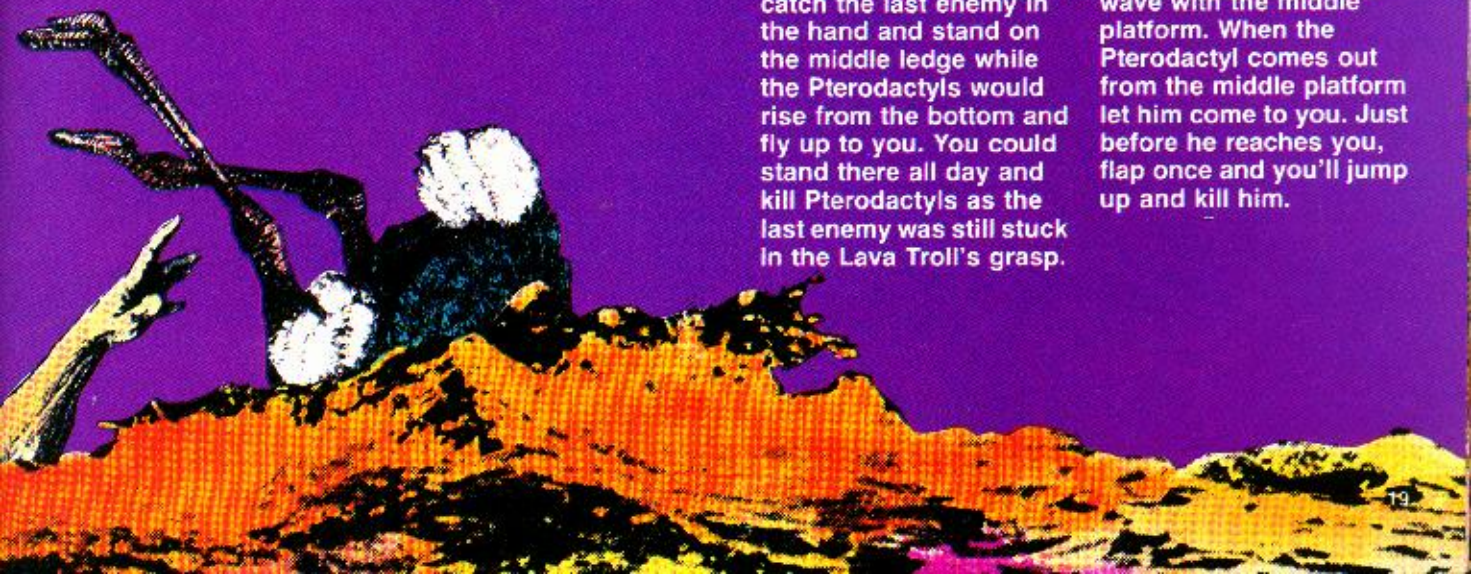
Original Joust machines were often victimized by the infamous Pterodactyl hunters. A technique was quickly developed which allowed players with very little skill to play one game forever. You could catch the last enemy in the hand and stand on the middle ledge while the Pterodactyls would rise from the 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.



Killing a Pterodactyl at the end of a wave.

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.



# MS. PAC-MAN

What was the most popular game of the last three years? Pac-Man, of course. And the second most popular game? Ms. Pac-Man—the most welcome sequel game yet.

Very few changes were made in the original Pac-Man program to produce Ms. Pac-Man. But the changes that were made have only generated more interest in the game. To Pac-Man players, the most obvious difference is that patterns cannot be used in Ms. Pac-Man. Blinky and Pinky take random paths during the first five seconds of each screen, so no pattern can be consistently safe. A particular start may appear to work well most of the time because Blinky and Pinky are off in left field, but there is always a chance that one of them will turn in front of you or be uncomfortably close.



Ms. Pac-Man is less tiring to the eyes than Pac-Man. The mazes come in pastel colors and Ms. Pac-Man herself is more personalized with her lipstick, eyeshadow, and ribbon. The intermissions are also more detailed and entertaining. The third intermission is the best of all—Pac-Man, Jr. is brought in by a stork to expectant parents.

There are four different mazes in Ms. Pac-Man, rather than just one. This gives beginning players something new to look forward to—you never know what's beyond the next screen until you get there. And having four different mazes prevents players from becoming so good at one maze that they don't even need patterns.

Another new feature of Ms. Pac-Man is that the fruit is not stationary—it comes in one of the tunnels and moves clockwise around the center of the maze. If not eaten, it

will tromp right back out after a while. The value of the fruit increases steadily from 100-point cherries to a 5000-point banana, and from then on the fruits appear randomly.

Your objective in Ms. Pac-Man is exactly the same as in Pac-Man—clear as many screens as possible, and avoid the monsters when they aren't blue (energized). Just in case you're one of those people who never played Pac-Man (if, indeed, there are such people), the following is a more detailed explanation.

You control a yellow gobbler (Ms. Pac-Man) with a four-direction joystick. Maneuvering through a maze filled with white dots, you must avoid the four monsters (Inky, Blinky, Pinky, and Sue) who will pursue you. Each of the monsters has its own personality, and learning how each of them reacts to specific situations is the key to playing well.

Your goal is simply to clear the screen of dots, by passing over (eating) them all. If you eat all of the dots, the screen is filled with dots again—possibly in a different maze—and you start over again. Bonus fruits appear twice during each screen. These should be eaten also, because they can be worth up to 5000 points.

Four of the dots in each maze have a special meaning. Appearing in each of the four corners, these large flashing dots are called energizers. When you eat an energizer, the monsters will all slow down and turn blue for a few seconds. During this time, Ms. Pac-Man is invincible and can eat the monsters for extra points. The first blue monster is worth 200 points, and the next three are worth 400, 800, and 1600 points each. Using an energizer perfectly, then, is worth up to 3000 points.



MS. PAC-MAN



INKY red  
200 - 1600 points



BLINKY green  
200 - 1600 points



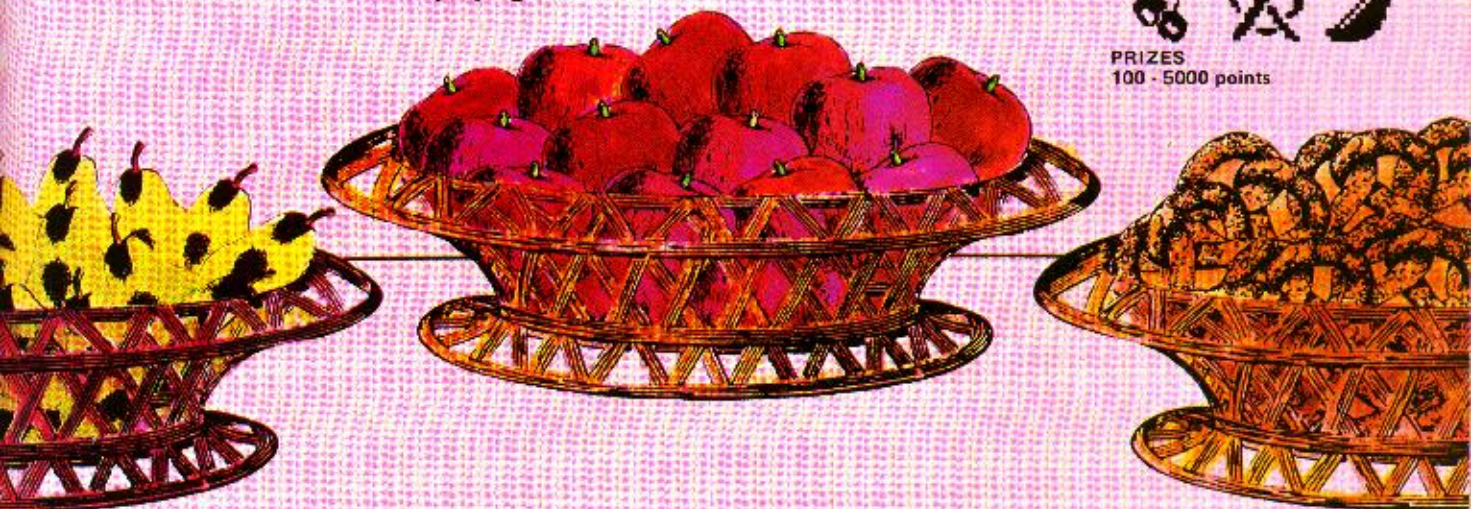
PINKY pink  
200 - 1600 points



SUE brown  
200 - 1600 points



PRIZES  
100 - 5000 points



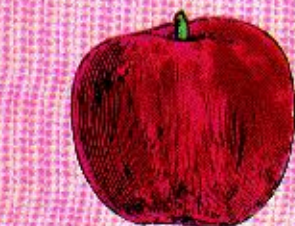


Bring the ghosts down the wall.

### FIRST MAZE

Your goal on the first two boards should be a perfect score of 29,400 points. Stay near the tunnels and avoid the ghosts until they have reversed twice—and then you're ready to go for points. The ghosts will not reverse again for 18 minutes unless you die.

To get 1600's on the top two energizers, go back and forth in the top tunnel until Red, Pink, and Blue are close together in the long top row. Gold won't chase you, but make sure she is reasonably close to the others. Then wait at point A for the ghosts to turn down as shown. Go through the tunnel and wait at point B for your 1600. Getting 1600's on the bottom energizers is even easier—just let all four ghosts follow you on the bottom row, grab the energizer, and reverse to eat them. Then use the temporary hiding spots to clear the remaining dots. Whenever the three smart ghosts (Red, Pink, and Blue) turn away from you, go to a safe part of the board and clear it off.



### SECOND MAZE

This maze is used on the orange, pretzel, and apple boards. Although a score of 77,600 points is possible after the apple board, the 1600's are more difficult on this maze; 62,000 is a good score for the end of the apple board.

The bottom two 1600's are similar to the first maze. Use the bottom tunnel to get Red, Pink, and Blue together after the two reverses. Then let them follow you to one of the bottom energizers, just like in the first maze.



Trap the ghosts at Point A.

Point A is the key spot for using the top energizers. With Red, Pink, and Blue close together, parking at point A will send them into a loop as shown. If Blue turns right out of the loop, move to the right and then back to A; she will continue to the right and miss you.



Get a 1600 at Point B.

Once all three monsters are in the top loop with Gold nearby, go down and grab the energizer. The monsters will reverse when they turn blue, coming right back towards you. Eat them all for a 1600, and then use point A to clear any remaining dots on the right side of the board. Point B can be used in a like manner to clear the left side and get a 1600 there.

### THIRD MAZE

The third maze is the easiest of the four mazes. From point A it is possible to set up the ghosts for 1600's on every corner. Then you can clear the rest of the dots with short patterns for each part of the board.



Point A, the most important spot on the third maze.

When you start the maze, don't go into the bottom loop right away. Go up to the tunnel and wait for both reverses. Go between point A and point B until Red, Pink, and Blue are locked up at point A. By moving back and forth between A and B, you can get the ghosts closer together. Point A is a permanent hiding spot. When you stop there with Red, Pink, and Blue anywhere in the top part of the maze, they will circle above you forever. Meanwhile, Gold will circle below you in one of two patterns. Make sure Gold is circling next to the middle box.



Getting a 1600 in the lower right.

It is best to go for all four energizers before clearing the dots, because Red will speed up after you have eaten most of the dots. At point A, wait until the three ghosts turn to go under the energizer, then go out the tunnel and wait under the top right energizer. The three ghosts will come right behind you and Gold will be near point B. Eat all four and go back to point A to set them up again. Set them up the same way for the bottom right energizer.

As soon as Red, Pink, and Blue turn above point A, go out the tunnel, down the right wall, and around the bottom right loop. Red, Pink, and Blue will come right behind you and Gold will be just above them.



Getting a 1600 in the lower left.

Use point B as a hiding spot to get the top left energizer. The ghosts will not turn right above point B automatically—you have to move right to force them to turn right. As soon as they turn, go out the tunnel and under the top left energizer to wait for them. Gold will be at point A and come right up to you for the 1600.

For the bottom left energizer, use point A again. This time get the red ghost slightly ahead of the other two. When Red turns above you by himself, go straight down and wait next to the energizer. Pink, Blue, and Gold will pass by and circle below you. They will not come up under you. Red will come right behind you. Eat him first, then go down to eat the other three.

Point C will help you clear the rest of the dots. Set up the ghosts at point A so Red is ahead of the other two ghosts. Go straight down and over to point C. Pink, Blue, and Gold will again go past you and circle on the bottom left. Now you can clear any dots to the right of you by leading or going around only the red ghost. Clear off as much as you can, then set them up again. It may take four or five passes to get all of the dots.

