

How to Win!

at

Video Games



Asteroids
Pac-Man
Berzerk
Battlezone
Missile Command
Armor Attack
Space Invaders
Astro Invader
Phoenix
Galaxian

**Interviews and Tips from Experts
on 10 Popular Electronic Games**

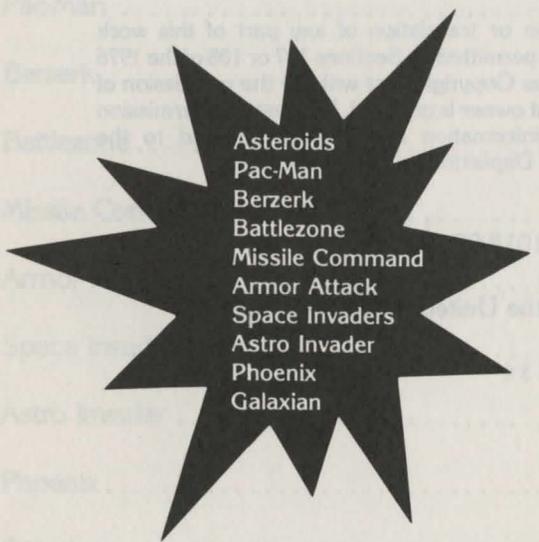
by Ray Giguette

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by **Ray Giguette**



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Preface

Ever wonder how that certain player wins 40,000 points at Pac-Man? 4,000 points at Space Invaders? 70,000 points at Asteroids? Here are the answers. Just a few simple tips can immediately improve your scores at these and other video games. Save money and hundreds of frustrating hours. Let the experts tell you how they win—and how you can, too.

Introduction

The video game player's score, his manner, and his coordination all tell us something. After only a short time, his talent (or lack of it) becomes apparent. As the game progresses his play may progress (or regress), he may be lucky or unlucky, but it is clear almost from the moment he drops his quarter into the machine that he either knows what he is doing or he doesn't.

A good player has a feel for the controls. After playing a particular game 100 to 200 times, its manipulation becomes second nature.

A good player learns to aim, fire and maneuver simultaneously at high speed. He plays relaxed but alert, as if driving a car.

The less experienced player jerks his control stick and throws his weight into every push of a button. He often overshoots, trying to fire more rapidly than is possible (though the expert does have the knack of coaxing the machine to respond in emergencies).

The expert controls the game with his fingertips, slapping rather than pushing the buttons, firing in short bursts and wasting few shots. He may pause for no apparent reason before feeding the last dot to his pac-man, or before exiting the maze ahead of Evil Otto. This lets him rest his wrist and fingers before beginning the

next phase of the game; **the better you are, the longer the games last.**

A good player is daring and aggressive. He can destroy a rock or missile in the last possible instant. During an Asteroids game he will charge into an asteroid, firing just before the rock hits the nose of his ship. He dodges bombs and bullets in order to stay with his targets. And despite the risk, he maneuvers in and around the enemy, challenging and attacking.

Perhaps the one deciding factor between a mediocre player and a good one, or between a good player and an expert, is the use of strategy.

The expert never loses sight of what he is trying to accomplish (i.e. gain points). He has logical priorities, risking time and points where the payoff is biggest, attacking the enemy with the highest point value or whose destruction will win him bonus men. He has a game plan and he sticks to it. At any point in the game the pieces on the screen will be neatly arranged because the enemy is being methodically reduced.

Consistent strategy is necessary to all players, regardless of how well they play otherwise. The strategies in this book have been developed by expert players after hundreds of games. And they can be learned and used by almost anyone to immediately

improve their scores. With practice, improvement can be dramatic.

The following pages include interviews with experts who reveal their secrets for winning these ten games:

Asteroids
 Pac-Man
 Berzerk
 Battlezone
 Missile Command
 Armor Attack
 Space Invaders
 Astro Invader
 Phoenix
 Galaxian

For each game, a general description, an interview with a high scorer, and winners' tips are given.

