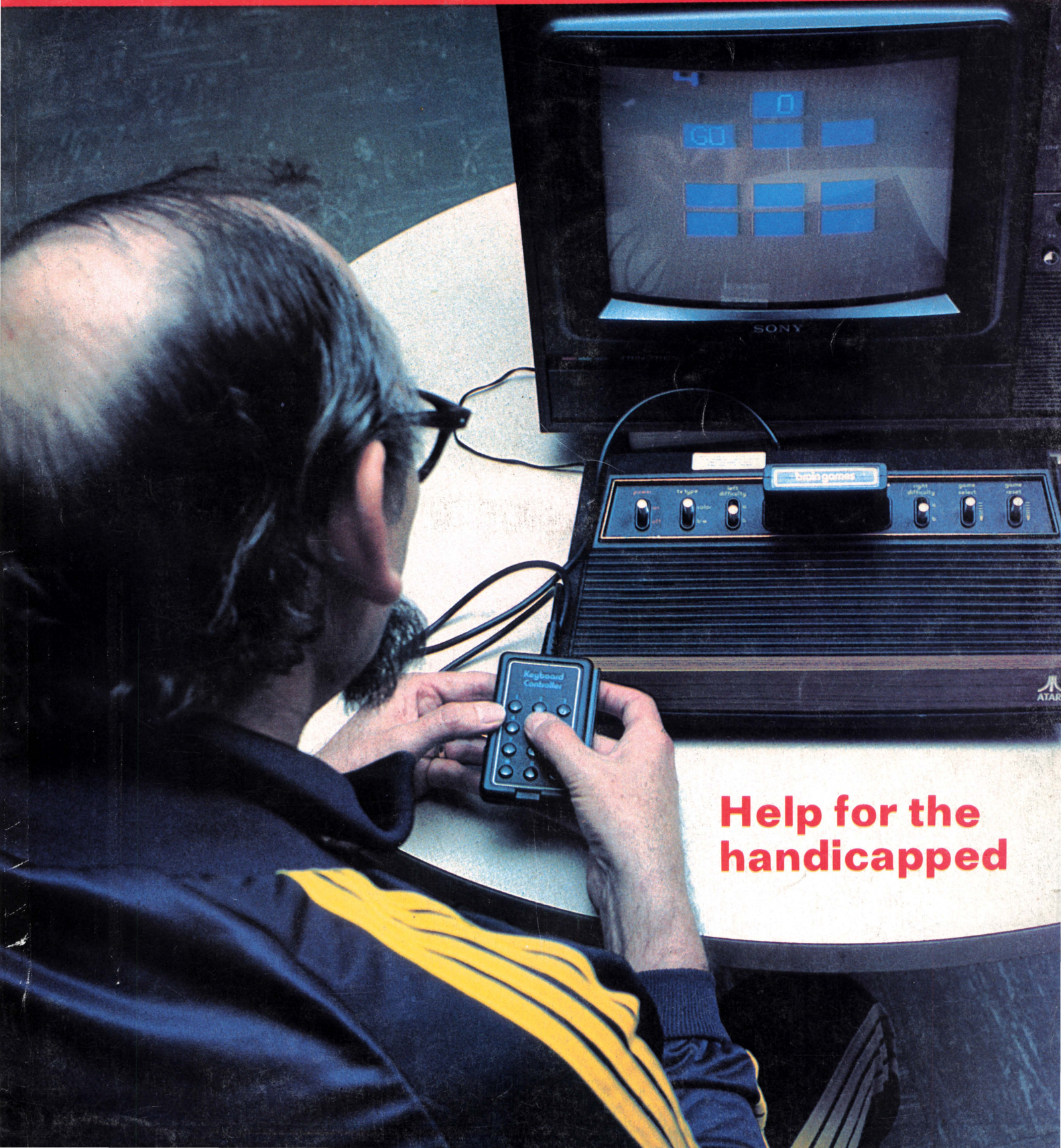


FOR THE COIN-OP ENTERTAINMENT INDUSTRY .....

PUBLISHED TWICE MONTHLY

# PLAY METER

OCTOBER 15, 1982



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## Equipment Poll

The following are rankings of the top videos and top pinballs making above average weekly gross collections nationwide. The dollar amounts appearing are the average weekly grosses as reported to Play Meter magazine through its regular national operator survey. These averages are for games that are currently being marketed in the U.S. (no older than six months). Games with less than adequate responses (less than fifty percent) but with above average collections are so noted. Games not appearing on the poll either (1) did not generate over a ten percent response rate to provide an adequate representative sampling or (2) did not register weekly gross collections above the national average. We encourage operators to join our ever-growing number of readers participating in the survey.

### TOP VIDEOS

#### Arcade Locations

Nineteen of 31 videos (61%) with a response rate over ten percent have above average earnings.

	Oct. 15	Oct. 1
National video average .....	\$188	\$193
★ 1. Tutankham/Stern .....	\$257	\$258
2. Tron/Midway .....	\$249	\$247
3. Ms. Pac-Man/Midway .....	\$230	\$223
4. Zaxxon/Gremlin .....	\$207	\$207
5. Turbo/Gremlin .....	\$207	\$218
6. Robotron/Williams .....	\$202	\$218
7. Galaga/Midway .....	\$198	\$199
8. Donkey Kong/Nintendo ...	\$193	\$203
★ 9. Kangaroo/Atari .....	\$193	\$197
10. Pac-Man/Midway .....	\$191	—
11. Stargate/Williams .....	\$190	\$195
12. Dig Dug/Atari .....	\$188	\$201

★ Conditionally Rated— Weekly average based on less than 50% response rate

### TOP VIDEOS

#### Street Locations

Thirteen of 22 videos (59%) with a response rate over ten percent have above average earnings.

	Oct. 15	Oct. 1
National video average .....	\$169	\$183
★ 1. Tutankham/Stern .....	\$250	\$288
★ 2. Tron/Midway .....	\$212	\$214
3. Ms. Pac-Man/Midway .....	\$204	\$217
4. Galaga/Midway .....	\$191	\$210
5. Robotron/Williams .....	\$183	\$212
6. Zaxxon/Gremlin .....	\$180	—
7. Donkey Kong/Nintendo ...	\$173	\$193
★ 8. Turbo/Gremlin .....	\$173	\$190

### TOP PINBALLS

#### Arcade & Street Locations

	Oct. 15	Oct. 1
National pinball average .....	\$109	\$103
★ 1. Speak Easy/Bally .....	\$141	—
2. Caveman/Gottlieb .....	\$140	\$136
★ 3. Rocky/Gottlieb .....	\$138	\$105
★ 4. Rapid Fire/Bally .....	\$127	—
5. Mr. & Mrs. Pac-Man/Bally .	\$125	\$117

### Provisionally Rated Videos

(Above average earning games, with a response rate between 10—25%)

#### VIDEOS

##### Arcade Locations

Provisional Ratings	Oct. 15	Oct. 1
Slither/GDI .....	\$290	—
Donkey Kong Jr./Nintendo ...	\$256	—
Jungle King/Taito .....	\$228	—
Eyes/Rock-Ola .....	\$220	—
Solar Fox/Midway .....	\$217	—
Naughty Boy/Cinematronics ..	\$208	\$242
Space Dungeon/Taito .....	\$195	—

#### VIDEOS

##### Street Locations

Provisional Ratings	Oct. 15	Oct. 1
Slither/GDI .....	\$280	—
Donkey Kong Jr./Nintendo ...	\$250	—
Naughty Boy/Cinematronics ..	\$208	\$260
Eyes/Rock-Ola .....	\$206	—
Frenzy/Stern .....	\$200	—

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# PLAY METER

Twice a Month Publication for the Coin Operated Entertainment Industry

 BPA Member Business Publications Audit

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#### Defining Depreciation 41

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#### Open House 46

Bally-Advance recently celebrated its move to the South San Francisco area. Mary Claire Blakeman reports on the festivities.