Patience is the key to the third maze. Always set up the ghosts so you are in control of them. Always wait at the tunnel for the fruit to come to you. Don't make the rookie mistake of chasing down a banana only to get killed doing it.



Pink, Blue and Gold go down.

#### FOURTH MAZE

In the fourth maze, it is important to keep moving. The middle of the maze is the safest—there are lots of turns and the four tunnels give you access to all four corners of the maze. Try to group the Red, Pink, and Blue ghosts together by making a loop around the tunnels. Keep them close behind by pausing at

each tunnel entrance. Then lead them around until you have a clear path to one of the corners with all three behind you. Here's a useful tip: watch what Gold does when you are leaving each tunnel, and then remember to avoid that path when you're in that area of the maze.

The energizers are harder to use for big points because of the long paths around them. Try to at least keep Red, Pink, and Blue close together for the 800's. Use the ghosts' recovery time to clear the remaining dots around the energizer. Remember to stay around the middle of the maze, especially at the end of the board when Red speeds up.



A fourth maze hiding spot.

The bottom right part of the maze is good for losing the ghosts behind you. Facing down will cause the three smart ghosts to go straight down past you on the left. Then you can go up to the top or follow them around the bottom. Point A is a good hiding spot, but not permanent. Blue will not always make the turn down, which forces you to move.

The top dots can be cleared by making large circles around the maze. Lead the ghosts around the outside of the maze by pausing near the corners and facing to the side of the maze. If they get separated, make the loop through the tunnels to get them back together. Don't let them take shortcuts through the middle to cut you off.

#### LATER MAZES

After the fourth maze, the third and fourth mazes alternate in groups of four. On board 17 the ghosts do not turn blue. Board 18 is the last time the ghosts turn blue. On board 21 and beyond, just as in Pac-Man, you move much more slowly than the ghosts. A few things to remember—you slow down when you eat dots, so clear the long straight paths early before Red speeds up. On the third maze, use the tunnel as an escape. On the fourth maze, stay near the center. You can turn faster than the ghosts can, and there are more places to turn near the middle. Use the energizers to make the ghosts reverse, and follow them out of the corners.

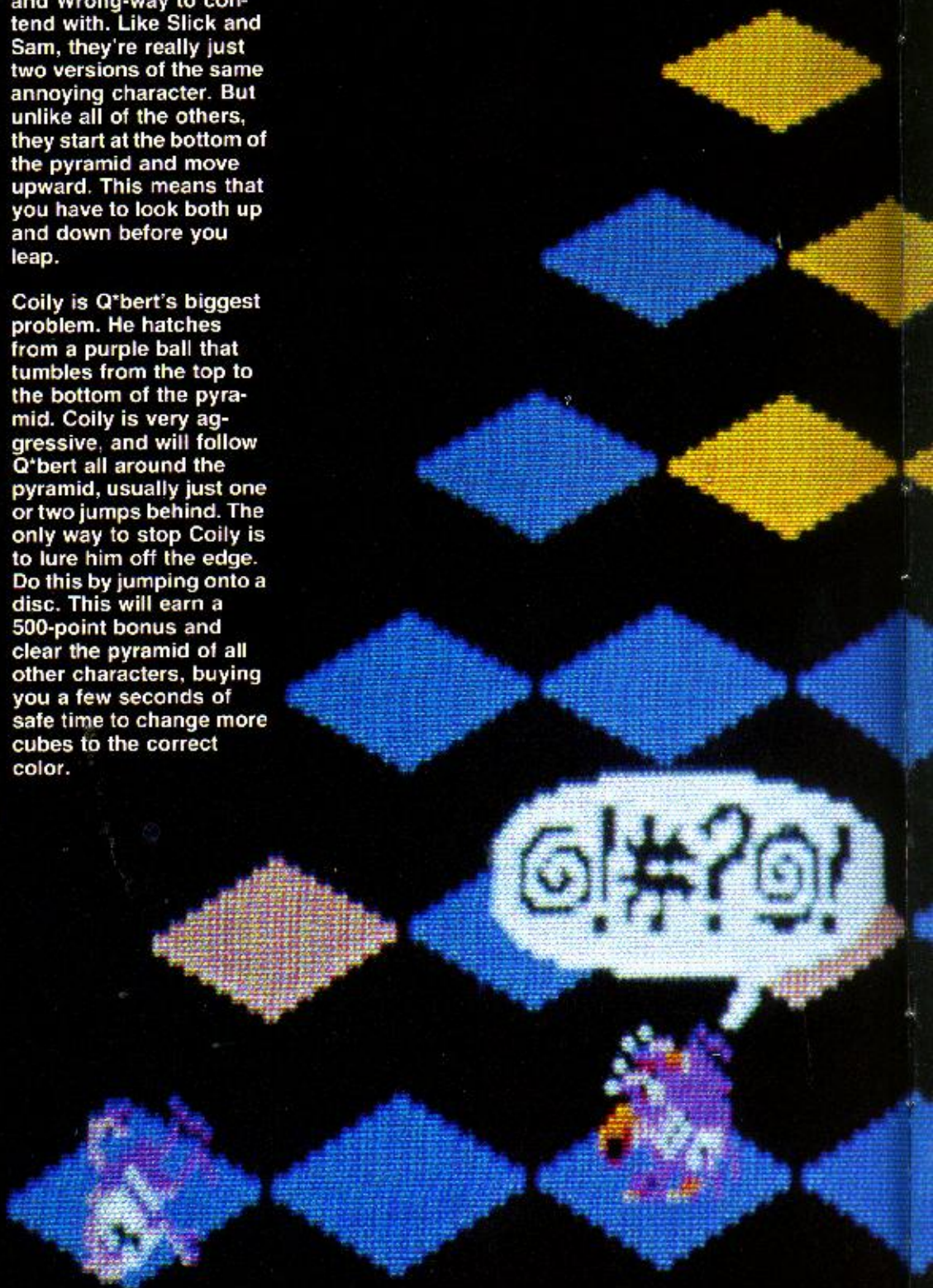
# Q\*BERT

Nobody likes to be told what to do, and Q\*bert is the first talking game that respects this fact. Rather than tell you something important or taunt you with insults and dares, Gottlieb's Q\*bert just randomly strings together a few sounds and blurts them out. Recognizable words and phrases can come out of his invisible mouth, but they're never intentional. There's an equal chance that he'll say your name, his name or your favorite four-letter word.

The pyramid on each round is made up of 28 cubes, and Q\*bert must change all of them to the same designated color before going on to the next. He changes a cube's color by jumping on it. Changing it to the correct color scores 25 points. On the highest levels of the game, cubes change color with each jump. For these levels, changing a cube to an intermediate color is worth 15 points. Leaping off the cubes on the edge will plunge Q\*bert to his death — unless he lands on a disc.

Starting with the third round, you'll have Ugg and Wrong-way to contend with. Like Slick and Sam, they're really just two versions of the same annoying character. But unlike all of the others, they start at the bottom of the pyramid and move upward. This means that you have to look both up and down before you leap.

Coily is Q\*bert's biggest problem. He hatches from a purple ball that tumbles from the top to the bottom of the pyramid. Coily is very aggressive, and will follow Q\*bert all around the pyramid, usually just one or two jumps behind. The only way to stop Coily is to lure him off the edge. Do this by jumping onto a disc. This will earn a 500-point bonus and clear the pyramid of all other characters, buying you a few seconds of safe time to change more cubes to the correct color.





The green ball, which first appears on the third round, is a great asset. Jumping on it will momentarily freeze all of Q\*bert's enemies. You will also score 100 points, but the freezing action is more important. Q\*bert is still free to move while the other characters are stopped, so you can change many of the cubes if you use the time wisely.

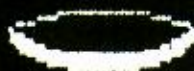
The red balls behave very much like the green ones; they land on the second level of cubes (from top to bottom) and randomly hop to the bottom. But these balls are deadly to touch. It's easy to remember the difference, though—green means go ahead, and red means stay away. This is true for all of the characters—if it's green, it's safe; otherwise it's deadly.

The colorful spinning discs are Q\*bert's escape hatches. When the going gets tough, you can jump on a disc and be safely transported back to the top of the pyramid. If Coily is following close behind, he'll fall to his death—with a realistic scream—when you land on the disc. Each disc can only be used once, so don't jump unless it's the only way out. A 50-point bonus is awarded for each unused disc at the end of a round.

Starting on the third level, Slick and Sam begin to appear. They are really the same character in two different guises; each will start at the top of the pyramid and meander down to the bottom, following a random path. Each time Slick or Sam lands on a cube, its color changes, and Q\*bert must go back and change that cube to the correct color again. The only way to stop Slick or Sam is to jump on him—this scores 300 points.



Q\*BERT



DISC  
50 points



COILY  
500 points



RED BALLS  
GREEN BALLS  
100 points



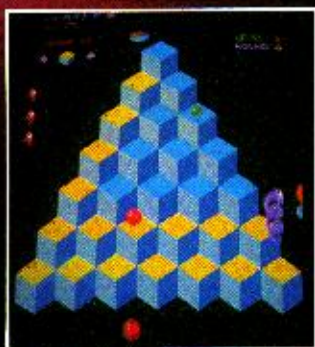
UGG



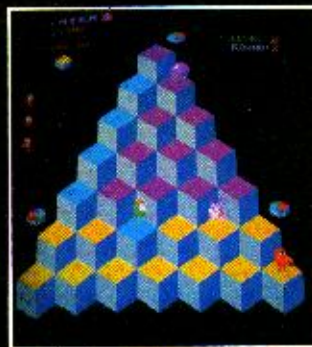
WRONG WAY



SLICK, SAM  
300 points



Fill the bottom on level 1.



Fill the bottom again on level 2.



Level 3.

The basic objective behind all of the Q\*bert strategy presented here is: get the lowest cubes first. There are two reasons for this. First, the discs always bring you back to the top of the pyramid, so the top cubes are easy to pick up last. Second, Slick and Sam start their dirty work at the top, making it hard to keep those cubes changed to the correct color.

Although your basic objective never changes, the exact procedure you must follow will change for each level. This is because of the way the cubes change color differently on each level. Levels 1 through 5 each require a slightly different approach, and then after level 5 the same strategy can be used indefinitely.

On level 1, start out by moving down the left edge of the pyramid as the player shown above has done. Then zigzag to the right across the bottom two rows.

Eventually, Coily (the purple snake) will catch up with you. When he does, take time out to lure him to one of the discs. Jump on the disc when Coily is one cube behind you, and he'll leap to his death, clearing the screen of enemies.

After you have eliminated Coily and the disc has brought you back to the top of the pyramid, move back down to the bottom and pick up the cubes you missed on the first pass. Coily will come out again soon, so use the other disc to get rid of him. Then move down the pyramid and hit all of the remaining cubes.

On level 2, you must land on each cube twice to change it to the proper color. Start out the same as level 1, but make sure to land on each cube in the bottom two rows twice. The best way to do this is to move slowly across by repeatedly jumping one cube forward, one cube back, and two cubes forward. As in level 1, Coily will start following you, so use the discs to get rid of him and finish off the rest of the pyramid. Slick and Sam will begin showing up to harass you, so jump on them whenever you can.

In level 3, the way that the cubes change color grows even more complicated. Each cube can take on one of two colors, and the colors alternate whenever you land on a cube. In other words, you must land on a cube an odd number of times to change it to the right color. If you land on a cube twice, you must jump on it again to change it back to the correct color.

Start out by moving down the left edge of the pyramid as in levels 1 and 2. Then move back up two cubes and begin zig-zagging across the bottom two rows. This will leave one of the left edge cubes the original color, as shown above.



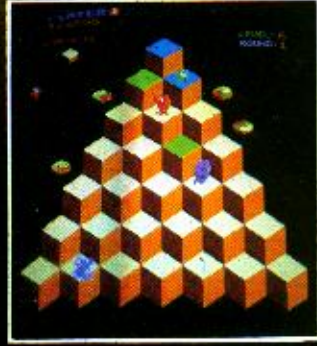
Fill the right side on level 3 and lure Coily to his death.



Fill both lower corners and wait by a disc.



Begin the lower left corner in this way.



Near the end of the board, wait here for Slick or Sam.