ASTEROIDS

Game Description

The player's ship appears in the center of the screen, surrounded by large, medium and small moving asteroids and an occasional small or large flying saucer. Controls include "warp," to move the ship forward (though it will coast for long periods on its own momentum), "fire," "left," "right," and "hyperspace." Hyperspace causes the ship to disappear, and to reappear in another spot at random.

Asteroids, ship, and saucers all have the ability to travel "around the world": off one edge of the screen and on to the other. The player's ship can also fire in this manner.

The player's ship can be destroyed either by colliding with an asteroid or saucer, or by saucer fire. Points are gained by destroying asteroids (large = 20 points, medium = 50 points, small = 100 points) and saucers (large = 200 points, small = 1,000 points).

When hit, large asteroids break into two medium asteroids, and medium asteroids split into two small ones. Their debris can also destroy the player's ship.

The player has two ships in reserve which come into play one at a time to replace those destroyed. For every 10,000 points, an extra ship is awarded.

Interview: Tracy, age 12, from Venice.

High Score: 240,000

At the beginning of the game I keep my ship pretty steady in the middle of the board except to aim or get out of the way. I might run into a rock if I warp around. I only shoot at the rocks closest to me, to keep from being hit.

Fire across their path and they'll run into your bullets. I don't use hyperspace much because it always seems to blow me up on an asteroid. Only use it if you're going to be hit for sure if you stay put.

*The main target is the little saucer, he's worth 1,000 points. The fewer asteroids there are, the more often he comes. I always leave one small rock (if you destroy **all** the asteroids, a new batch arrives). Then I start moving fast, straight up, wiggling a little so that when the saucer comes he can't track me.*

If you keep still, or move too slow or too straight, the little saucer will draw a bead on you and shoot you down. You have to shoot as you pass him, then speed up again. It's hard to aim that way, and you have to be careful not to shoot down your last rock.

Another way I've seen it done is to sit your ship at one edge of the screen and wait for the little saucer to come out. If he comes from your edge, you fire before he sees you. If he comes from the opposite side, shoot off the edge at him. Saucers can't do that. If you miss and he gets too close to you, move your ship to the other edge and shoot off it.

The big saucer isn't that dangerous. It just shoots at random, and it comes mostly when there are more rocks, in fact it runs into them a lot. But you don't get points for that.

Playing Tips

1. Keep your ship in the center of the screen when asteroids are abundant.
2. Fire at the most threatening asteroids first.
3. Lead the asteroids with your fire.
4. Use hyperspace sparingly.
5. The small saucer is the game's main target.
6. Destroy all but one asteroid to maximize the number of appearances made by the small saucer.
7. Keep moving when the small saucer is present to avoid being tracked.
8. An alternate method of attacking the small saucer is to wait at one edge of the screen and shoot when the saucer appears.
9. The large saucer should be largely ignored.

PAC-MAN

Game Description

The player guides a round yellow "pac-man" through a maze by moving a control stick up, down, left or right. A continuous trail of dots runs through the maze, including a large "energizer" near each of the four corners. In the center of the maze is a small rectangular pen—the home of four ghostlike "monsters".

As he travels the corridors of the maze, the pac-man eats the dots and energizers in his path. Each dot is worth 10 points and each energizer is worth 50. When all dots and energizers have been eaten, a new set appears.

The monsters exit their pen at the beginning of each phase in an attempt to intercept and eat the pac-man. A new phase begins each time the maze is cleared of dots and energizers or the pac-man is eaten.

Both the pac-man and the monsters can exit at one side of the maze and appear at the opposite side by

passing through a special corridor.

When the pac-man eats an energizer, the monsters turn dark blue and move quickly away. For the following few seconds, roles are reversed, and the pac-man may eat monsters. The first monster eaten is worth 200 points, the second is worth 400 points, the third is 800 points, and the fourth 1,600 points.

The monsters will flicker between blue and white when they are about to return to the offensive. After a monster is eaten, it appears in the pen where it must exit again.

The player also receives points when his pac-man eats the various types of fruits as they appear near the bottom of the monster pen.