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**Cover Credit:** Videos can help brain-damaged patients relearn functions, and the games may open a new method of home care.

## Pizza Gameroom Tokens



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Guest Editorial

# Selling videos, forgetting the quarters

There was once a hardware salesman who was not doing well. One day, he met a very successful salesman who was selling video machines, and in the discussion that always comes up between two salesman, he told of his rather dismal sales efforts. The video salesman listened very quietly and then smiled and said, "I think I know what your problem is. You're selling drill bits and not the holes."

The hardware salesman was taken back and was very outspoken in his disbelief of this criticism: "You can't sell holes, no more than you can sell air," he remarked.

The video salesman, very confidently said, "Sit down, friend, and have another beer and let me explain. No buyer, no matter what he says he wants to buy, doesn't really want that item. *He wants what it can do.* The buyer of a drill bit wants the hole it can produce, not the drill bit, no more than the buyer of a video machine wants it for a place to keep beer glasses. This selling tactic works, from selling refrigerators to Eskimos—to selling hammers to carpenters."

This, like so many stories, has a moral, and we in the video business sometime need to see or hear it to stay successful or to compete. It applies to an operator selling a location on the placement of a machine, as does to a distributor selling a machine to an operator, or a manufacturer selling to a distributor.

We need to keep this idea foremost in our sales efforts and not sell what is not needed or wanted. Let's

face facts: the operator and the location want the same things—high income and no maintenance. They could think, or at the very least say they want a pretty machine with a catchy theme. But if it doesn't meet the profit and maintenance requirements, it's like a drill bit that will not produce a hole.

Quality is one answer to the buyer; warranty is another. But the sure proof to any product is its track record. Can the seller show—either by references or direct contact—a proven income and a proven maintenance history? If a competitive product is less expensive and can not "produce a hole," no one should consider the price difference, when his specific need is not fulfilled.

New ideas and products are necessary. They put "new blood" into our industry. New machines are *demand*ed; but the new machines, like any product, must be first, quality, and second, at the very least, backed to the hilt by the seller until it has the track record.

It is an old axiom, but true: "You get what you pay for." If one of the three (manufacturer, distributor, or operator) forgets this, he will lose the respect or desire to fill his customers' needs. He will be in real trouble, if not today, definitely tomorrow!

**Bill Stanard**  
General Sales Manager  
Videotronics of Oregon Inc.



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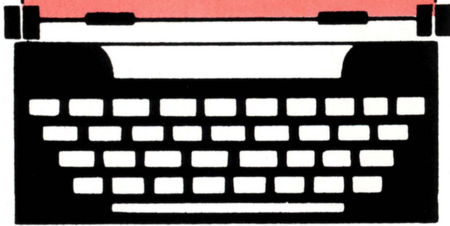
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## Letters to the editor . . .



### Legal conversions

The time has come to speak of many things...Manufacturers have been asking us to support their copyright rights. Your magazine has pushed for legality...and many of us have supported the industry in this way.

A year or so ago, legal conversions were introduced by Gremlin as "Convert-a-Games." Since that time, Gremlin has only released their second-rate games as convert-a-games. *Frogger* did not appear under the convert-a-game package and neither did *Zaxxon*. I am sure that Gremlin would answer with some type of non-interchangeability problem, but you and I know that any game can be switched to any game by any technician with the exception of X-y monitors.

We have attempted to buy as few Gremlin pieces as possible. It is time that the operator got his share of your copyright battle.

**Larry Salganek**  
Videomonsters  
Santa Fe, N.M.

[Ed. Note: The following letter is a reply from Duane M. Blough, president of Gremlin Industries.]

Mr. Salganek brings to the fore several issues which have significant bearing on the well-being of our industry.

Copyright protection for original design video games is vitally important, not only to the designer/manufacturer, but to the distributor, operator, and video game player, as well. Copyright protection assures us all of a steady stream of creative, new game concepts which can find their way to an enthusiastic player-base within the framework of an orderly market for original new games.

As much as new technology is the "life blood" of our industry, new technologies alone are not the key to sustained market development. A second and equally important factor is the need to satisfy the industry's ultimate customer, the video

game player, with a continuing stream of innovative new games. Only in this way can Mr. Salganek, or any other operator, continue to enjoy a high level of earnings—and with these cash box earnings have sufficient capital to purchase the new equipment needed to maintain player interest at its current high level.

Sega introduced its Convert-a-Game and Convert-a-Pak concept in June 1981, in response to what Sega foresaw as a fundamental economic requirement of operators conducting business in a maturing marketplace. Within the 12 months following June 1981, Sega introduced three Convert-a-Pak models—one for Sega's raster monitor system and two models for Sega's

Colorbeam X-Y vector monitor system. That none of these games was a blockbuster hit is certainly as disappointing to us at Sega as it is to Mr. Salganek.

*Frogger* and *Zaxxon* were not released as Convert-a-Games due to technological incompatibility with Sega's Convert-a-Game electronics system. Sega's Convert-a-Game concept requires, for ease and consistency of conversion, that both the old and new games use a highly sophisticated "universal" electronic system.

We believe it is important to emphasize that Sega is committed to its Convert-a-Game and Convert-a-Pak concept as an economical way for operators, such as Mr. Salganek, to acquire the latest new games



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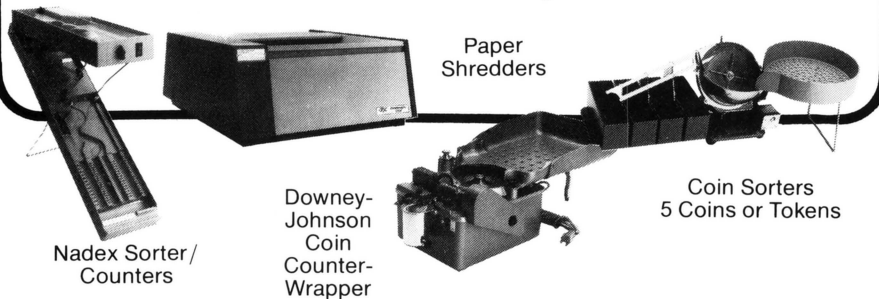
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Duane M. Blough  
President  
Gremlin Industries Inc.

## Push for P.R.

When are the manufacturers and distributors going to wake up that we need a national public relations firm to help our image and fight legislation.

Somebody is saying we do over seven billion a year, and I think at that figure we sure could afford a good relations firm.