Once you reach the lower right corner, jump back and forth on the bottom three rows to get in step to move up the right edge of the pyramid. Then move up the right edge until you reach the third cube from the top. Wait there for Coily, and jump on the disc when he is one cube away. After the disc brings you back to the top, you can follow one short path to hit all seven remaining cubes.

On level 4, the cubes change color by a combination of the methods of level 2 and level 3. You must hit each cube twice, but hitting a cube that is already the proper color will change it back to the intermediate color. In other words, you must land on each cube an even number of times.

Start out by moving down the left edge and filling the lower left corner as shown above. Coily will come out very soon, so use the lower left disc to get away from him. Then repeat the same steps for the right side of the pyramid.

After the corners are complete, move through the remaining center cubes to change them to the intermediate color. Then move back through them to change them all to the final color.

At this point, Coily will be on your tail again. Use one of the top discs to get rid of him, and then quickly change the few remaining cubes to the final color.

Level 5 is the most difficult level yet. The cubes change color in the same manner as level 4, but the third hit on each cube will change it back to the original color rather than the intermediate color. In other words, you must land on each cube one less than a multiple of three times.

First move down the left edge to the lower left corner. Then move back up two cubes and back to the bottom again. Move up to the second row and begin zigzagging across the bottom two rows. This will put you in the position shown above.



Continue along the bottom.

When you get to the right corner, use the disc to kill Coily. Watch out for Ugg, who may enter from the lower right corner cube.

After you reach the top (via the disc), move down the right edge and cross through the center section twice. Stop on the center cube of the third row from the top, and wait for Coily to begin moving up from the bottom.

When Coily reaches the middle row, Slick or Sam will appear on one of the two cubes in the second row. Jump on him, and then wait for Coily to come close enough to be lured off the edge near a disc. Dump Coily off the edge, and you should be able to finish the few remaining cubes before he returns.

# ROBOTRON

Robotron is a favorite among experienced video players. It has all the appeal of the earlier Williams classics Defender and Stargate, but without the complex controls. It was the first game to introduce dual joysticks, giving the player excellent mobility and firepower. Blasting away at over 100 enemies in one wave is not uncommon, making Robotron the shoot-em-up player's dream.

Robotron is basically Defender played on the ground. The same "save the humanoids" theme exists. The difference is the many types of waves, each requiring a different strategy. Robotron is a deceiving game—there

are many enemies attacking at once, but they aren't very fast and most aren't very smart.

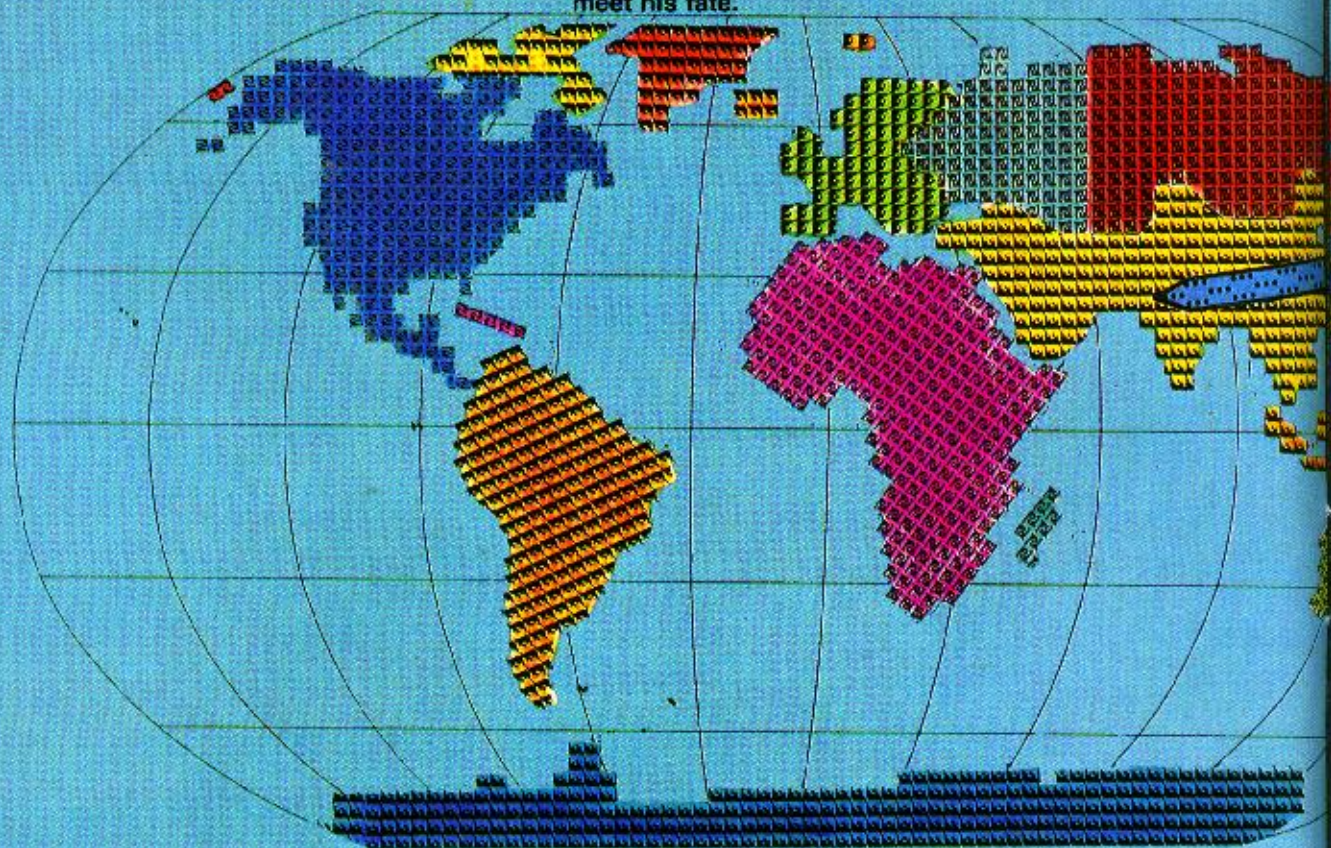
In Robotron, the player does not assume any fantasy identity, such as the commander of an inter-galactic spaceship. It's you against an assortment of computer-generated menaces in a fast-moving battle of futuristic forces. You appear in the middle of the screen and, due to an error in genetic engineering, you have acquired super laser powers. This is your only defense in the game in addition to your craftiness. You can shoot in any direction, and nearly all your enemies are destructible. Survival is your goal.

Surrounding you on the expansive field of black are your adversaries, a collection of high-technology monsters. Your assigned mission is to rescue a family of Humanoids—Mommy, Daddy and Mikie—from the stampeding robots. But saving the Humanoids is just one of your objectives. You get points for them, but your primary task is to clear the field of enemies.

At first you encounter stomping red and yellow Grunts. These creatures are destroyed by a direct hit from your laser. Worth 100 points each, they are also eliminated when they contact an Electrode. You can move behind a red or blue Electrode and watch a Grunt meet his fate.

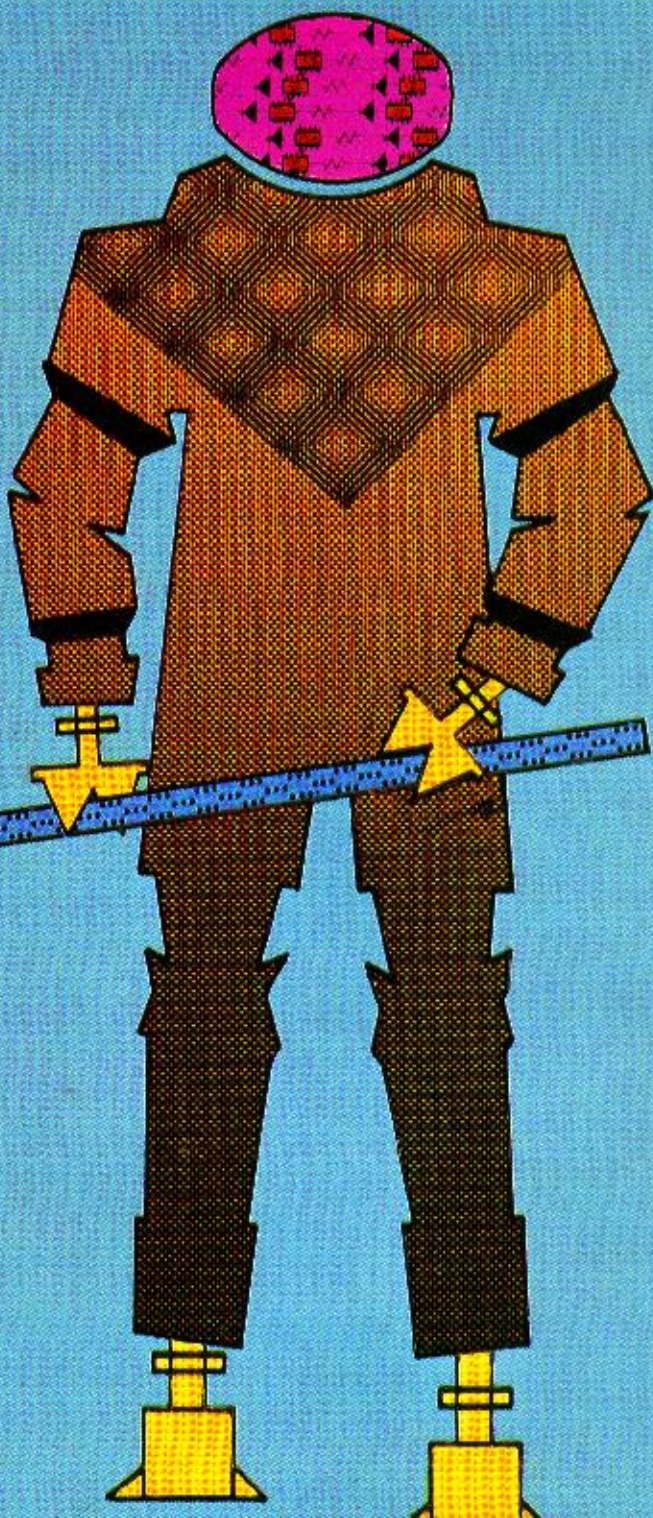
Constant fire is your best weapon against Electrodes and Hulks. The Hulks are not just your sole indestructible foe, but they are also the only enemy capable of totally destroying the Humanoids. Your laser can, however, push them away from a helpless victim. And watch for the 1000-point Spheroids. A collision with one can be deadly. Spheroids also produce Enforcers, worth 200 points each.

In wave 5, you will encounter Brains, clever creatures who fire Cruise Missiles. Kill a Brain and you earn 500 points. Brains also have the ability to transform Humanoids into mutants



called Progs. Progs are dangerous because they move erratically and if you run into one, you're dead. In advanced waves, Brains conspire with the Hulks, a perilous combination under any circumstances.

Tanks are worth 300 points. Your best bet is to destroy these dangerous machines while they are still Quarks. If you fail to do this, attack them as early as possible, while they are still developing. A fully formed Tank will fire cannonballs at you, deadly ammunition that can hit you directly or rebound off the wall of the screen.



PLAYER



HUMANOIDS  
1000 - 5000 points



GRUNTS  
150 points



SPHEROIDS, ENFORCERS  
1000 points, 150 points



HULKS



BRAINS  
500 points



TANKS  
250 points



QUARKS  
1000 points

Most waves have the normal assortment of Grunts, Hulks, Spheroids and Enforcers. A good strategy is to kill off the Grunts in the immediate area, shoot the Spheroids before they turn into Enforcers, then kill the remaining Grunts. The Enforcers are the biggest problem. They act much like Tanks and they are more deadly at long range. Both Spheroids and Enforcers have a habit of sticking to the corner or edge of the screen where they are most dangerous. Stay away from the edges of the screen when they hide in the corner. Enforcer shots move along the walls when they hit the edge of the screen. Beginning at wave 28, a few Quarks are thrown in each wave (including the special waves) to add to the fun. Handle the Quarks just like the Spheroids. Hit them before they change into the more dangerous enemy (Tanks). In all waves, your biggest source of points is picking up the Humans. Always go out of your way to pick up stray Humanoids.



Rescuing the last family of Humanoids in wave 20.

#### BRAIN WAVES

Every fifth wave is a Brain wave. The Brains are the most powerful Robotron enemy. They shoot deadly Cruise Missiles that follow you around. They also program your Humanoid friends into wild Progs that will kill you. Fortunately, the Brains only appear in Brain waves. It is nearly impossible to complete a Brain wave without losing a life. Therefore, the best strategy is to use your first man to collect as many Humanoids as possible. Collecting seven will earn you an extra life. Be aggressive, go for the Humanoids even if it is doubtful you will survive. It's amazing what you can get away with if you try.