One type of fruit appears twice during each set of dots: cherries (100 points) appear during the first set, strawberries (300 points) appear during the second set, peaches (500 points) during the third and fourth sets, apples (700 points) during the fifth and sixth sets. Beginning with the seventh set of dots, the fruits increase in value to 1,000, 2,000, 3,000 and 5,000 points.

The player begins with two pac-men in reserve, and is awarded an additional pac-man for every 10,000 points scored.

**Interview: Dale, age 24, from West L.A.
High Score: 84,000**

Save the corners with the energizers in them for as long as possible. While you're eating the other dots, you should avoid the monsters.

You can confuse them by changing direction quickly, or sometimes by stopping. When you're not moving, the monsters seem to move more randomly.

Watch their eyes. The monsters always move in the direction they are looking. If you're behind one, you can actually follow him as long as he continues to look ahead.

The pac-man is a little faster than the monsters, but sometimes a monster can outrun you. If one is catching up and it's about to eat you, quickly turn a corner. They lose ground following you around corners.

When the monsters begin to converge on you, head for a corner with an energizer. Try not to eat an energizer unless at least three monsters are hot on your tail, because afterwards you want to eat as many as you can.

Sometimes you have to wait for the monsters to catch up with you, but they probably won't all arrive

at the same time. It's better to get them to chase you.

After you eat the energizer, the monsters will run **directly** away from you. You can fool them by reversing your direction. If a monster is about to turn a corner, instead of following, try to meet him head on. With practice, you can make them come right to you.

Eating the monsters and the fruits is more important than eating all the dots. I've seen people who have eaten four or five sets of dots and still don't have that many points because they're afraid of the monsters.

Playing Tips

1. Monsters move in the direction they are looking.
2. Turn corners if you are being chased.
3. Eat an energizer when at least 3 monsters are following close behind.
4. Don't run directly at a fleeing monster. Change direction so he runs into you.
5. Save the energizers as long as possible.
6. Avoid the monsters until after eating an energizer.
7. Confuse the monsters by stopping, or changing direction.

Note: An alternate strategy for Pac-Man is based on the fact that the monsters always react the same way to the pac-man's movements. A sophisticated manipulation of the monsters is sometimes possible which enables the pac-man to always be where the monsters aren't.

The following pattern, if followed without hesitation, will lead the pac-man over the entire maze, arriving under the monster's pen in time to eat each fruit as it appears. In this strategy, the pac-man ignores the monsters, even after he eats an energizer.

The player who showed me this pattern said it was called the "apple pattern," but he didn't know why. It only works, he said, on certain machines because some machine owners have ways of counter-acting it.

BERZERK

Game Description

The player controls a man with a pistol, standing at the beginning of a maze.

A control stick moves the man up, down, forward or reverse. His pistol is fired by pushing a button. The man must be moving as the firing button is pushed, but he will stop automatically as he fires. Armed robots are stationed throughout the maze, firing continuously at the man.

If the man remains in the maze for a certain length of time, Evil Otto, a ball with a smiling face, bounces into the maze after him.

If the man crosses the maze to any of three exits—top, bottom or far right—he will enter a new maze filled with a new set of robots, and will be awarded a new period of grace before Evil Otto again makes his entrance.

Both the man and the robots can be destroyed four ways: by being shot, by touching a robot, by touching a wall, or by being bounced on by Evil Otto. Evil Otto cannot be destroyed, and is able to pass through the inside walls of the maze.

The player is awarded 50 points for each robot he destroys, plus, if he destroys all robots in a maze, a bonus of ten times the number of robots. Generally, each new maze that the man enters is more difficult to cross, defended by more robots, and worth more bonus points if cleared of robots.

The player has two men in reserve, and is awarded one more for every 5,000 points scored.

Interview: Paul, age 22, from Santa Monica.

High Score: 21,000

Basically, I try to encourage the robots to kill themselves. I line my man up with two of the robots so that the closest gets shot by the other one. And I move around, up and down, whatever it takes to make the robots run into each other or into a wall.

Usually about half kill themselves. To get the rest, I stay behind walls as much as possible and just shoot until they walk into my line of fire.