(a small operator)

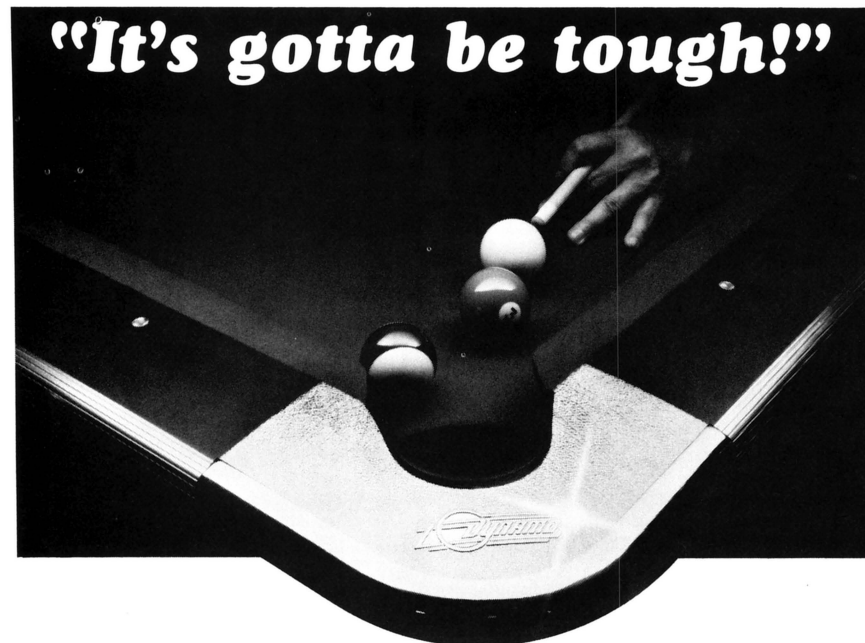
Harry Steinberg  
Game Room  
Sheraton Hotel  
Bal Harbour, Fla.

## Counting coins, service calls

Your article in the July 1 issue concerning coin systems in amusement games was directly relevant to the situation at hand. There is absolutely no reason why manufacturers cannot install a coin acceptor that works on quarters—not pennies, tokens, etc... For \$2,800 per game, we expect quality and perhaps even a 10 cent clip to hang the back door keys. Why is it that it takes 10 minutes to find a volume control button on certain games?

RayVend presently operates over 1,000 amusement games in Maryland, Virginia, and Washington D.C. areas. We encounter coin acceptor problems many times on a daily basis at an average of over \$20 a service call. I feel the majority of the problems relate directly back to the manufacturer. There is no excuse. Why should we, the operators, deal with the outrageous service expense and many customer complaints when we don't make the coin acceptors to begin with?

Raymond P. Hild  
Operations and Sales Manager  
RayVend Amusement Services Inc.  
Beltsville, Md.



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*Something on your mind you want to vent? Got a gripe? Full of praise? Have a question? If you have comments on the coin operated entertainment industry, write to Play Meter. Our "Letters to the Editor" columns are dedicated to you, the operator/reader.*

*All letters must be signed; if requested, only initials will be used or the name withheld from print. Please include return address (although, for the sake of your privacy, addresses will not be printed.) All letters subject to standard editing. Be concise.*

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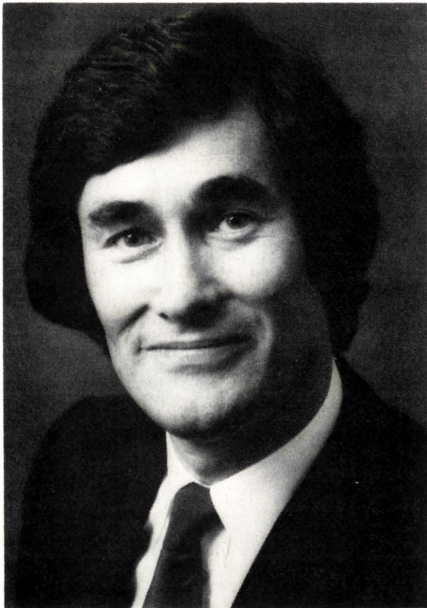
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# SNAPSHOTS

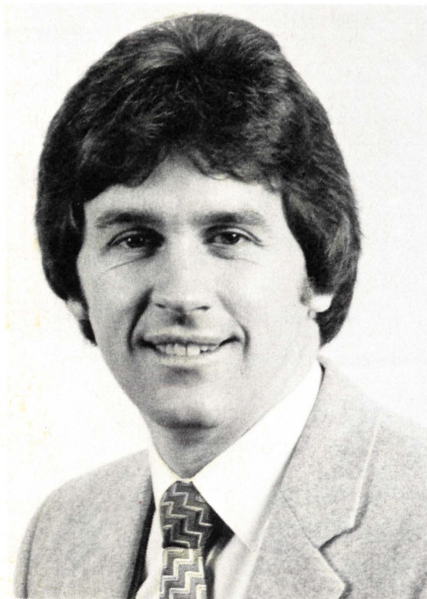


**John S. Farrand** has been named president of the coin video division of **Atari Inc.** Farrand replaces Ken Harkness who resigned from the position.

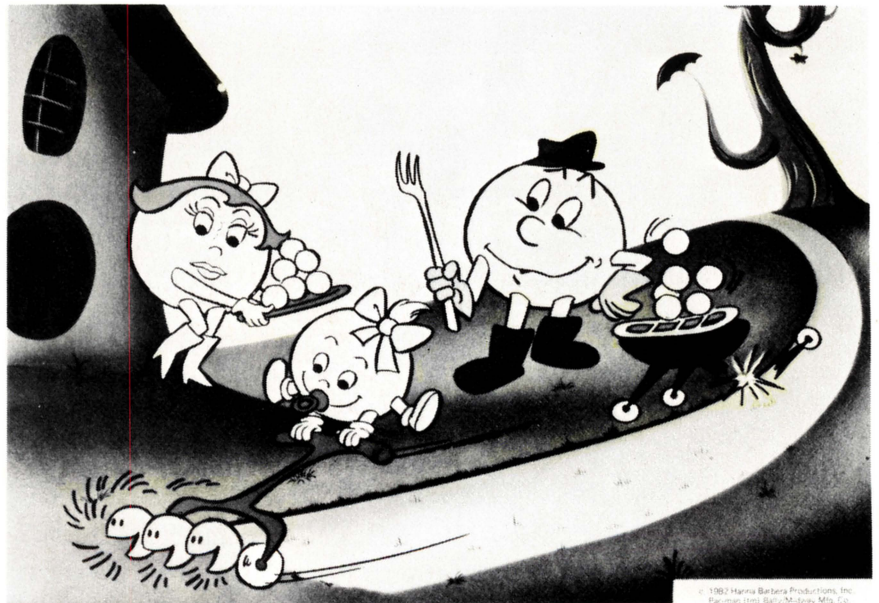
Farrand, as the new division president, will oversee all aspects of manufacturing, engineering, sales, and marketing for the company's coin video division.

"Having almost 20 years of experience in this industry, Farrand has shown an in-depth understanding of the challenges that await. He brings to this position the ability to conquer these challenges," said Raymond Kassar, Atari chief.

Prior to joining Atari four months ago, Farrand spent 16 years at Music Hire Group, one of the largest private operating companies in the world that is based in England.



Exidy has promoted **Mike Wright** to corporate vice president. In addition to new corporate responsibilities, Wright will maintain his contact in sales, as well as direct marketing efforts, and coordinate R&D projects. Previously, Wright was national sales manager for Exidy and has a background as a games operator.



An animated *Pac-Man* television series debuted Sept. 25, when ABC's new Saturday morning children's schedule premiered.

Pac-Man, the unique video game character, is featured as the star of the Hanna-Barbera production. *Pac-Man* airs during the 90-minute programming block from 8:30 a.m. to 10 a.m. Eastern time. Check your local TV listings for the exact time. In addition to the regular series, *Pac-Man* will also be featured in a prime-time children's holiday special.

The series presents Pac-Man as a plucky happy-go-lucky, comical round fellow with a smile as broad as he is wide. He loves to

munch on power pellets, glow with energy, and chomp across the television screen.