When the Humanoids are gone, circle around the outside of the screen. The Brains should be your first priority. They are usually in groups, sometimes right on top of each other. Don't waste time trying to shoot the missiles. They are so unpredictable that it is better to avoid them. Using two or three lives in a single Brain wave should still be considered a success. There are so many Humanoids walking around that you can easily make up for the loss of lives.

There are four different Brain waves: a Mommy wave, a Daddy wave, a Mikie wave and a Family wave. The type of Humanoids in the Brain wave doesn't affect the strategy at all, but occasionally you can see strange things like Mikie riding piggy back on a Mommy, or twin Mikies holding hands.



Battling the Tanks on wave 12.

#### TANK WAVES

Beginning at wave 7, every fifth wave is a Tank wave, consisting of only Tanks and Hulks. The Tanks start out as Quarks, which bounce diagonally around the screen. Quarks don't shoot, but they move unpredictably. Each splits into Tanks that do shoot at you. At the beginning of a wave, you have a lot of room to move around. Immediately go for the Humanoids before the Hulks have a chance to kill them off. Get rid of as many Quarks as possible so you don't get a huge army of Tanks later.

Once the Tanks start to appear, head for the center—the safest place to be is right in the middle of the action. The Tanks and their shots move slower when you're closer to them. You also avoid the deadly Tank shots that you have to dodge on the edges of the screen. Tanks shoot large balls at you that can be destroyed by your shots. To be safe, try to shoot them at the same time you're trying to avoid them.

A Tank wave is a good time to take a break without losing a lot of lives because each Tank has a limited number of shots. When you get to the last Tank, let it use all of its shots. Once it's empty, all you have to do is avoid the Hulks and the one Tank. Warning: if you die, the Tank gets a fresh supply of shots.





Avoid getting trapped by the Hulks.

### HULK WAVES

Waves ending with 4 alternate between two different situations. One is a Tank wave with Spheroids added. The other has mostly Hulks and some Grunts and Spheroids. The Tank and Spheroid wave should be played just like a regular Tank wave. Spheroids and Quarks are very similar. They aren't very dangerous until they turn into Enforcers and Tanks. It's best to shoot them before they change, but try to get the Humanoids at the same time.

The other wave is a little different. The herd of Hulks roaming around makes it hard to move safely. You'll have to do some tricky maneuvering to avoid being trapped. Try to stay in the open areas and let the Grunts move into your line of fire. Remember, you can surround the Hulks and push them away with your shots. Most of the Humanoids are flattened immediately so this is not a very high scoring wave.



Fight your way to the edge.

### GRUNT WAVES

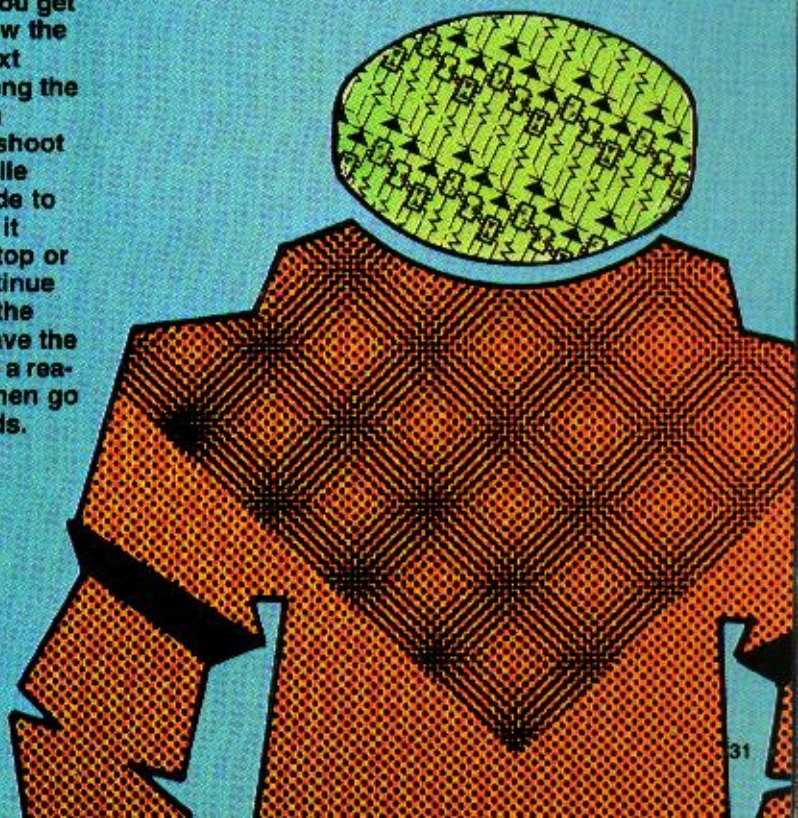
Every wave ending in 9 is the infamous Grunt wave. More enemies are on the screen at one time than in any other wave. It is not as difficult as it seems, for the Grunts are the weakest enemy. They relentlessly chase you without shooting. Eventually they do get faster than you so you can't take all day to kill them. The key to surviving a Grunt wave is to make a quick decision right at the start. Pick one of the four corners and clear a path to it, then decide to go to the top or bottom. Never go straight to the right or left or the mass of Grunts will cut you off before you can get to the other side. When you get to the corner, follow the side wall to the next corner, then go along the top or bottom. You should be able to shoot enough Grunts while going along the side to allow you to make it across the longer top or bottom walls. Continue in a circle around the screen until you have the Grunts cut down to a reasonable number, then go after the Humanoids.



Head for a corner.

Deciding which corner to go to is the tough part. You have to do it as the Grunts are materializing. Your decision should be based on two things: the number of Grunts in the way, and the Hulks in the area. Occasionally you get an impossible set-up, but usually there is some way out of the middle of the screen. Sometimes the Grunts will appear to cheat and jump on you right away. The Grunts "jump" instead of walking smoothly so sometimes they move right on top of you before your first shot hits them. If necessary, don't move until your first shot kills the Grunt in your way.

If you get really cocky, try your luck at difficulty level 9. The Tanks are unbelievably fast even on wave 7. On a normal setting, once you can handle each of the different waves after wave 28, you are ready to play indefinitely. You are a true Robotron here if you can survive all 255 waves (about 7,000,000 points). Wave 256 is wave 1 again so it's like starting over with whatever lives you have built up. At that point, it's just a matter of endurance.



# XEVIOUS

Xevious is one of those rare games that is able to combine excellent graphics and sound with fun and challenging game play. The graphics are as good as Zaxxon's or Tron's, but the game play is much better. The basic concept is simple, as in all shoot-em-up games—try to stay alive as long as possible, while racking up points by blasting anything that gets in your way. But Xevious adds a few new twists that make it far more interesting than a simple shoot-em-up.

The basic premise of Xevious is to fly a Solvalou spacecraft over various landscapes while 32 different enemies try to destroy you from the ground and air. The Solvalou can fly anywhere on the bottom half of the screen, an advantage when dodging enemy

shots. Your spacecraft is equipped with two weapons: a fire button, which shoots missiles straight ahead to hit air targets, and a bomb button, which drops powerful bombs on the ground targets. A bomb-sight moving across the screen in front of your ship shows where each bomb will land. If the cross hairs are over a ground target, the radar glows bright red.

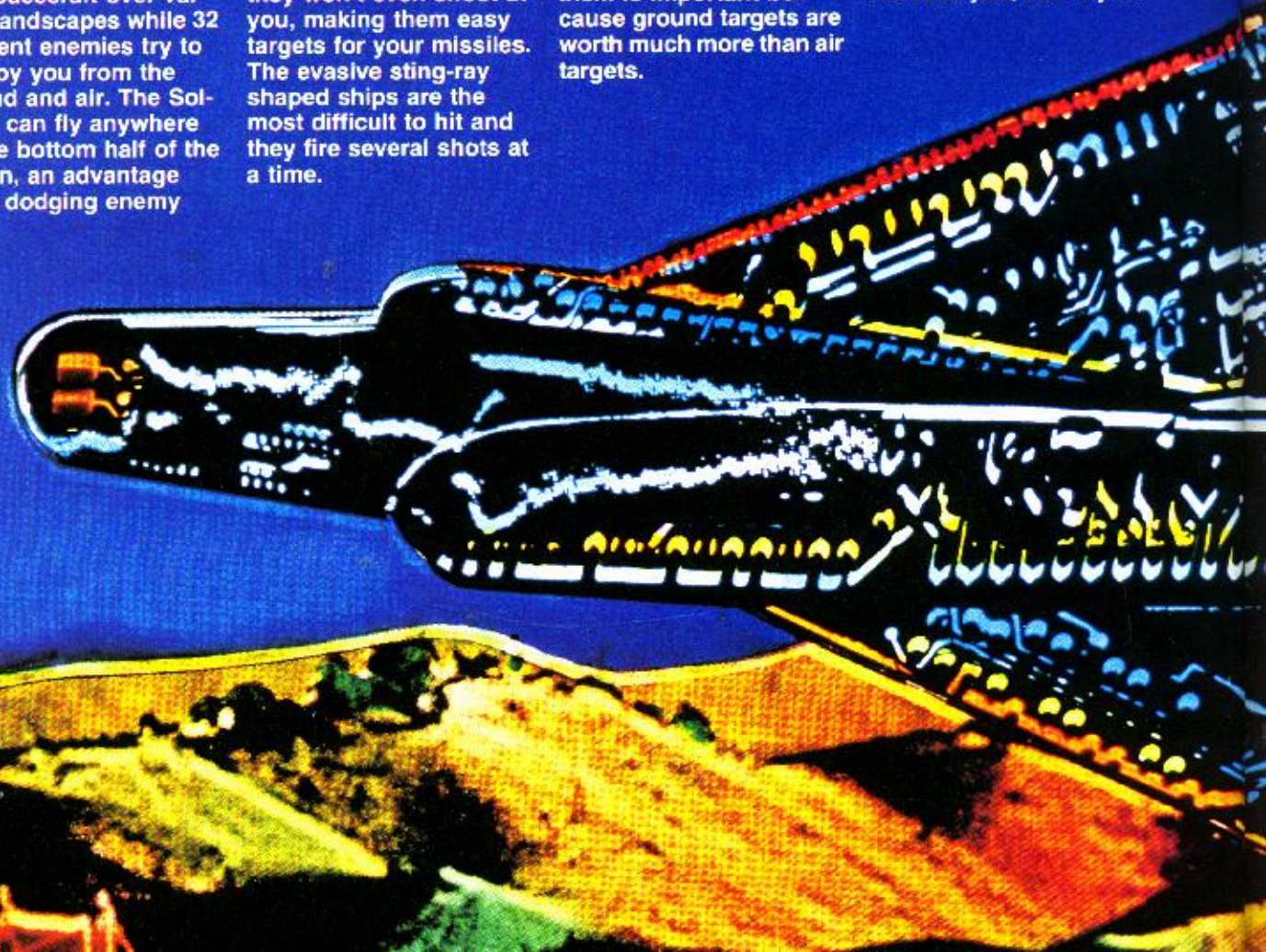
Several types of metallic enemy crafts will attack from the air, each with its own method. The first to appear are the rings, your weakest enemy. Often, they won't even shoot at you, making them easy targets for your missiles. The evasive sting-ray shaped ships are the most difficult to hit and they fire several shots at a time.

There is one type of flying obstacle that can't be destroyed by any weapon. The flying shields, rotating mirror-like walls that float through the air by the dozens, create a mobile obstacle course for your ship and deflect your shots away. Ships flying around the shields can be very dangerous; they will be protected from your shots.

The ground targets are pyramids or circular domes that attack by shooting up at you. They always appear in the same places, so anticipating their location is very helpful. Destroying them is important because ground targets are worth much more than air targets.

There are two types of moving ground targets: Mobile Ground Bases and Tanks. Mobile Ground Bases always appear in the same places and always move in patterns. They can and will shoot at you, so destroy them as soon as possible. Just place your bombing target slightly ahead of them in the pattern and drop a bomb.

Tanks behave a little more intelligently than Mobile Ground Bases. They only move north and south across the screen, but they sense your bomb dropping and react to it. They won't shoot at you, so they're





nothing more than a distraction and cheap points. If you must destroy them, use two bombs. They react only to one bomb at a time, and will move right into the second one.