It's not too dangerous to shoot at them out in the open; their bullets travel slowly and are pretty easy to dodge. But try not to have more than one robot shooting at you at a time.

I always try to kill every robot to win the bonus. Sometimes the last robot stays behind a wall and you can't go back to get him because here comes Evil Otto.

Since Evil Otto follows you, try to maneuver so that he has to bounce on the last robot. That's easiest to do if the robot is in line anyway, so keep that in mind: kill the robots farthest from the center first.

Always try to exit at the right. Then you will start the next maze at the left. It's easier to kill all the robots by traveling from left to right across the maze, because the maze is rectangular, and skinniest from top to bottom. Also, Evil Otto enters from the same side that you enter from, and if he comes in from the top or bottom he will effectively cut the maze in two, blocking your man's path from one half of the maze to the other.

Playing Tips

1. Lead the robots into walls, each other, and their own fire.
2. Shoot from around corners whenever possible.
3. Keep moving if you are out in the open.
4. Try not to have more than one robot shooting at you at a time.
5. Kill every robot in a maze to win the bonus.
6. Coax Evil Otto into bouncing on robots.
7. Kill the robots furthest from the center of the maze first.
8. Always exit at the far right.

BATTLEZONE

Game Description

The player controls a tank (as if he were inside) on a plain marked by intermittent obstacles. The obstacles, three-dimensional pyramids and cubes, can block both movement and fire.

The plain is patrolled by various enemy units whose point values when destroyed are as follows: tanks = 1,000 points, missiles = 2,000 points, supertanks = 3,000 points, and saucers = 5,000 points. Generally there is only one enemy unit on the plane at a time.

The player guides his tank with two control sticks that allow the tank to move in any direction. The player views the battlefield as if looking through the tank's periscope. He is aided by a radar screen which warns him when an enemy unit is in range, and locates the enemy in relation to the player's tank.

On the radar screen, the position of the player's tank is represented by the apex of an angle (his field of

vision). Enemy units appear as dots either inside or outside the angle.

The player's tank can be destroyed by tank fire, or by collision with missiles or saucers. When his tank has been hit, simulated cracks appear on the screen. Every time one of his tanks is destroyed, he loses 1,000 points.

He begins the game with two tanks in reserve, and is awarded a bonus tank at scores of 15,000 and 100,000.

Interview: Jim, USC student.

High Score: 151,000

The trick is to get at least 20,000 points. After that, the supertanks, missiles and saucers, which are worth the most points, start coming in. Below 20,000, almost all you get to shoot at are regular tanks.

That means you first have to destroy 20 tanks. The hardest way to hit an enemy tank is to fire at it broadside while it's moving. The same goes for the enemy trying to shoot you. So avoid running straight at a tank, and keep moving.

When I see an enemy tank on the radar screen, I try to get closer without going straight at him. Keep the enemy tank outside the angle of view. On the radar,

your tank is the corner of the angle. You want to maneuver until the enemy is almost touching that point, but is still outside the angle.

Then you turn toward the enemy. He will be turning toward you, so don't waste time. You can either fire at him or run into him. The collision won't hurt your tank.

After getting 20,000 points, the supertanks and others arrive. Kill the supertanks as they come, then wait behind an obstacle for a missile or saucer. I like the cubes best because your tank can shoot over them and still be a small target.

The missile will fly at you, twisting and turning. Lead it with your fire. It's best to wait until the missile is close to you before shooting. Otherwise it's very hard to hit.

You can hear the saucer when it arrives. A saucer is not as dangerous as a missile and is easier to destroy. But don't get too close. It radiates a sort of destructive force field, even as it's hit.

Playing Tips

1. After 20,000 points, the supertanks, missiles and saucers appear.
2. Keep moving, and never head straight for a tank.
3. Use the radar. Position enemy units just outside of the angle of view.
4. Attack when the tank is right beside you.
5. Use the obstacles for protection.
6. Shoot at missiles when they are close to you.
7. Keep your distance when you hear a saucer.

MISSILE COMMAND

Game Description

The player controls three missile bases at the bottom left, right, and center of the screen, and defends a varying number of cities located between the bases. Each base can launch 10 missiles per phase.