For all Pac-Man's adventures, he is a hardworking family man. He lives in colorful Pacland where he earns his living as a security guard for the Power Pellet Forest. His wife, Ms. Pac, is a wise, peppery liberated lady—practical and kind—with boundless energy for all kinds of new projects. Their son, Pac-Baby, is the spitting image of his dad, all smiles with an unstoppable drive for getting into mischief. The household also includes Chomp Chomp, a lovable dog with bad habits, and Sour Puss, a sassy, sly cat who has a cheshire-like grin.

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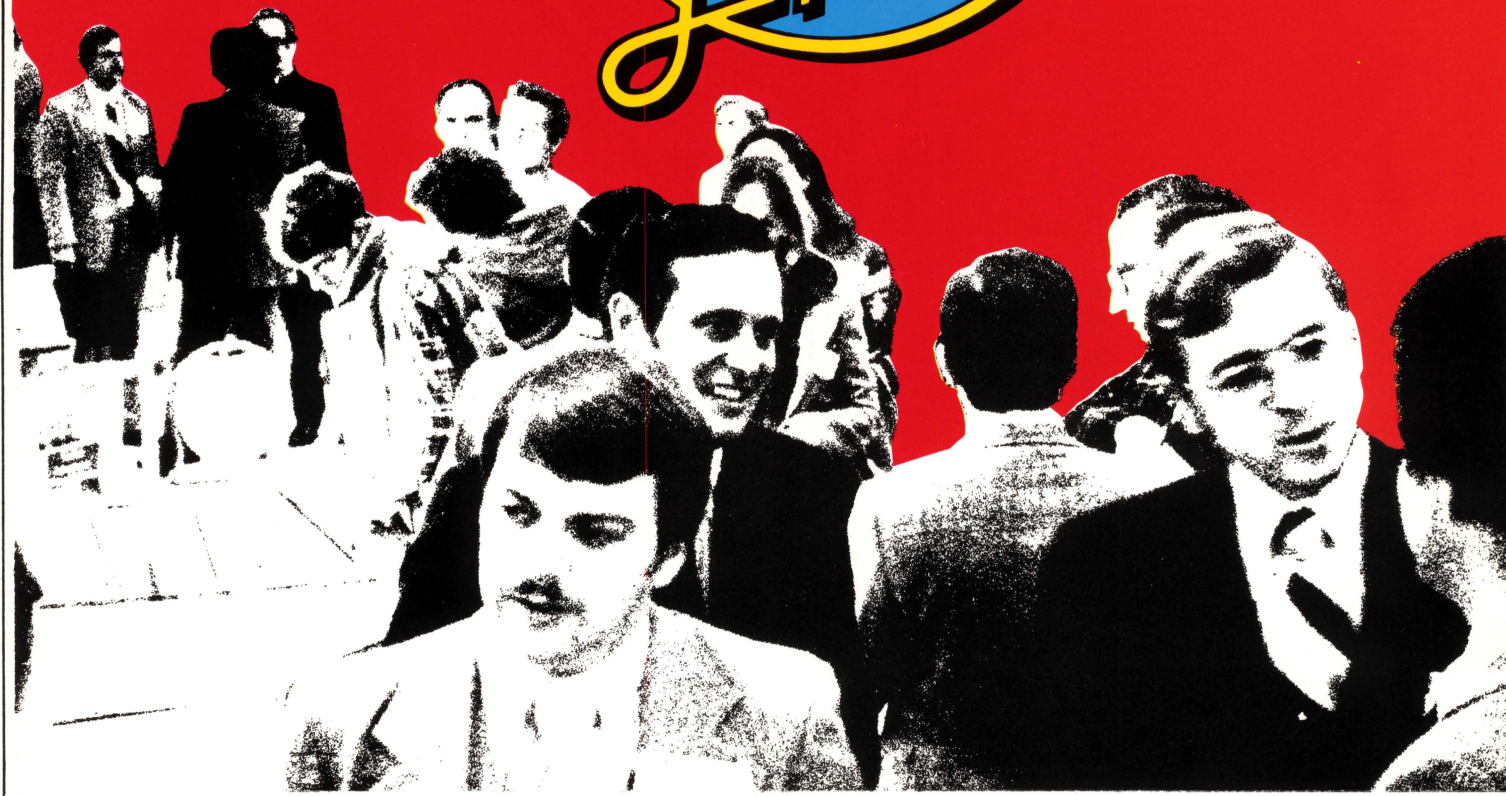
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# PUZZLES

By  
Bill  
Brohaugh

---

## 'Stinky Pinky' riddles

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I once played an interesting parlor game. Despite its ridiculous name—"Stinky Pinky"—the game is a fascinating mental exercise. I will give you a clue, plus the number of syllables in each half of the answer. Using the clue, you will try to come up with a two-word answer. They key is that both words must rhyme.

For example, I give the clue: "Popping post (2)." The "2" means that each word in the answer has two syllables. Two rhyming words that describe a popping post are "thumper bumper," and that is your answer.

### Clues:

1. Complaints from *Play Meter's* pinball critic. (1)

\_\_\_\_\_

2. The face-lift that *Star Wars* forced on coin-op games. (2)

\_\_\_\_\_

3. Bally's movable control device. (2)

\_\_\_\_\_

4. "Death row," where you often lose the ball. (1)

\_\_\_\_\_

5. Trick question: The strength of the creator of *Space Invaders*. (2)

\_\_\_\_\_

6. Flaw in a coin-op phonograph. (1)

\_\_\_\_\_

7. Person addicted to this Williams' video. (3)

\_\_\_\_\_

8. If you consider putting "The Greatest" on a pin a mistake. (2)

\_\_\_\_\_

9. Taverns that feature this Gottlieb pin (also, candy). (1)

\_\_\_\_\_

10. Tallying the bonus on a pin. (1)

\_\_\_\_\_

11. Noise from a pinball machine. (1)

\_\_\_\_\_

12. The backglasses of *Cleopatra* and *Pharoah*. (3)

\_\_\_\_\_

13. This clue has four answers: Video games whose names are "stinky pinkies"—that is, they rhyme.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14. This clue has four answers: Pinballs whose names are "stinky pinkies."

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

15. Editor that demands that this quiz comes to an end.

\_\_\_\_\_

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# NEWS

BY  
MIKE  
SHAW

**VIDEO CARD GAMES UNDER ATTACK • PIERCE BACK TO SAVE CINEMATRONICS • LEGALESE CONFOUNDS ATTORNEYS • 'CRAZY KONG' MAKER ENJOINED • DISTRIB STOPS HOBOKEN FEES • IGT TAKES ROUND #1 • GET OUT OF TOWN • GAME THEFTS PICKING UP • INDUSTRY VETERAN DIES • DRUG CHAINS EXCITED OVER GAMES • STROUD BECOMES DISTRIB • ATARI TO MARKET 'E.T.' • 'PLAY METER' "QUALIFIED" BY BPA**

## VIDEO CARD GAMES UNDER ATTACK

Video card games are being seized at an increasingly persistent rate across the nation. In spite of bearing signs saying "for amusement purposes only," the games are being called gambling devices by state and local authorities and are being forced out of locations.

In St. Louis, Captain Earl Halveland, commander of the St. Louis Police, vice division, said that distributors of Omega's *Double Up* game were making large and unusual loans to locations to get them to take the games.