The last type of ground target is underground domes. They are completely hidden from your view, and can only be destroyed by two bombs. The first brings the dome to the surface, and the second destroys it. Underground domes don't fire at you, but destroying them is worthwhile—you

get 2000 points for bringing one up, and 2000 more for destroying it.

The most awesome of the Xevious forces is the immense Mother Ship. A low hum warns you of its approach. The Mother Ship flies at a lower altitude than your Solvalou, so firing at it is useless. Only a direct bomb hit on one of its glowing hatches will do any damage.

Black balls are the last—and perhaps the most annoying—Xevious adversary. There are three different types and they appear on the screen and then explode into bullets if you don't destroy them quickly enough. The first

type is the smallest and most troublesome. These appear out of nowhere and then disappear quickly, leaving bullets all across the screen. The larger black balls appear later in the game. One type stops near the bottom of the screen and explodes into a semicircle of shots, which are hard to avoid because they appear so suddenly. The other type of black ball is the largest and most devastating. It stops higher up on the screen and then explodes, spraying shots in a complete circle. The only effective way to deal with any black balls is to shoot them before they explode.

In addition to all of these various types of opponents, you have one other concern in Xevious—the weather. Periodically, you will encounter a snowstorm, where small crystals fly diagonally through the air. These crystals can destroy your ship, so stay near the bottom of the screen and shoot any crystals that come toward you. The storm never lasts long, so just try to survive it, rather than chasing down the crystals.



SOLVALOU



ANDOR GENESIS MOTHER SHIP  
4000 · 8000 points



GARU ZAKATO ENERGY  
BOMBARDERS  
500, 1000 points



SOL CITADELS  
4000 points



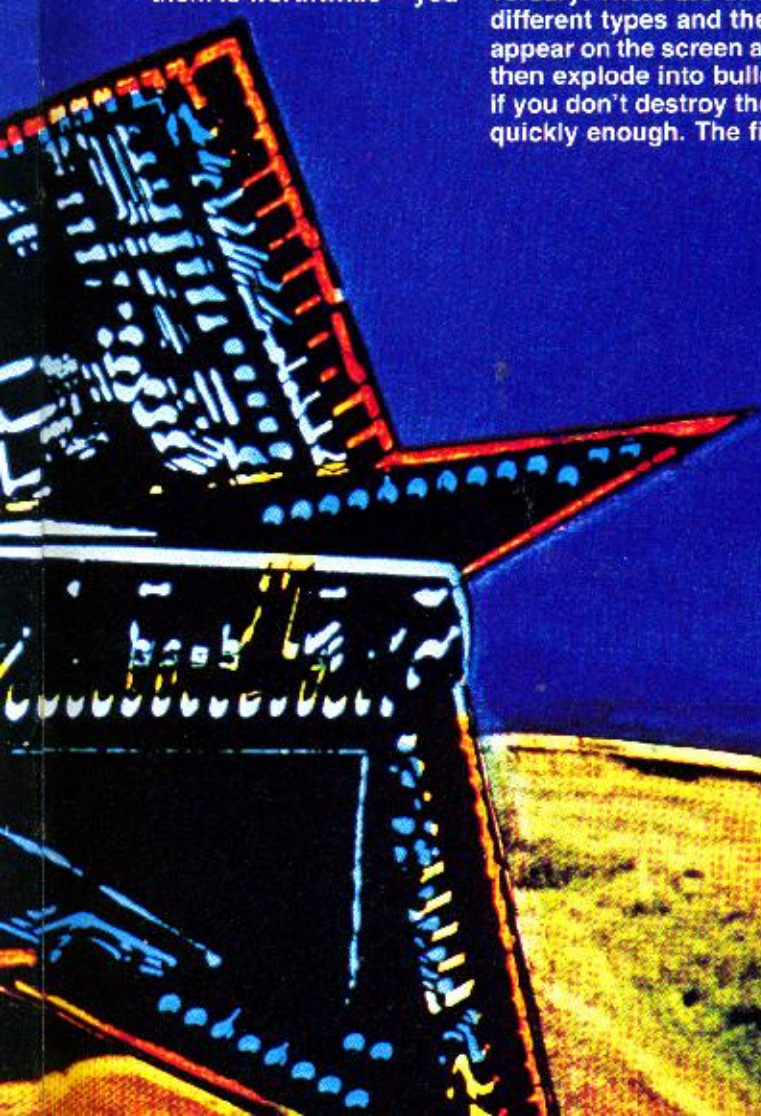
ZOSHI DEATH SQUAD  
150 points



D-PROGRAM ROVER  
800 points



BACULA RESISTOR SHIELDS



Some of the best—and most important—features of Xevious are carefully hidden in the game. Secret targets hidden at certain points in the terrain can earn you extra turns or thousands of points. These targets always occur in the same places, but the only clue you'll have to their position is a red glow in your bombing sights when you're directly over them.

One type of hidden target is the flags. Each flag lies along a horizontal line across the terrain, and can only be uncovered by dropping a bomb directly on it. Since the flags are not always at the same points on the lines, you must drop bombs all across the screen to find them.

When a bomb hits a hidden flag, the flag will suddenly appear with a small S next to it. Exposing the flag earns you 1000 points, but the real value of the flags comes when you pass over one—an extra turn is awarded for each flag you pass over.



The first flag in the river.

The first flag can be found along the leading edge of the river shown above. It usually is hidden in the left half of the screen, so start bombing in the center and move

out to the left. Drop a bomb every  $\frac{1}{2}$ " until you see the flag, and then pass over it.



The second flag near the inlet.

The second flag lies along a line through the mouth of the inlet shown above. It is usually found in the right half of the screen, so start at the center and bomb to the left until you uncover it.



The third flag at the pier.

The third flag occurs in the large ocean after the Mother Ship. It lies along a line through the end of the longest pier. It can be anywhere on this line, so start bombing at one edge of the screen and continue all of the way to the other edge. If you drop a bomb every  $\frac{1}{2}$ ", you'll have just enough

time to search the entire width of the screen before the scrolling action moves your Solvalou past it.



The fourth flag below the tail feathers of the bird.

The fourth flag is hidden at the bottom of the tail feathers of the bird shown above. The bird shows up in the terrain during the second set of rotating walls.

Another type of hidden target is the Sol Citadels, which are worth up to 4000 points each—2000 points for uncovering one, and 2000 more for destroying one. Like the flags, Sol Citadels will cause a red glow in your bomb targets even though they are not visible on the screen. A direct hit by a bomb will uncover a citadel, and another bomb hit will destroy it.



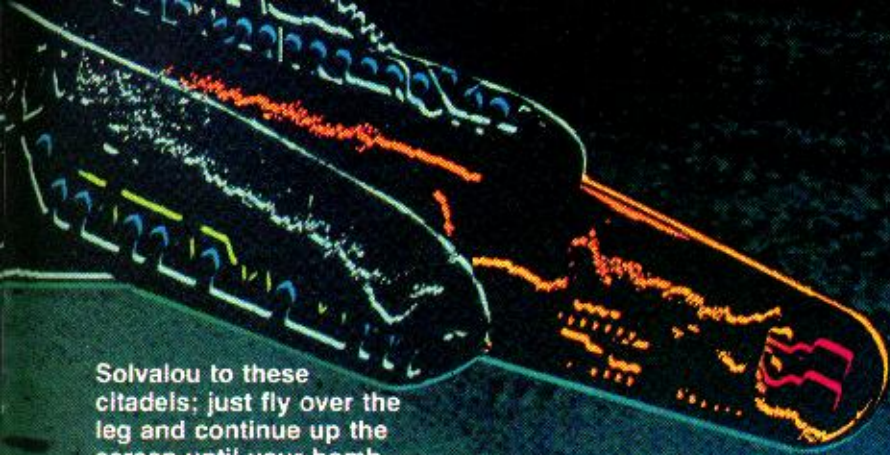
First group of four Sol Citadels.

The first group of Sol Citadels can be found in the small clearing shown above, just before the second Mother Ship. There are four citadels in this group, so it's worth 16,000 points. A crystal snowstorm always occurs at this point in the game, so take that as your cue to watch for the telltale glow in your bomb sights. When you reach the citadels, drop four bombs to uncover them and then four more bombs to destroy them.



The only group of eight Citadels.

There are eight citadels in the second group, which occurs just after the third large bird that appears in the terrain. You can use the bird's foot and leg to guide your



Solvalou to these citadels: just fly over the leg and continue up the screen until your bombsights glow. This will be the lower left citadel in the group. Drop a bomb on this one and then move to the right to find the other seven.

It is not possible to uncover and destroy all eight citadels in this group before they scroll off the screen, so you must decide how many to attempt. You can either uncover all eight and then bomb as many as possible (up to four), or uncover six citadels and destroy all of them. Either one of these approaches will earn you up to 24,000 points, the maximum possible on this group. Don't be discouraged if you get less than this total; it's very hard to get 24,000 on this group.



The next group of Citadels.

The next group of citadels is much easier. There are only four again, and they come at the end of the third set of flying shields (rotating walls). Watch for where the two

roads come together just before the forest, and drop your bombs along the top edge of the slanted section of roadway. As in the first group, uncover all four citadels before destroying them.



The last group of four Sol Citadels.

The last group of Sol Citadels is hidden along the left edge of the screen near the first river. The best way to anticipate the approach of this group is to watch for a conspicuous formation of defense sites and domes that comes shortly before it. The domes and defense sites are clustered in two groups of four along both sides of the road shown above. This is a very dangerous area—the defense sites fire rapidly—so be careful not to forget about the Sol Citadels because of all the other action on the screen.

After the fourth group of citadels, your score will be over 300,000 points. This brings you close to the end of the terrain, which occurs around 400,000 points. After the end of the terrain, the game starts over again with all of the hidden targets in the same locations again. But before you can go back to the beginning, you must pass through the biggest challenge in the game—four sets of defense sites and domes that will attack you with a barrage of shots that is almost impossible to survive. Although the folks at Atari probably thought this section was so hard that players would never get through it, it is possible to survive if you plan everything out.

Start with your Solvalou all the way forward on the screen, so that you can drop back and continue firing when the defense sites come on the screen. This will give you extra time to hit all of the ground enemies that are attacking.

It's best to move through each set of ground enemies in a sweeping motion that brings you to the right edge of the screen and then back to the left. You must slip in between many of the shots fired by ground enemies while you do this, and at the same time you must destroy enough of them to allow you to continue moving forward. The sets are a little over one screen length apart, so there is just enough time to get back in position and move forward after each set.



The Andor Genesis Mother Ship.

# FRONT LINE

The idea behind Front Line is simple: maneuver your soldier through a battlefield, fighting off enemy soldiers, boulders and tanks as you go, until you reach the enemy fort.

Your soldier is outfitted with a gun, grenades and helmet. The gun is controlled by an eight-direction knob. When your gun is aimed where you want, push the knob and the gun will fire. This knob also controls the direction in which a grenade will be thrown, although another button controls the actual throwing of these grenades.



Launching a grenade to kill the enemy.

The game begins with your soldier in the middle of a wide pathway. There are some bushes in the way and you cannot go off to the sides. Enemy soldiers approach from the forward edge of the screen. As your soldier moves forward, you should have the gun aimed toward the top of the screen, killing enemy soldiers as they appear. Watch out for land mines throughout the game.

If a bush lies between you and the enemy soldiers, launch a grenade in their direction. Sometimes an enemy soldier will make a break for the side of the screen and hide behind the bushes there. Use an angle shot to kill him if this happens.

Sometimes the enemy fire will halt your forward advance. When this happens, a boulder will bound out from one of the sides of the screen and try to crush your soldier. The boulder can be avoided by backing up out of its way or blowing it up with a grenade.



Coming to the first tank.

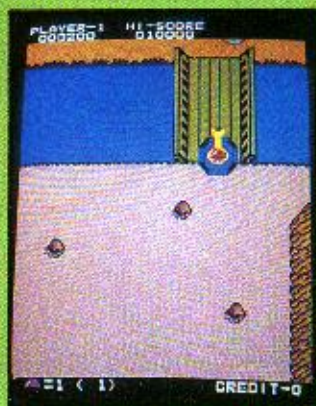
Soon you will come to a clearing. Just beyond the clearing there is a tank. Fight your way toward it and stand next to it to draw in the enemy troops. When they are close, jump into the tank with the dual purpose grenade-jump button and kill them.