A phase consists of a two-waved aerial attack on the player's bases and cities by bombers, satellites and missiles. Certain missiles can "split" into two or more attacking units.

To intercept attackers, the player aims his missiles with a cross-hairs sight which is moved by spinning a ball-bearing control. The sight can be moved quickly to any spot on the screen.

Once a missile has been launched, the sight can be moved without changing the missile's trajectory. The missile explodes when it reaches its target spot, regardless of what is there. The explosion spreads, and remains in effect for a short time. Enemy bombs explode in a similar way when they hit the ground.

Points are awarded at the end of each phase. Units destroyed are worth the following: attack missiles = 25 points, bombers and killer satellites = 100 points, small missiles = 125 points.

In addition, the player receives 5 points for each missile remaining at the end of the phase, and 100 points for each city (multiplied by a 1 to 6 point bonus, depending on how many phases the player has already completed).

The player is awarded a bonus city for every 10,000 points earned. The game ends when the player has no cities remaining after the end of a scoring phase.

Interview: Mike, UCLA student.

High Score: 797,000

The trick is to always have one city left. You can concentrate on defending a certain city, or you can collect at least 10,000 points each phase. Both strategies get harder as the game goes on.

*The best way is to watch your score; try to end each turn near a 10,000 point increment (like 18,000). That makes it easier to win a bonus city during the **next** turn (you'd only need 2,000 more points). If you go past the 10,000 level (to 23,000 say) and win the extra bonus city too early, it could be*

destroyed during the next phase. It is not rare to have all your cities destroyed during a turn.

I defend my missile bases more than I defend my cities. If your missiles are destroyed, your cities soon will be.

Use up all the missiles from a base, then you don't have to defend it. Use the end bases first, though, because the missiles from the center base are more likely to be in range of the enemy.

*Begin by firing a saturation line of missiles (from an end base) across the center of the screen. This will get the majority of the first attack wave. Then shoot at the remaining targets, lowest ones first **if** they threaten an active missile base.*

Try to hit bombers before they bomb and attack missiles before they split. Aim at points where the paths of attackers cross, to kill two or more birds with one stone.

If you need to launch a second saturation attack, use the base opposite from which your first attack was launched. Otherwise you might run out of missiles half way across the screen.

Playing Tips

1. Always try to have one city left.
2. Don't win more cities than you need.
3. Defend bases more than cities.
4. Use all the missiles from a base (end bases first) so you don't have to defend it.
5. Begin your defense with a saturation line across the screen, then pick off the remaining targets.
6. Hit attackers as early as possible, and as many as possible at one time.
7. If necessary, launch a second saturation attack from the base opposite from the one where the first attack was launched.

ARMOR ATTACK

Game Description

The player controls an armed jeep in the middle of a city. Buildings divide the city into corridors which are patrolled by tanks (as many as three at a time) and an occasional helicopter.

The helicopters and tanks pursue the jeep, the tanks firing continuously, the helicopters whenever they are in range. Buildings block ground fire and certain air-to-ground attacks.

Jeep, tanks and helicopters are destroyed by gunfire, and the jeep and tanks by collision. The player is awarded 20 points for every tank body hit. Knocking out the tank's turret as well earns 30 more points plus a bonus. The bonus begins at zero, increasing 10 points with every helicopter destroyed. Whenever the bonus reaches 50 points, it is reset at zero.

The player begins the game with two jeeps in reserve which come into play one at a time to replace those lost in battle. He is awarded an extra jeep for every five helicopters destroyed.

Each time a jeep is destroyed, the screen is cleared, a new jeep appears in the center, and a new set of tanks appears in the city corridors. The number of tanks present increases with each phase.

Interview: Wayne, age 20, from Westwood.

High Score: 3,800

I go for the helicopters because they get you more jeeps. First, I destroy all but one tank. The best way to fight the tanks is to make them shoot each other by driving your jeep in between them. The jeep is faster and more maneuverable and can zip up behind a tank, fire, then run away.