"These games are manufactured for gaming purposes, in spite of what the signs read," Halveland said after seizing a game from a South St. Louis location. He noted that several other games had been rounded up in St. Louis County, outside the city police jurisdiction.

"The games have appeared here within the last six months, and we want to stop them before they lead to violence. Violence is always the outcome of these games," Halveland told *Play Meter*.

Halveland said players are lured to the game by promises of big payoffs.

"It's designed to entice and encourage people to play in the belief that large sums of money can be won," he said, noting that in reality, odds against the player winning are "astronomical."

Halveland's vice division is seeking felony charges against the operator of the game seized, but admitted that the "owner has not yet been identified."

In Freemont, Ohio, state liquor control agents said the 50 *Draw Poker*

machines they confiscated July 14 put the total of games seized this year to more than 200. Another 12 games were picked up in Lake County, east of Cleveland, the same night. Both of those raids netted games distributed by Automatic Music and Games of Painesville, authorities said.

On August 4, the Ohio Bureau of Criminal Investigation raided a distributor and seized about 60 video card games. The distributor, whose name is withheld pending the filing of charges, had the machines housed in Sunsbury in the southwest part of the state.

"These are definitely gambling devices," Montgomery County Detective Ron Casey said. He estimated the value of the games taken at about \$200,000.

The Pennsylvania Liquor Control Board confiscated an electronic *Draw Poker* machine June 23 from a tavern in Pottstown, and that action led to the confiscation of several other machines there. In Pennsylvania the machines themselves are not illegal, but making payoffs does constitute a violation of

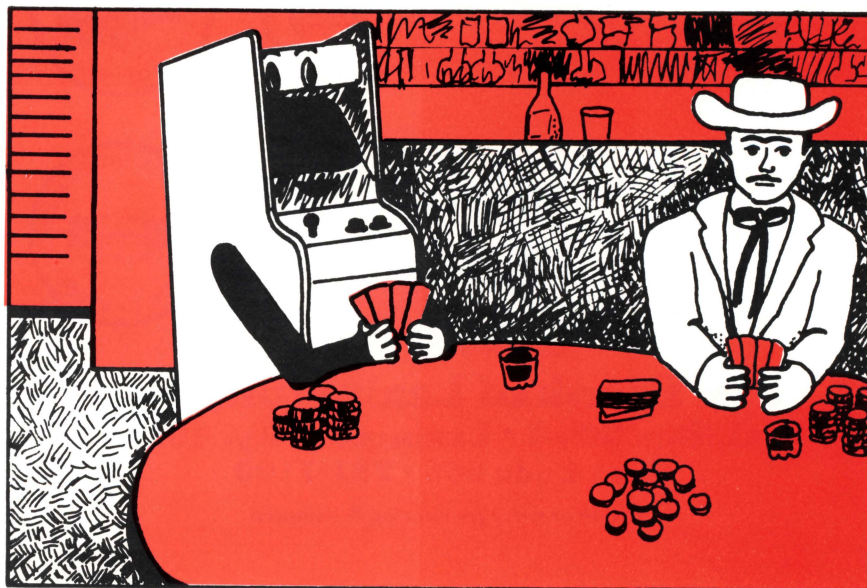
gambling laws. Undercover police determined that payoffs were being made in connection with the games in several locations and promised more raids.

In Kansas, Attorney General Robert Stephan issued a memorandum to Kansas county and district attorneys declaring video card games illegal in the state and urging local authorities to confiscate the games and file charges where possible.

He noted that convictions for selling, renting, or leasing the games would be class "E" felonies, punishable by one to five years in jail, a \$5,000 fine, or both.

## PIERCE BACK TO SAVE CINEMATRONICS

In an attempt to fight off an impending bankruptcy, Cinematronics' chairman



of the board, Jim Pierce, has returned to actively lead the company as president and chief executive officer.

Pierce returns to active duty in the wake of severe cash flow problems and the resignation of Fred Fukumoto as president.

Fukumoto was unavailable for comment. Pierce said Fukumoto resigned "to look for other opportunities."

Pierce also said he hoped Fukumoto

might consider returning to Cinematronics. But, at this point, the former chief executive was coming out of retirement to lead the company.

Assailed by the lack of a hit game and besieged by demanding creditors, Pierce confirmed Cinematronics is looking for some additional financing to save the firm from a threatened Chapter 11 bankruptcy.

The biggest threat to the company

rests in the hands of Security Pacific Bank, a California lender pressing Cinematronics for some \$3,400,000, Pierce told *Play Meter*.

Pierce said the company has terminated pension and profit sharing plans and is attempting to change its tax year-end in hopes of recovering nearly \$3 million it paid in taxes last year.

Although the bank could force Cinematronics into bankruptcy, Pierce said that firm and its other creditors are abating in hopes Cinematronics can locate outside financing. That would obviously be better for those firms, said Pierce, for they would be able to collect full amounts owed them. Ordinarily, according to a Chapter 11 bankruptcy, the bankrupt firm files a plan for recovery with the court that provides, in part, for repayment of a percentage of the debts it owes.

Pierce insisted the bank and other creditors would "get every dime they've got coming."

Despite Cinematronics' current debt problems, Pierce predicted a bright future for the company, saying that some new technology would result in an exciting presentation at the Amusement and Music Operators Association show this fall.

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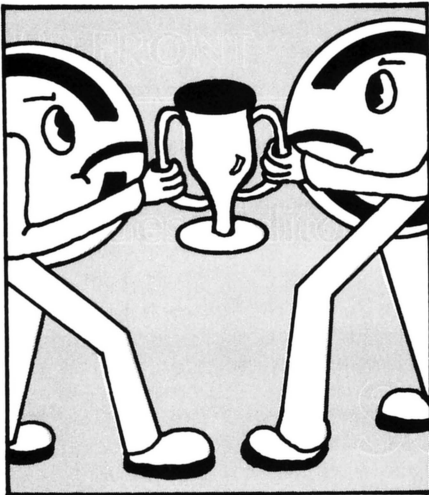
## LEGALESE CONFOUNDS ATTORNEYS

Sometimes the video game copyright and trademark court battles get so confusing even the arguing companies' attorneys have trouble understanding the most obvious things, like who won.

Such, apparently, was the case in a recent ruling on whether or not Simon and Shuster, as publishers, and Publications International, as authors, could continue to market editions of their hit book "How to Win at Pac-Man."

Sidney Katz, attorney for Midway Manufacturing, told *Play Meter* that a second edition of the book had been "stopped cold." (See *Play Meter*, Sept. 1, p. 30.) But Todd Parkhurst, attorney for the publishers, said Katz's contention is "flat wrong."

When Judge John Grady handed down his ruling July 14 in the U.S. District Court in Chicago, he instructed



attorneys for both parties to meet and decide on the wording for a proper agreement that would reflect his decision. But, when the attorneys convened, "we wondered if we had been to the same case," Parkhurst mused.

"It was evident that Midway's attorneys had a completely different view of the case from what we understood the ruling to be," Parkhurst said. "So we had to return to the judge for clarification."

Subsequent to that appearance before Judge Grady on July 30, a nationally syndicated Chicago *Sun-Times* story told the world the Publications International book "was a fair use of the *Pac-Man* game and did not violate copyright laws."

In Grady's July 30 order, he wrote, "Bally/Midway Mfg. Co.'s motion for preliminary injunction based upon alleged trademark infringement is hereby denied because there is no trademark evidence that would justify preliminary relief, since there has not been showing of any likelihood of confusion on the part of the public."