When all ground troops have been killed, or have run away, your enemies will send in the tanks.

The tanks your soldier can use are blue and are either small or large. The small tank is fast and can fire rapidly, but the large tank can fire farther and is more heavily protected against enemy attack. If your soldier is in a small tank and it is hit, you must jump out immediately to save him. If you've chosen a large tank, you also jump out immediately when shot, but if the large tank is hit by a small one you will be able to jump right back in without it blowing up. If your large tank is shot by a large enemy tank you must leave it and search for another. When you've been forced out of a tank and left to find another, enemy tanks will still attack and you will need to use grenades to blow them up while you are searching.

At first there are clear sections and grassy patches of ground to drive across. Try to remain on the clear sections, for the tanks are slower and more sluggish when moving across the grass.

Soon you will reach a short grassy section, beyond which the ground is pink and strewn with rocks. The small rocks can be shot, but not driven over. The large rocks will block your shots and also cannot be driven over.



One of the two bridges spanning the river.

Next you will encounter a river with two bridges spanning it. Try to kill the enemy tanks on the other side of the river before attempting to cross it. On the other side are small walls your tank must maneuver through. After a while, the edges of the play field will begin to narrow. When you notice this, move to the left side of the screen and continue forward. The enemy fort is now close at hand. When it comes into sight keep going until your tank is next to one of the small pink brick walls to the left of the fort. This wall will protect you from enemy fire from the fort. Aim down and hunt enemy tanks that enter from the bottom of the screen until your score is over 9000 points. Then let your tank aim straight to the right and throw a grenade behind the walls of the fort. This will get you 1000 points and put you over 10,000 where you earn your only extra soldier.

After this you will begin again on the wide pathway. Because enemies become more valuable each time you blast the fort, it is not practical to hunt enemy tanks the first time through after you have earned your extra soldier. You should go at least to the third fort before you start hunting in earnest.



PLAYER SOLDIER



ENEMY SOLDIERS  
100 points



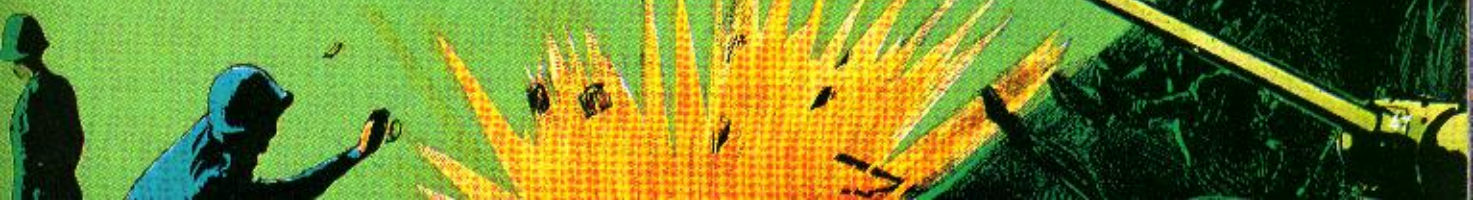
SMALL TANKS  
100 points



LARGE TANKS  
100 points



BOULDERS  
100 points



# POLE POSITION

Pole Position is the best driving game yet. Its graphics, sound, and driving realism outclass even Turbo. The Fuji Speedway is the setting for an eight-car race with you behind the wheel of a Formula 1 racer. Your goal, as in all driving games, is simple—race around the track as fast as you can. You compete with seven other drivers, but time is your real opponent because the other drivers race like rookies.

The game is divided into two parts: the qualifying lap, and the race itself. The qualifying lap is the most important part of the game, because your qualifying time will determine your starting position for the race. The time needed to qualify is determined by the game's settings (73 seconds is standard). If you don't qualify, you can't compete in the race.

You start the qualifying lap by yourself, but will encounter other cars on the track later. Drive the course just as you would in the actual race, as described below. If you beat the time needed to qualify, a synthesized voice will commend you on your driving skill. Then, depending on your actual qualifying time, you will be assigned a position from first (pole position) through eighth for the start of the race. Earning the pole position (58.5 seconds on a standard machine) is very helpful: it assures you of starting the race in first place, and earns you a 4000 point bonus in addition to the 10,000 points received for the qualifying lap.

Once you have qualified for the race, your car is placed in its proper position at the starting line. The race will last up to four laps (some machines limit it to three), depending on how well you do. As the starting lights count down to green, you should be in low gear with the gas pedal to the floor.

As you accelerate away from the starting line, shift into high gear at around 100 mph. You should then stay in high gear for the entire race, unless you crash and need to start again. Try to move out in front of the pack before the first turn; if you started in back, pass between the cars in front of you.

Go into the first turn on the left side of the track and then cut to the inside. With perfect timing, you can take the first turn at full speed without skidding. As you come out of the turn and pass the Namco sign, you'll see cars ahead of you. Pass them on the shoulder if necessary, but don't slow down.

Next is a sharp right turn marked by a Dig Dug sign, off the left side of the track. Stay to the left so you can prepare for the hairpin turn which follows immediately. It's too sharp to take at full speed, and there are usually other cars in front of you. The best way to take the turn is to cut the corner by driving off the left side of the track, being careful not to hit the Pole Position sign on the left shoulder. If you have trouble with this, the next best approach is to let up on the gas and stay on the road. Never shift to low gear or use the brakes, but you must slow down if you stay on the road; otherwise, you'll slide off the track and hit the Centipede sign on the right side.



The next part of the course is a long, sweeping right turn flanked by numerous signs and billboards. Stay as far to the inside as possible so you can see more of the track in front of you and avoid blind crashes. A Pole Position sign on the right will mark the start of the final straightaway into the finish line.

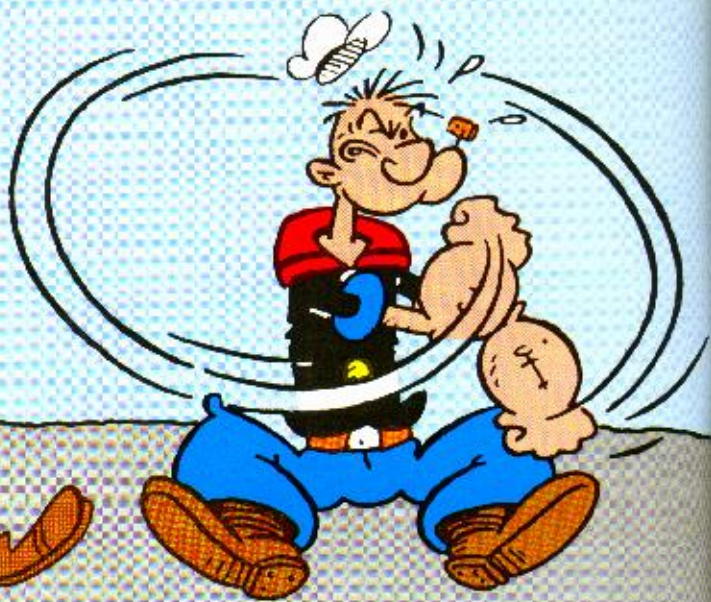
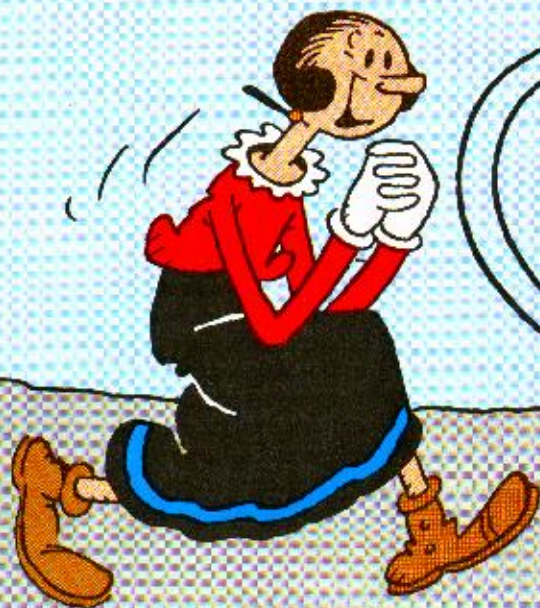
The entire time you're racing, a timer is counting down how many seconds you have left. If you reach the finish line before your time runs out, you're awarded an additional 45 seconds of racing time to try to complete another lap. You'll continue racing until you fail to complete a lap in the allotted time or you complete the maximum number of laps (3 or 4, depending on setting).

Whenever you play, aim for the perfect game: starting in pole position and driving the entire race without crashing. It takes precision driving and fast reactions, but it can be done. And if you get off to a bad start, try a slow trip around the track to read the colorful road signs—they're hard to appreciate at 185 mph.



Top: Beginning the race.  
Middle: Anticipating the big turn.  
Bottom: Watch those signs!

# POPEYE



The game of Popeye is an animated competition between Popeye the Sailorman and Brutus. Both of them are vying for the attention of the thin and lovely Olive Oyl. You control Popeye with a four-direction joystick and punch button, and must avoid Brutus and the Sea Hag while pursuing Olive Oyl.

If Brutus harasses you, cross through the edge of the screen from left to right and wait for him to stop directly under the bucket. Hit the punching bag at this point and the bucket will fall on his head, rendering him helpless for a while. This will give you 2000 points and some time to catch a few more hearts.

higher hearts can really help your score. And because extra turns are only awarded for a very high score (from 40,000 to 80,000 points), you should be as greedy as possible.

Spinach can only be used once per screen, and it is not restored when you lose a turn. Don't use it too early; pick up about two-thirds of the total number of hearts, and let as many hearts as possible fill the air before getting the spinach.

ful, because once the bucket comes off he can easily crush Popeye.

To make up for his lumbering slowness, Brutus is capable of throwing beer bottles at Popeye. Rather than avoiding this, you should try to force him to throw bottles as often as possible (he can throw four at once), so you can punch them for extra points. Remember—it pays to be greedy in this game.

The Sea Hag can also throw bottles, although she only throws one at a time. The Sea Hag materializes on the edge of the screen for a moment, chucks a bottle, and then disappears. Oddly enough, she can be on both sides of the screen at once. So if you get caught between two Sea Hags or between Brutus and a Sea Hag, you'll have to be fast on the punch button and joystick to survive.

As in real life (well, cartoon life) Popeye can grow stronger by eating spinach. A red can of spinach moves between the second and third levels of the screen, and you can make Popeye eat it by punching the can. Popeye will then turn red and become more powerful than Brutus for about 10 seconds. If you punch Brutus during this time, he falls into the sea and you are awarded 3000 points.

Brutus will eventually recover, so make good use of this time by catching as many falling hearts as possible. They're worth twice as much when Popeye is under the influence of spinach, so catching some of the

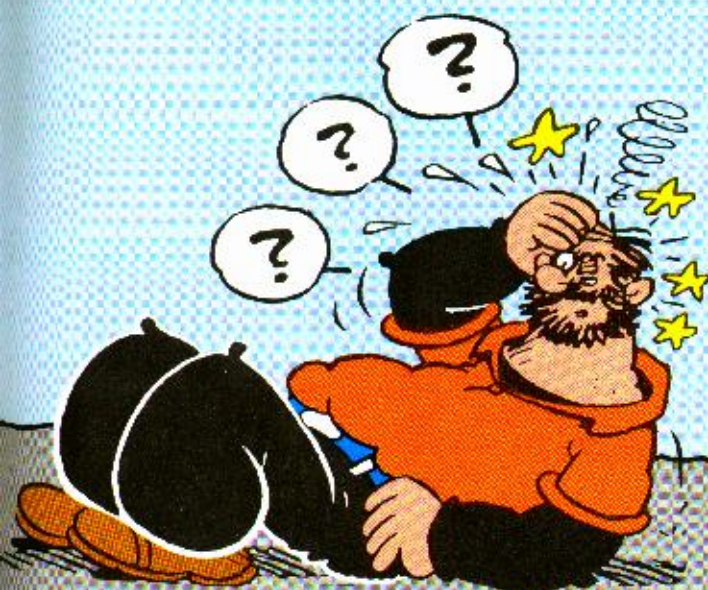
If you're willing to take a risk to get 4000 points instead of 2000, don't use the punching bag right away. Wait until you've punched Brutus (best done while under the influence of spinach), and then position Popeye next to the punching bag. When Brutus climbs out of the sea, he will cross under the bucket on the lowest level. With some practice and timing you should be able to drop the bucket on his head for 4000 points. Note: touching Brutus while the bucket is on his head is not fatal. But be care-



The 4000 point bonus on screen.