Hide behind buildings and keep moving. Helicopters are the most dangerous because they can track your jeep and fire at it even before they fly onto the screen.

When only one tank is left, avoid it by running from building to building. (I usually travel between the two large central buildings). The fewer tanks there are, the more often the helicopter will appear.

*But if you kill **all** the tanks, a new wave will come.*

It's very difficult for the helicopter to shoot at your jeep if it's flush up against the side of a building. The helicopter will have to make several passes, firing, then circling to attack from another angle. Fire each time it flies over, and you'll probably hit it before it hits you.

Keep firing after hitting a helicopter or tank. Even after being hit, they sometimes are able to shoot.

Playing Tips

1. Helicopters are the main targets.
2. Destroy all but one tank to make the helicopters appear more frequently.
3. Drive between the tanks to encourage them to shoot at each other.
4. Exploit the jeep's superior maneuverability.
5. Do not stay out in the open.
6. Wait close beside a building for the helicopter to come, then shoot each time it passes over.
7. Keep firing at injured tanks and helicopters until they are completely immobilized.

SPACE INVADERS

Game Description

The player controls a laser base which can move left or right along the bottom of the screen. Directly above lie three stationary blocks which act as shields. The top half of the screen contains 11 columns of five alien invaders each.

When destroyed by laser fire, the bottom two aliens in each column are worth 10 points each; the third and fourth aliens are worth 20 points each; and the top alien in each column is worth 30 points. Whenever all aliens have been destroyed, a new wave appears, beginning lower on the screen than the previous wave.

The columns of aliens move as a unit back and forth across the screen. Each time the formation reaches the edge of the screen, it slips downward a notch and reverses direction.

As they move, the aliens drop bombs at the player's laser base. The bombs also chip away at the shields.

Occasionally a flying saucer crosses at the top of the screen. Saucers do not drop bombs or attack in any way. Their point value when destroyed varies from 50 to 300 points, and remains secret until the saucer is hit.

The laser base can be destroyed either by alien bombs, or by an alien reaching the bottom of the screen. The player begins with two laser bases in reserve and receives an extra base for every 1,000 points scored.

Interview: Loo, age 19, from Malibu.
High Score: 4,200

Shoot at whole columns at a time, especially the end ones, so the army gets thinner and thinner. That way it takes longer for them to reach the edge (and drop lower). You have more time to destroy them, then. The lower they get, the quicker their bombs get to you.

One thing I've found is that when an alien is so low that he is directly above the laser base, he can't drop bombs. You can sneak beneath them and fire without their bombing you.

Otherwise, you should never pass beneath the aliens. Stay to one side, move under the closest column, shoot, then move back quickly.

Try to shoot from behind a shield so you're a smaller target. Sometimes I shoot a hole through the middle of a shield and use it as a gun port.

Another reason to shoot at the edges, is to give you a better shot at the saucers. The only other way is to shoot around or between the columns.

Sometimes the saucers have a pattern. On some machines, if you shoot 22 times then wait for a saucer, it will be worth 300 points. From then on, fire 14 times and then wait for the saucer. If you shoot more or less than 14 times, the saucer may be worth less than 300 points.

You should always shoot at the saucers because they're worth more points than the aliens.

After you destroy two waves of aliens, the saucers won't be worth as much, usually 50 points. The aliens are getting pretty low by that time, too. I usually change my strategy for the third wave, paying less attention to saucers and more to the closest aliens. I hardly ever destroy three whole waves.

Playing Tips

1. Destroy whole columns, especially the two end columns.
2. When an alien is on the level directly above the laser base, it cannot drop bombs on the laser.
3. Avoid passing beneath the aliens—shoot and run.
4. Fire from behind a shield when possible.
5. On some machines the saucers with highest point value arrive according to a pattern.
6. Shoot at the saucers whenever possible.
7. After the first two waves, concentrate less on saucers and more on the aliens.

ASTRO INVADER

Game Description

The player controls an armed “defense base” that moves along the bottom of the screen. At the top of the screen, aliens disembark from a large mother ship and are funneled into ten vertical troughs lined up across the middle of the screen.