But Katz pointed to the preliminary injunction against the book that was granted to Midway in the original July 14 hearing and said the Chicago *Sun-Times* story was in error.

The confusion, Katz pointed out, was that the court did deny the book was a violation of the Midway trademark, but the second edition of "How to Win at *Pac-Man*" was enjoined because it violated Midway's copyrights.

That second printing of the book had to be "stopped cold," Katz reaffirmed, and specific changes to the front and back cover and four of the pages inside had to be made before the publishers could go back to the presses and pump out another edition of the manual.

"I don't know if they plan another

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book," Katz said, "but if they print another book without making the changes ordered, the judge made it very clear they would be considered in contempt of court."

The judge included comment in his ruling that the book was "clearly superior to books licensed by Midway" on the same topic.

"The judge edited the book," argued Parkhurst, "and told us to eliminate some parts because they were not educational. We will revise the cover and remove *Pac-Man* and the ghosts. We will probably have another go-round with the judge over payments to Midway. Judge Grady told us to come back early in 1983."

Katz agreed that there would be subsequent action by Midway for payment from the publishers for use of Midway's copyrighted material in the first and second editions of the book.

Midway had initially sought to have books already in the marketplace recalled. After the July 14 ruling, Katz said Midway had been told it could not recall any of the 500,000 copies of the first edition.

It's all in how you see it. •

## 'CRAZY KONG' MAKER ENJOINED

After more than 1,000 illegal *Donkey Kong* copies have been seized, Nintendo Inc. has won an injunction against Falcon Co. Ltd. of Tokyo, the exporter of many of the unauthorized copies to the United States.

Falcon had previously been licensed by Nintendo to manufacture a limited number of printed circuit boards for the game and to sell them in Japan. But, according to the charges brought by Nintendo in the suit in Japan, Falcon exceeded its authorized production limitations and illegally exported large numbers of the boards.

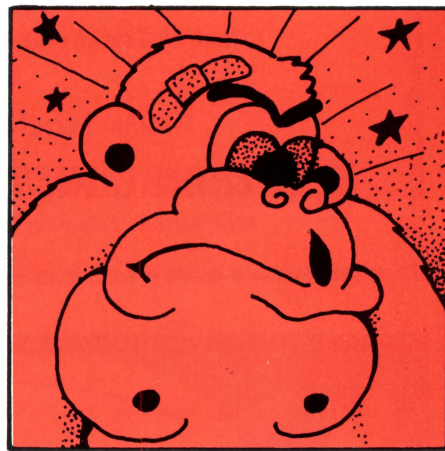
The infringing boards were sold in Japan and America in *Crazy Kong* games, a name authorized by Nintendo for Falcon's use in Japan but not in America.

The injunction was granted July 5 in the Fifth Civil Affairs Section of the District Court in Japan, and it bars Falcon from any further manufacturing, selling, operating, or exporting

of the printed circuit boards for *Crazy Kong*.

Falcon, in turn, filed a countersuit against Nintendo but lost its effort to escape Nintendo's action. Nintendo intends to pursue further action against Falcon for damages, reported the Japanese trade press.

In the United States, the *Crazy Kong* games have created a nightmare for Nintendo of America and for operators who bought the games thinking they were legal. Since the seal reading "licensed by Nintendo" (in English) is affixed to the games, many buyers interpreted them to be legal exports.



"A lot of innocent people are being hurt over this," admitted Nintendo of America's Ron Judy.

Ron Markis of Games Galore, a distributor in Dallas, complained about the publicity his firm had received when its *Crazy Kong* game was seized through a Nintendo court action.

"We don't buy copy games. We believe in copyright protection," Markis explained. "We bought only one game and that before anyone had been told to stop selling them."

Another distributor who wished not to be identified said he had already received enough bad publicity over the games. He said his firm bought *Crazy Kongs* from a Dallas manufacturer who sold almost 300 *Crazy Kongs* before he found out the boards are illegal.

"When he was named in the Nintendo suit, he offered to buy 300 *Donkey Kongs* from Nintendo to replace the *Crazy Kongs* he had sold, but Nintendo turned him down," the distributor told *Play Meter*.

Nintendo's Judy said that such a deal was in the works but fell through when the buyer failed to produce

sufficient collateral to obtain credit for his purchase. •

## DISTRIB STOPS HOBOKEN FEES

New Jersey distributor Betson Industries has won a suit against the city of Hoboken to at least temporarily halt collection of a \$250 per game licensing fee.

As of January 1, the city had been collecting the new fee that had been raised from just \$15 per game. The city had collected an estimated \$24,000 in fees by early August when Betson took its complaint to the Superior Court.

Joe Cirillo, who took in the proceedings on behalf of Betson, said Judge Taylor told the city to submit a complete cost analysis of its operation showing the increased expenses that required the dramatic increase in fees.

Until the city can show cause to increase the fee to that rate, the old fee of \$15 stands. Betson is also conducting an independent cost study.

Cirillo said a moderate increase of 30 to 40 percent over last year's fee would be acceptable to the industry.

"Hoboken has always had a lot of games," Cirillo said, "but when they saw a lot of new game rooms open up this last year, they thought there was money to be made. They were operating under the common misconception that operators are making a lot of money."

Prior to the Superior Court ruling, city license clerk Leo Serrano had issued about 30 summonses to operators and locations that had not paid the \$250 license fee for each machine. The game owners faced fines of \$200 for not paying the fees.

Cirillo said that no decision was issued as to what the city must do with the fees already collected, only that those who have not yet paid need not do so until the matter is finally decided. •

## IGT TAKES ROUND #1

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round of a court battle with Bally Manufacturing centered around whether or not Bally will be able to compete with IGT and its video card games in Las Vegas.

IGT would like to keep the Bally games out of Las Vegas and to do so has called up certain contracts signed between the two companies. IGT claims Bally assigned all rights to Bally videos to IGT boss Si Redd, former president of Bally Distributing of Nevada. (See *Play Meter*, July 1, p. 15.)

On July 12, Nevada District Court Judge William Forman issued a temporary injunction prohibiting Bally from competing, for the term of the injunction, with IGT with its *Keno* and *Video Poker* games.

"There was a narrowing of issues to these two games," said IGT attorney Ray Pike, "but there is a lot of discovery continuing on both sides."

The IGT suit claimed that Bally owed its allegiance in reference to all its video games, including such popular pieces as *Pac-Man* and *Space Invaders*. IGT claimed it is owed a certain portion of the revenues Bally has collected from sales of those

games.

But the July 12 injunction was issued against only the two gambling videos Bally is trying to work into the Las Vegas gambling arena.

Noting that IGT is likely to succeed on the merits of its case, the court issued an order enjoining Bally from "manufacturing, using, selling, maintaining, repairing, leasing, renting, or otherwise dealing with coin-operated games or amusement devices that utilize an electronic viewing screen to play *Draw Poker* or *Keno* or any adaptation thereof."

Bally has filed an appeal of the ruling with the court, and the next round of hearings was scheduled for early October. ●

## GET OUT OF TOWN

Residents of Marshfield, Mass., have ordered 200 video games to hit the road.

A former narcotics officer, Tom Jackson, authored the legislation that gives operators three months to clear games out of town. The law was devised and voted in June 15 at a town meeting and calls for a \$200 fine for anyone found using, operating, or possessing a video game or a pinball machine for commercial purposes.

Young residents of this community, just north of the pilgrim town of Plymouth, responded vehemently to the video ban.