On the first screen, Olive Oyl stands at the top of the screen and tosses hearts down to the bottom, hoping that Popeye will catch them all. If a heart reaches the bottom of the screen, you have about 10 seconds to pick it up before it breaks, costing you one turn. Try to catch the hearts as high up as possible, since they decrease in value as they get closer to the bottom.





POPEYE THE SAILORMAN

BRUTUS  
2000 · 4000 points



across the platform, you should try to punch the buzzard as many times as possible, for 1000 points per punch.

After the ship screen, all three screens are repeated in the same order, but care must be taken because there is a new enemy to be reckoned with—deadly bouncing skulls. The Sea Hag throws skulls out from the upper right corner of the screen, and they must be punched while they are bouncing upward. You must also make sure that no skulls are directly above Popeye, because they drop down a level or two and hit him on the head.

Although the skulls complicate things, the basic strategies described above for the first three screens will still work. Just continue to avoid Brutus and the beer bottles, and stay greedy—it's a long way between extra turns.



OLIVE OYL



HEARTS  
50 · 1000 points



SWEE PEE  
500 · 1000 points



SEA HAG



BUZZARDS  
1000 points



Going after Brutus on screen 2.



Remain on top as long as possible.

Play the second screen much like the first one. Although Olive Oyl is dropping musical notes now, the real difference on the second screen is the layout, with Wimpy on the plank in the lower corner. If Popeye jumps off the second level onto this plank, he will be catapulted up to the third level. With careful timing, you can even make Popeye leap all of the way up to the fourth level, where Swee Pee is waiting on a balloon platform. Touching the bottom of Swee Pee's platform will earn you 500 points (1000 points while you're under the influence of spinach).

The setting for the third screen is a ship, with a sliding platform on the highest level. At the beginning of the board you should be able to slide Popeye across this plat-

form several times, catching the letters of the word H-E-L-P that Olive Oyl is letting fall directly above.

Every time Popeye catches a letter on this screen, one rung is added to a ladder going up to Olive Oyl. When the ladder is complete, Olive Oyl is saved. This is the hardest screen of all, because a large number of letters are needed to finish the ladder and save Olive Oyl. On all screens, Brutus can reach up from underneath or bend down from above to get Popeye. He can also bound down from higher levels to lower ones—be careful that you're not underneath him.

A buzzard will occasionally enter from the left side of this screen. While sliding back and forth

# TIME PILOT

Time Pilot has you flying through the centuries, fighting enemy aircraft along the way. Time is divided into periods, or eras, each one with appropriate enemies. In all, there are five eras to contend with, beginning with 1910, where the enemies are mere Biplanes, up through the present and beyond to 2001. After a certain number of aircraft within a period are killed, a large Mother Ship distinctive to that time will fly onto the screen. It will take several shots to kill this ship, but when you have, your plane will be transported through time to the next period.

There is a scale at the bottom of the screen that lets you know when you've killed enough of the enemy to expect the Mother Ship. In the 1910 period, your enemies appear as Biplanes, and the Mother Ship is a Blimp. In the next period, 1940, you are battling Prop Fighters and a large Bomber is your ultimate enemy. By the time you reach 1970, you are fighting Helicopters, replaced by Jet Fighters in the 1980 period. Another large Bomber is the Mother Ship here. As you pass into the future, the year 2001 pits you in battle against Flying Saucers, the Mother Ship being an even larger Saucer.

Each period demands specific strategies because the various enemies behave differently.



Flying straight up through the first time period.



Trying to save a Parachute in the 1940 time period.

The Biplanes in the first period can only shoot and bomb. The bombs drop from the Biplanes and fall to the bottom of the screen. A good strategy is to fly toward either of the upper corners of the screen. Since your plane is in the center, you reduce the chances of being bombed and have more time to react to enemies appearing on the edge of the screen in front of your plane.

Watch for formation attacks and falling Parachutes. If all the enemies in a formation attack are killed you earn 2000 points. Parachutes are important: the first is worth 1000 points and the value increases by 1000 points with each one until the maximum value of 5000 points is reached on the fifth Parachute. From that point on, all Parachutes will be 5000 points unless your plane is destroyed or you kill the Mother Ship and go on to the next period.

In 1940 Prop Fighters are your enemy. They can only shoot, so flying toward any corner is good, but the upper corners are preferred because Parachutes fall slowly downwards and this will make it easier to pick them up. Once again you should watch for formation attacks worth 2000 points. Another enemy to watch for in 1940 are the dark brown Bombers that will fly horizontally across the screen. They are worth an easy 1500 points, but remember that it takes three shots to kill them.





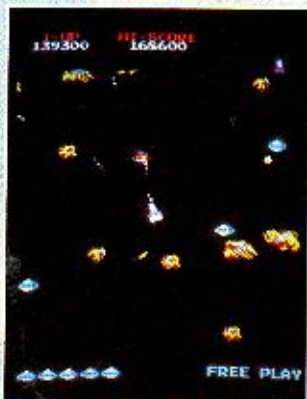
In 1970, Cruise Missiles begin chasing your plane.

Your mission begins to get dangerous when you reach 1970. The enemy Helicopters are capable of launching Cruise Missiles and since linear flying becomes impossible it is now hard to pick up many Parachutes. The best way to deal with Cruise Missiles is to shoot them. You must be bold when they come in behind your plane and turn around and shoot them. A great deal of circling is needed to survive these later periods.



Flying in circles to kill the Jet Fighters in 1983.

In 1983 your enemy has developed faster Jet Fighters and more accurate Cruise Missiles, but circling and reversing directions is still the best way to stay alive.



Fighting to stay alive in 2001.

In 2001 you encounter the most hectic of all the time periods. The Flying Saucers have two new types of weapons—one that acts much like a Cruise Missile in that it can change directions, and another that follows straight lines. But both of these weapons can be shot and destroyed. If you survive 2001, you will be sent back to 1910 to do it all over again.

Time Pilot, as with many video games, has a hunting strategy associated with it. You can stay in one time period without killing any of the enemies and continue to pick up Parachutes. The 1940 period is the best in which to hunt Parachutes.

Another slower but safer hunting strategy is to stay on one of the first two waves shooting the planes as they come. When the Mother Ship appears, ignore it and keep going after the planes. This isn't really playing the game, but it's good practice and can last a long time.



PLAYER SHIP



PARACHUTES  
1000 - 5000 points



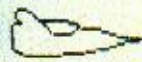
BIPLANES



PROP FIGHTERS



HELICOPTERS



JET PLANES



FLYING SAUCERS



# ZOOKEEPER

In this game, you (Zeke the Zookeeper) must control a menagerie of wild animals and keep them behind the walls of a zoo. You move Zeke with a four-direction joystick and a jump button. The walls of the zoo are built beneath Zeke's feet as he moves around the outside of the zoo with one cage in the center. In early rounds, the wall is partially built when you start, but in later rounds Zeke must build the wall from scratch.

Zeke's movement on most rounds is restricted to the perimeter of the zoo. Near the top of the screen is a timer which controls a series of bonus objects appearing along the walls. As time runs out the line becomes shorter and it will touch an object placed along it. When it does, that same object appears somewhere along the walls and can be picked up for bonus points. If the

timer reaches the next object on the line before Zeke has picked up the first, the first one will disappear. Besides the bonus objects, there is one other thing that will appear on the walls. This is a net that can be used to capture any of the animals that escape. The net only lasts for a short while, and a warning sound will alert you before it disappears.



Another busy day at the zoo.

At the beginning of the rounds, take note of which direction the animals are moving (clockwise or counterclockwise). Then go the opposite direction, so that they will be coming towards you and you can jump them.

In the first round one animal is loose and running along the walls. If you don't jump it and the animal kills you, you will be given another chance because you obviously need one. It's not a bad idea, then, to pick up some of the bonus objects and then intentionally kill Zeke by running him into an animal. Then you'll get to try the board over again from the beginning and pick those points up for a second time.



Jump on the ledges to reach the top.

The second round is similar to the first; but the third round is a series of horizontally moving ledges. The top ledge does not move, and on it sits Zeke's girlfriend and a tree. A monkey is hanging by its tail from the tree, hurling coconuts into the air. Zeke begins from the bottom and jumps up the ledges until he reaches the top one with his girl on it. Some of the ledges have bonus objects on them, which are worth more as you get higher. Just landing on a ledge will score you points. Make sure Zeke doesn't run into any coconuts, and that when he reaches the top he touches the girl. The round is not over until he does so, and there's still a chance of being hit by a coconut. If Zeke lands right on the girl you won't get points for landing on the ledge; and since it's the highest ledge (and worth the most), you should try to avoid landing right on top of the girl when you get there.

As soon as this round begins, the bottom ledge that goes all the way across the screen begins moving toward the right. If on Zeke's way up you make a mistake and he falls, you have to guide him to one of the lower ledges to save him. If he falls all the way down and goes through the hole that the bottom ledge is creating, you will lose a turn.

On Zeke's way up watch for coconuts. They move very slowly, and if one is bouncing on the ledge that Zeke is on you should move him as soon as possible. If another ledge is passing overhead at this point it is impossible to go up so you should send Zeke down.

The game gives you unnatural control of Zeke's jumping ability—you can direct where he moves even while in midair. Always try to take full advantage of this. On the rounds where Zeke is building walls to cage the animals, the big points come from jumping animals. On higher rounds, millions of points are possible just from one jump. On lesser attacks than this, it's possible to begin the jump, pull back on the handle halfway through, and land Zeke back where he started, still getting the points for the try. And since Zeke is back where he started, he can attempt the jump again.



Climb the last stairs to win a bonus Keeper.

Extra turns can be won on special rounds. Zeke begins at the lower left and you must move him to the right, jumping animals and one cage to reach the stairs. Once up the stairs, go to the left, jumping more animals and another cage to reach yet another staircase. If you get Zeke up these stairs, Zeke's girlfriend is once again saved and you'll receive one extra turn. But if you let Zeke touch an animal on this round you will lose a turn. The object here is gaining a turn, not losing one, so extra care should be taken. Don't get hung up on the cages when trying to jump them. Back up a little and try again.



ZEKE



ZEKE'S GIRLFRIEND  
5000-20,000 points



ANIMALS  
100 - 30,000 points



NET  
500 - 15,000 points



# TRICKS OF THE TRADE

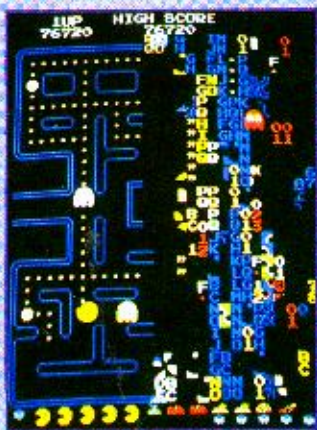
It's Saturday afternoon at the local arcade, and you've just dropped in for a quick game of Dig Dug. Both of the Dig Dug machines are busy, so you put up a token on each one and walk over to an open Defender. Waiting for your turn to come up at Dig Dug, you drop a token in Defender and begin idly hammering the controls.

A dozen Defender games later, the same two players are on Dig Dug and you're getting impatient. You decide to go watch them, to see if you can pick up anything from their playing—after all, they've both been on the same game ever since you've arrived.

The player on the left is playing with a set of quick and efficient patterns that keep the monsters at a safe distance. He has just cleared the 125th board, and has a long string of extra turns across the bottom of the screen. The player on the right, however, is still on the very first board. Through some obscure trick (which she refuses to reveal to you) she has managed to rid the screen of monsters without advancing to the next board, and is carving her initials in the dirt.

Obviously, both of these players know the game of Dig Dug very well. They can both make a single game last almost indefinitely, so either one could claim to have mastered Dig Dug. But which player do you want to play like?

If you think that clearing 125 screens is a worthwhile goal, the Dig Dug strategies on pages 4-7 will help you do exactly that, and the comprehensive strategies in the rest of this book will give you the same edge on many other games. But if you're fascinated by off-beat tricks and unusual ways to play, the next few pages are just for you. We have put together a collection of entertaining and useful tricks for a variety of arcade games, and we hope you enjoy them. We've also included an explanation of the byte rollover phenomenon, because it plays such an integral part in many tricks for video games.



Pac-Man screen as it appears after 255 boards are cleared.

## THE BYTE ROLLOVER

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.



This pattern allows Ms. Pac-Man to go through the blue monster.