The trough line is divided into two sections of 5 troughs each, with a gap in between. The disembarking aliens alternate, first dropping into one set of troughs, then the other. As new aliens disembark, the aliens at the bottom of each trough begin dropping toward the player's defense base.

Periodically, a flying saucer appears at either end of the troughs or in the center gap, and descends.

Aliens destroyed by the player's defense base are worth 20 points if they are descending and 10 points if still in a trough. Destroyed saucers are worth between 100 and 400 points, and their value is unknown until

they are hit.

The player's defense base is destroyed if an alien drops on top of it, or if a saucer reaches the bottom of the screen. The player has two bases in reserve, and is awarded another base for every 10,000 points scored.

The alien mother ship contains 200 aliens. Before the troughs become empty of aliens, another ship will come with 200 more. This continues throughout the game, and a counter records the number of space ships which have unloaded.

Interview: Lee, age 16, from Anaheim.
High Score: 32,000

You can never let a saucer touch the ground, so go after them first. Saucers are worth more points than aliens, anyway.

Keep in the center. Aliens can't drop on you there, and you're in the best position to chase a saucer that drops from either end. About the only moving you should do is from the center over to a saucer, and back.

While you're waiting for a saucer, shoot at the four columns of waiting aliens closest to the center. Only shoot at attacking aliens if they are going to hit you.

The aliens usually drop from the same side that new ones are being loaded into by the mother ship. So when aliens are being unloaded into the right-hand side, you can be shooting at the aliens waiting in the left-hand side. When units begin channeling into the left-hand side, you move to the right side.

Always avoid passing beneath aliens except to go after a saucer.

Playing Tips

1. Destroy saucers first.
2. Stay in the center of the screen.
3. Fire into the troughs nearest the center.
4. Ignore attacking aliens unless they threaten you.
5. Attack the side that new aliens are not disembarking into.
6. Avoid passing beneath the aliens.

PHOENIX

Game Description

The player controls a spaceship that can move right or left at the bottom of the screen. From the top of the screen, birds attack in a repeated 5-phase pattern.

In the first phase, a formation of birds hovers, then breaks up as individual birds fly at the player's spaceship, dropping bombs.

When the screen is cleared of birds, the second phase begins. It is similar to the first, except that the player is able to fire more rapidly.

In phases three and four, a string of eggs intertwines, moving back and forth. Large birds hatch from the eggs, zig-zag sharply left and right, and drop bombs. These birds must be hit dead center to be killed. Winging a bird will not destroy it.

The fifth phase begins when the last of the birds have been destroyed. A large saucer appears in the center of

the screen guarded by a flock of small birds. The saucer is immobile, but can drop bombs. A ring rotates around the circumference of the saucer.

The player destroys the ship by killing its alien pilot. To get a clear shot at the pilot, the player must pierce both the ship's bottom armor and the moving ring. When the saucer is destroyed, play resumes at phase one.

The player's spaceship is destroyed by bombs or by colliding with a bird. He can surround his spaceship with a temporary force field which destroys birds and bombs that come in contact with it. The force field remains for only a few seconds, but will not be deactivated as long as a bird or bomb is touching it.

The player receives points for destroying the following: small birds in formation = 20 points, attacking = 40 points and up; large birds = 100 to 800 points, just a wing = 20 points; eggs = 50 points; saucers = 1,000 to 9,000 points.

The player has two spaceships in reserve which come into play to replace those lost.

Interview: Sally, age 17, from Torrance.

High Score: 32,000

The birds are easiest to hit while they're still in a

flock, or before they're hatched. And they can't bomb you then, either. This is the best time to shoot them.

Aim at the highest concentration of birds or eggs to have the best chance of hitting one. For the birds, start shooting in the middle of the flock, then move to the right or left. Since the birds are always moving, you have to shoot ahead of them and hope that they move into your bullets.

Take advantage of the rapid fire in the second phase. Send up walls of bullets. In fact, a superior player should be able to kill most of the birds before they start flying.

The big birds move back and forth, and pause in between. Wait until one begins to move, then shoot ahead of it. If you wait too long to shoot, you'll probably miss and get bombed.