"I don't think it's fair," said 16-year-old Adam Hessler. "I don't know what I'm going to do when they pull the machines out. I'll probably be walking the streets causing trouble."

Older residents feared the games might lead to rowdiness and drug dealing, and some parents objected to the time and money their children spent on the videos.

Operators are considering seeking an injunction against imposition of the legislation.

"It was about 150 ultra-conservative people trying to legislate policy for 2,000 people," said Mitch Snyder whose Marshfield Sport Center con-

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tains eight video games. "A lot of people who voted for the law probably don't even know what a video game is."

Snyder is attempting to organize a business group in the town of 6,700 residents to try to overturn the bylaw.

When contacted about youth problems as related to the games, Marshfield Police Captain Sullivan would not supply any information over the phone. He said, however, that he would answer by letter, but failed to do so. He would not return subsequent call from *Play Meter*.

## GAME THEFTS PICKING UP

Video game thieves are giving a new connotation to the expression "free game." Nationwide, reports are that video game thefts are on the rise.

Some police officials in particularly hard-hit areas have recently made statements regarding the increase in video game thefts.

Police in the Kansas City area said that recent reports indicate at least 20 machines have been stolen there.

"It's like CBs (citizen band radios) a few years ago," said Major Shannon Craven of the nearby Independence, Mo., police department. "If you had one of those, you could just about figure on not having it long."

In Independence, burglars took 11 videos from Wizard's Arcade on a recent weekend. They entered by force, but most reports indicate thieves walk in during business hours and get



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the games.

"They just let them take them," said Richard Nelson of Advance Amusement of Kansas City. He recently lost three machines. "Usually there's a new person behind the cash register, and the thieves take advantage. One time, though, they even asked for the manager," he said.

Charles Eagan of Boulevard Music Service in Kansas City, Kansas, said uncooperative workers in the locations are to a great extent responsible for the problem.

"The help doesn't know and doesn't

care," he complained. "We can't be there watching all the time, and the (location) owners have no investment at all."

Eagan said the cost of insurance for games is prohibitive and added that operators' failure to register the games with the city has led to easy resale for the thieves.

In California, Shasta County sheriff's agent Bradd McDannold called the thefts "the latest thing."

"We've seen an increase, in both county and city, of folks walking off with them," it was noted.

Police investigator Chuck Byard said the machines are quick money-makers and can be easily resold.

"Many people would be happy to buy them at half price," he said.

Byard said his department, aided by serial numbers of the stolen machines, has been able to recover about half the stolen games.

Authorities suggest either chaining the games when possible, or wiring an alarm system to them. They note that most thefts occur during normal business hours, so altering locations to who should be able to remove the games is an important step in preventing thefts.

A rash of thefts in Buffalo has led one operator to put some effort into protecting his interests. Jack Alessi of Regal Vending, Niagara Falls, sent letters "to the locations which I thought would be prime targets of theft. Due to an informed employee of a pizza parlor, we caught the men in the act of removing our machines."

The men Alessi wrote of used sophisticated techniques to heist the games. They posed as employees of the operator and showed detailed books with written orders for the pickup of the games and replacement of them with far less expensive models.

Informing the location led to the arrest of three men believed to be part of a larger theft operation. The men were charged with attempted grand larceny.

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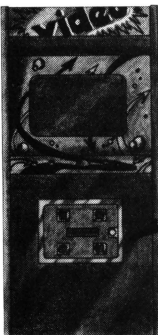
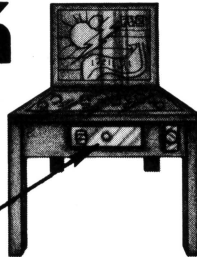
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## INDUSTRY VETERAN DIES

Frank Negri long-time industry executive and expert, died of cancer at age 80 on August 13.

Negri was executive vice president of Continental Divide Distributors in Denver, Colo.

Negri spent the last eight years at Continental Divide, the 15 years before that at Seeburg, and had devoted a total of 53 years to the coin-op amusement industry.

Negri was an active, visible spokesperson for the industry within industry circles and as a member of several prestigious organizations. He was a thirty-third degree Mason and a member of the Round-up Riders of the Rockies—an organization that counts

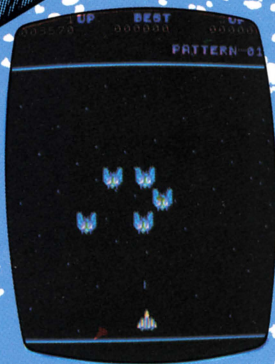
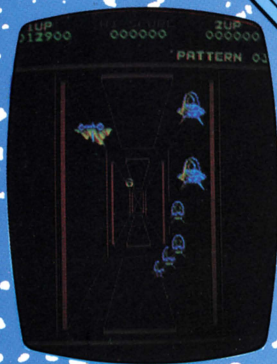
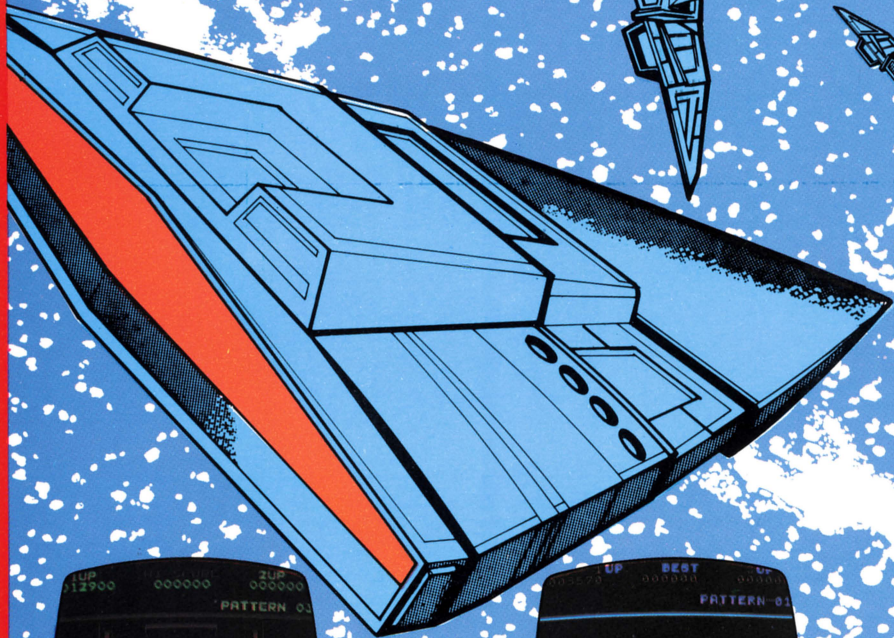
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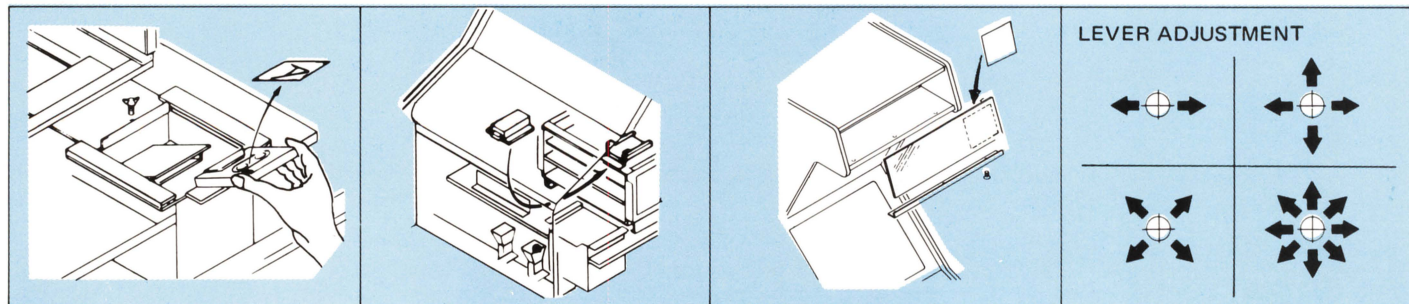