## MS. PAC-MAN

To prevent players from using patterns, two of the monsters in Ms. Pac-Man—the red and pink monsters—follow random paths when they first come out. The blue and orange monsters, however, always follow the

same path up until the first reverse. Because of this, patterns will work for either of these monsters, although the red or pink monster may randomly move in your way.

An entertaining pattern for the blue monster is shown above. It will cause Ms. Pac-Man to go right through the monster at point A, after which you can turn either right or left (depending on the position of the other monsters) and continue clearing the board. Be prepared to abandon the pattern at any point if one of the two random monsters moves into your path. This pattern only works on the Strawberry (second) board.



Although tight, it is possible to squeeze through the gap.

### JOUST LEDGE GAP

The lower right ledge in Joust is really two ledges at different levels with a small gap in between (see the picture above). It is possible to fly your Ostrich through that gap, even though it looks too narrow.

Start out by flying to the left over the lower level (to the right of the gap) with the bottom of your Ostrich just skimming the surface of the ledge. If your knees are dragging on the ledge, you'll squeeze through the gap and appear below the ledge. Note that you can not walk through the gap, because the Ostrich is

too tall when its legs are extended.

Eggs can fit through the gap also, if you throw one up from below. Either hit a buzzard just below the gap to throw an egg up through it, or bounce an egg off the center ledge into the gap. If you do this correctly, the egg will be impossible to pick up because it is under the overhang of the upper ledge; wait for the egg to hatch, and the man will stand up tall enough for you to reach him.

### JOUST PHANTOM ENERGIZER

This trick doesn't help your score, but it leaves a platform on the screen during the waves that have no upper ledge in Joust. To do the trick correctly, you must be playing a two-player game, and you must set it up on a wave just before the upper ledge disappears, such as the fifth wave or the Egg wave.

First, you must clear all the opponents in the wave except one. Then hit the remaining buzzard at a point that will leave the egg in the middle of the bottom ledge. Player 1 should stand on the lower energizing platform while Player 2 jumps in the lava. Where Player 1 reappears determines if this trick will work.

If Player 2 is on the energizing platform at the top of the screen, it is possible to make the platform disappear, leaving just a white cloud floating through space. To do so, Player 1 must grab the egg on the bottom ledge. This will end the wave and the upper ledge will disappear; the phantom platform remains.

For the trick to be successful, Player 2 must reappear on the top energizing platform after jumping into the lava. If he reappears on one of the others, you'll have to go to the next wave before that platform disappears and then try again. (Since this costs Player 2 a turn each time, it's always better for Player 1 to do the trick.)

### DIG DUG

Here's a trick offered as an alternative to "playing" Dig Dug. Kill all the monsters except one. Stop the last monster two spaces under a rock and hold him there by pumping him just enough to freeze him. Then dig up under the rock, pumping the monster as you pass through him. When you hit the rock, reverse back down inside the monster and turn away. Quickly turn around and explode the monster just before the rock hits him. In effect, the monster is killed twice. The game will not advance to the next round, leaving Dig Dug all alone on the screen and free to dig patterns or just sit still and take a break. When you want to advance to the next round, either get the fruit or drop a rock on lonely old Dig Dug.

### QIX SPARK LOOP

There are many tricks for avoiding the sparks in Qix, but the one shown below 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 to get past it.



By using this pattern, sparks will be trapped, allowing time to trap the Qix in the lower part of the screen.

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.

### ROBOTRON

The Robotron tank wave is one of the most difficult tests of skill yet in an arcade game. Intense and complicated, it can drain the stamina of even the best players.

The trick explained here won't help you get through a tank wave, but it will give you a chance to relax for a while at the end of the wave.



Relaxing during a Robotron tank wave.

A tank's most powerful weapon is its ricocheting shots, which bounce off two walls before disappearing. If the tanks stop firing, the tank wave suddenly becomes very relaxed; the tanks themselves are not aggressive, and you can survive for a long time by moving around just enough to avoid them.

To prevent the tanks from firing, you must make them "use up" all of their shots. If you can dodge 20 tank shots (without shooting them), the tanks will stop firing. Needless to say, this is easiest to do when there is only one tank left.

The reason this trick works is very simple. To prevent the tank wave from getting too crowded, Robotron's designers set a limit of 20 tank-bullets on the screen at one time. Each time a tank shoots, that bullet is added to the total, and each time you shoot one of the tanks' bullets, that bullet is subtracted from the running total. But the bullets that disappear after two bounces are not subtracted from the total, so the game program always thinks that those bullets are still active. After 20 bullets have disappeared, the program will think that all 20 of those bullets are still on the screen, and will stop

the tanks from firing until you eliminate some of the bullets. But you can't eliminate the bullets—because they're already gone—so the tanks will never start firing again (unless you lose a turn, which causes all of the counters to start over).

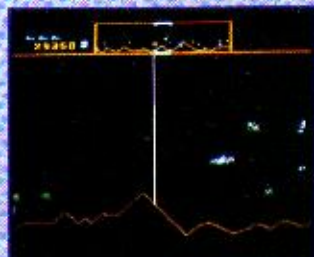


Outsmarting the Robotron Brains.

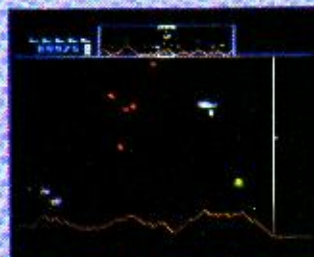
### ROBOTRON DUMB BRAINS

In the picture above, the Brain will never come down to the player pushed against the wall. Instead, it simply walks in place, desperately trying to align with the player before coming straight down. By firing straight up, you can shoot most of the cruise missiles before they reach you, although occasionally one will get around and hit you from behind. This trick will work with one or many brains.

To make a Brain act this dumb, you must wait for him to be tracking you from above and then walk to the right towards the wall. When you get close to the wall, move down diagonally until you hit the wall and then begin firing. The Brain will move against the wall above you and walk in place with his forehead about 1/8" away from it. Almost all of the cruise missiles will hit your shots, although it is possible for one to move away from the wall and reach you.



The Mutant reverse line.



The Swarmer reverse line.

### DEFENDER REVERSE LINES

There are many subtle tricks that can help you in Defender, and one of the most useful of these is using the reverse lines. The reverse lines are places in the planet's terrain that Mutants or Swarmers can't pass through. There is one reverse line for Mutants and one reverse line for Swarmers, as shown above.

When you cross one of the reverse lines all of the affected opponents will turn around and go in the opposite direction to reach you, because they can't "see" through the line. One of the best uses of the reverse lines is simply to cross them to drive away Mutants or Swarmers and buy a little time for dealing with other enemies.

Although the reverse lines are in the same location in free space as in normal play, they're easy to lose track of without the terrain to guide you. If you aren't sure where the

reverse lines are, just move in one direction until the Mutants or Swarmers reverse; this tells you that you've just crossed the line.



Set down ten Humanoids at once and action will freeze.

### DEFENDER FROZEN SCREEN

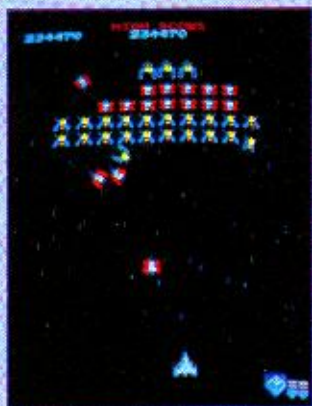
Another good Defender trick is to freeze the screen by setting down all ten Humanoids at once. Once the screen is frozen, none of the elements of the game will move until you hit the thrust button. You can pound on the other buttons all you want, but none of them have any effect.

This trick works best on the first wave. Wait for the Landers to pick up Humanoids, and then shoot the Landers and catch the Humanoids without setting any of them down. After you have caught all ten Humanoids, find a clear part of the screen and coast to a stop. When your ship has completely stopped moving, pull straight down on the altitude lever. This will set all ten Humanoids down directly on top of each other.

You can tell immediately whether the trick has worked, by watching the red, blue, and yellow 500's that appear next to the Humanoids. If they are changing color or moving, then the trick



didn't work and the opponents will continue moving. But if the 500's are not moving, the game is frozen and nothing will move until you hit the thrust button.



Galaga bugs that can't shoot aren't much of 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.



Xevious designer programs himself a credit.

### XEVIOUS DESIGNER'S NAME

Because most game manufacturers don't give their designers name credit, a game designer will often include in the program a trick for generating his or her name. This provides permanent proof of who programmed the game.

The designer of Xevious included a trick for gen-

erating his name right at the beginning of the game. As soon as your Solvalou appears, move to the far right edge of the screen and begin bombing constantly. Continue bombing until the first set of attacking rings is very close to you, and then shoot the rings. The message shown in the picture above will appear on the screen.



Action too fast? Slow it down with this trick.

### DONKEY KONG, JR.

This trick will not help your score, but it has a comical effect. On the first board of Donkey Kong, Jr., climb to the top of the two vines at the far right edge of the screen. Then, with one hand on each vine, push up against the top of the screen and hold the joystick forward. All of the action on the screen will slow to a snail's pace until you release the joystick.

### 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.



With proper execution, 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 him. 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.

# DIFFICULTY SETTINGS

All arcade video games may be created equal, but they don't necessarily stay that way. Arcade owners have the power to change the machines to prevent individual players from tying up a machine for too long. The chart on the right shows you the possible options available to arcade owners for all of the games included in this book. We also show you the factory recommended settings for these games.

The number of plays is simply the number of turns that you receive at the beginning of the game. As you can see in the chart, most games are set for three turns.

The bonus level is the score needed to earn an extra turn, followed by the number of points necessary for each additional turn. If, for example, the bonus level is 10,000/25,000, you will earn an extra turn at 10,000 points and then every 25,000 points thereafter.

The last two columns show difficulty level options. In general, the difficulty level determines the pace of the action by increasing the speed of opponents and the aggressiveness of their behavior.

GAME	NUMBER OF PLAYS	
	POSSIBLE	FACTORY SETTING
DIG DUG	1, 2, 3 or 5	3
DONKEY KONG, JR.	3, 4, 5 or 6	3
GALAGA	3, 4, 5 or 6	3
JOUST	1 to 99	4
MS. PAC-MAN	3, 4 or 5	3
Q*BERT	3, 4 or 5	3
ROBOTRON	1 to 20	3
SINISTAR	1 to 99	3
TRON	1 to 9	3
XEVIOUS	1, 2, 3 or 5	3
FOOD FIGHT	1 to 5	3
FRONT LINE	3 to 6	3
POLE POSITION	3 or 4 laps	3-upright 4-sitdown
POPEYE	1 to 4	3
TIME PILOT	3, 4 or 5	3
ZAXXON	3, 4 or 5	5
ZOOKEEPER	1 to 99	3

**POINTS NEEDED FOR BONUS PLAY****LEVELS OF DIFFICULTY**

<b>POSSIBLE</b>	<b>FACTORY SETTING</b>	<b>POSSIBLE</b>	<b>FACTORY SETTING</b>
10,000/40,000, 10,000/50,000 20,000/60,000 or 20,000/70,000	10,000/40,000	A, B, C or D	B
10,000, 15,000 20,000 or 25,000	10,000	_____	_____
10,000, 15,000 20,000 or 30,000	10,000	Easy, Medium or Hard	Medium
1,000 to 99,000	20,000	0 to 9	4
10,000, 15,000 or 25,000	10,000	_____	_____
6,000 to 11,000 and 12,000 to 17,000	8,000 and 14,000	Normal or Hard	Normal
20,000, 25,000 or 50,000	25,000	1 to 10	2
1,000 to 99,000	30,000	1 to 9	5
1,000 to 99,000	10,000	1 to 9	5
10,000/40,000, 10,000/50,000 20,000/50,000, 20,000/70,000 or 20,000/80,000	20,000/50,000	Easy, Average, Hard or Expert	Average
5,000 to 1,000,000	25,000/100,000	1 to 5	2
10,000, 20,000, 30,000 or 50,000	10,000	_____	_____
90 to 120 seconds	75 seconds	A to H	C
40,000, 60,000 or 80,000	40,000	0 to 3	0
10,000/50,000 or 20,000/60,000	20,000/60,000	Very Easy, Easy, Difficult or Very Difficult	Difficult
10,000, 20,000 30,000 or 40,000	20,000	_____	_____
Escalator Screen	Escalator Screen	Novice or Expert 1 to 99	Novice 36

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