If a bird goes off the screen, don't wait for him right at the edge. The bird might come back low on the screen and run right into you.

Be careful with the forcefield. It always seems to cut out on you, or take too long to go on after you push the button. You can use the forcefield to kill birds, if you wait to turn it on right before one hits you. The important thing is to make it through all the

bird attacks so you can go after the flying saucer. It's the most points.

When you attack the saucer, try to kill all but one of the guard birds. That way you don't have so many bombs falling on you. If you kill all the birds, more will come.

The saucer drops lots of bombs, too. Shoot a hole in the bottom of the ship, right under the pilot. Don't waste time shooting to the left or right. When the bombs are too thick, shoot at either end of the moving belt. By the time you've broken through the bottom of the ship, there will be lots of holes in the belt you can shoot through.

When you're ready to shoot at the pilot, be patient. The bombs are really falling then, and you have to be careful. Dodge under the hole and back again. I've lost a lot of ships trying to force my way through the bombs.

Playing Tips

1. Fire at birds still in formation and before they hatch.
2. Fire into the highest concentration of targets.
3. Lead the birds with your fire.
4. Take advantage of the rapid fire capability in phase two.
5. Don't wait at the edge for a bird that has gone off the screen.
6. Use the forcefield as a weapon.
7. The saucer is the most important target.
8. Destroy all but one of the saucer's guard birds.
9. Shoot a hole in the ship under the pilot.
10. Shoot holes into the rotating ring when the center of the screen is too well guarded.
11. Wait until it is safe to shoot at the pilot.

GALAXIAN

Game Description

The player controls a ship at the bottom of the screen. A lever moves the ship left or right and a button fires its gun. At the top of the screen are 10 columns of from 3 to 6 alien units.

Periodically, squadrons of one, two or three ships break from formation to dive at the player's ship. The squadrons slant across the screen, dropping bombs. They sometimes change direction to follow the player's ship.

If an alien ship survives its dive-bombing run, it will appear again in the formation for another attack. When all aliens in a formation are destroyed, a new formation appears.

The player's ship can be destroyed by an alien bomb or by colliding with an alien ship. The player receives points for each alien shot down. Attacking aliens are

worth more points than those still in formation.

The bottom three aliens of each column are worth 30 points when destroyed in formation, and 60 points when attacking. The fourth alien in the column is worth 40 and 80 points, respectively, the fifth is 50 and 100, and the sixth (flagship) is 60 and 150. There are only two flagships.

When attacking with an escort, the flagship is worth 200 points. When accompanied by two escorts the flagship is worth 300 points, and 800 points if both escorts are destroyed first.

The player begins the game with two ships in reserve that come into play to replace those destroyed. A bonus ship is awarded for every ten alien formations destroyed.

Interview: Amy, age 13, from Beverly Hills.

High Score: 24,000

Concentrate on the attacking ships; they're worth more points and are more dangerous. Kill them as soon as possible, because the lower they go, the more bombs they drop.

Space yourself between the falling bombs and ships. Follow their slant, let the ships fly across your

path, then fire. You can't shoot very rapidly, so aim is important.

Always go for the flagship when it attacks. Try to shoot the escort first to get the maximum number of points.

Between attacks you can shoot at the waiting ships. Aim at the end columns to compress the formation. Usually the attacking ships come from either end and cross to the opposite edge of the screen. The closer to the center that they begin their dive, the smaller the area threatened by their attack.

The more concentrated the alien formation, the easier it is to avoid their bombing runs, and the less ground you have to cover to shoot at an attacker.

Ideally, you'd like to kill each alien on its first attack so that it cannot attack you again. If each alien is able to make two bombing runs, the number of aliens is effectively doubled.

Playing Tips

1. Destroy attacking aliens before shooting at the formation.
2. Space your attacks within the flow of aliens and their bombs.
3. Always attack the flagship.
4. Between alien attacks, shoot at the end columns of the formation to make it thinner.
5. Try to kill each attacking alien as soon as possible, and hopefully during its first bomb run.

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