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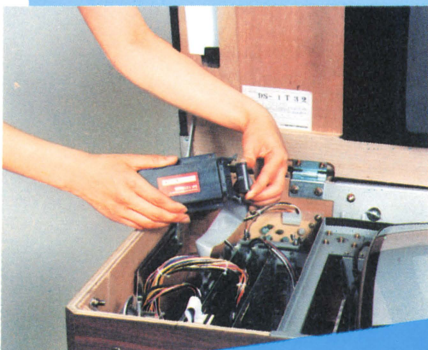
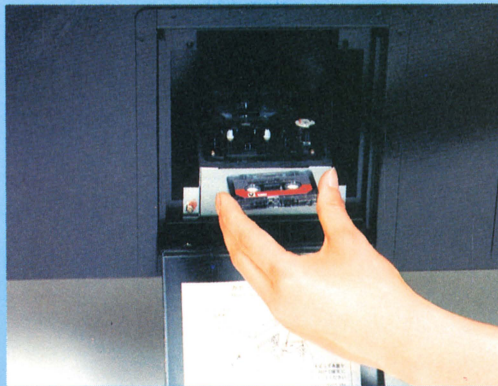
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John Wayne among its past members and Ronald Reagan among its current members.

"The industry will miss a person like Frank," Continental Divide President Jerry M. Gordon said. "He was always a credit to the profession."

Negri served as consultant to the Small Business Administration. He would evaluate coin-op routes before they were sold.

Negri was born in 1902 in Leadville, Colo.

## DRUG CHAINS EXCITED OVER GAMES

Drugstore chains are getting more and more excited about the compatibility of videos to their operations, it was reported by the industry's trade publication, *Chain Drug Review*.

Calling video games one of "America's largest (and certainly one of its most profitable) fads," the publication announced that many drug stores are shedding their traditionalism and opening up their stores to the games.

"The games represent nice, easy profits for chains because suppliers handle the machines," the article reported.

Despite these "easy" profits though, the publication said drug chains have generally approached coin-ops cautiously, worried that inclusion of the games might damage their "carefully wrought image as a family-oriented health care provider," or "disturb their stores' traditional clientele."

Most of the chains, it reported, were carrying just one or two games and locating them away from Rx counters and other high traffic departments.

The article noted several chain operations that have converted at least part of their operation to include videos.

Taylor Drug Stores, for instance, has been adding videos to certain stores since last fall. The chain now reports that 17 outlets offer games. It would be more, insisted Taylor's James Sims, but a shortage of games at the outset prohibited the chain from moving faster.

Sims indicated that since there was no initial investment required by Taylor and no subsequent people problems in the store, the move was very

positive for the chain.

Peoples Drug Stores has added games to about 25 percent of its units.

"We have a certain amount of space available to us in every store, and we have to get the maximum amount of return on investment for that space," explained Joseph Pollard, vice president of public relations for Peoples.

The chain has been in the video

game business for well over a year now. Though most of its stores house one or two games, the firm is testing one "arcade" store that offers 10 games set off in a separate section of the store.

Ironically enough, Reed Drug Stores has installed the microprocessor pieces in 17 of its stores, primarily where tube testing machines used to be.

### The Token Zoo



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# NEWS

But LaVerdiere's Super Drug Stores has embraced the concept more heartily than all the others testing the drugstore marketplace. LaVerdiere's operates 22 in-store Action Family Arcades in addition to three free-standing arcades adjacent to LaVerdiere drug outlets. The chain continues to open arcades at the rate of one every other week.

The firm's president, Reginald

LaVerdiere, said the key to success with his arcades has been in "creating clean, properly run, well supervised" arcades that attract a broad spectrum of clientele.

The chain operates its own games and employs its own technicians. The firm maintains a stable of about 600 games and uses its computerized inventory control system to track the take of each game.

When LaVerdiere entered the arcade business, the chain was seeking ways to use space from optical centers it had decided to close. Now, instead of squinting through multitudes of strangely shaped lenses, LaVerdiere's customers are peering into video monitors.

## STROUD BECOMES DISTRIB

David Stroud, who left Cinematronics several months ago, has turned up in distributor's garb. Stroud presides over the new Progressive Game Distributors, a San Diego firm that opened its doors June 10.

Not surprisingly the firm will handle Cinematronics' games. It also offers vending equipment from Vending International, and Progressive is seeking agreements with major game manufacturers.

But Stroud emphasized the firm will specialize in servicing. "It is our strong point," he said.

Stroud was encouraged by a grand opening celebration that catered to more than 150 industry people.

"We were very excited with the turnout and results of our grand opening. Things have really started out well for us, and we are looking forward to the growth of our company," he commented.

Progressive's executive staff includes Daniel Gardner, chief financial officer; Rocky Dillon, sales manager; and Julius Robbins, parts and service manager.

## ATARI TO MARKET 'E.T.'

Atari Inc. and Merchandising Corp. of America, a subsidiary of MCA Inc., have reached an agreement under which Atari was granted the worldwide exclusive right to market coin-operated and home video games based on "E.T.," the record-breaking film directed by Steven Spielberg.

Spielberg and Atari will be working together on the development of the



Left to right: Julius Robbins, Progressive Game Distributors; David Stroud, Progressive Game Distributors; Paul Harrison, Atlas Music; and Dan & Tula Nicholas of D.F.C. Electronic Games.



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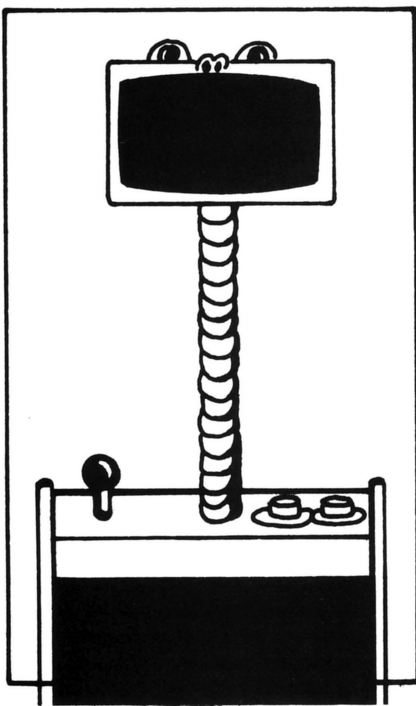
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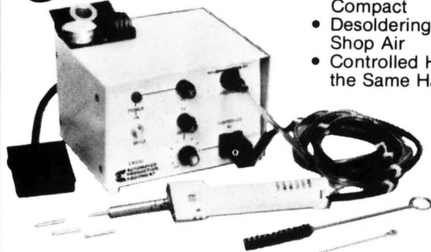
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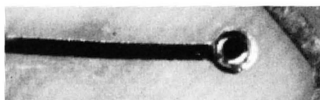


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were lots of shrapnel and bullet wounds. Lately, they're mainly vehicular accidents, motorcycle accidents especially.

Aside from trauma or head injuries, we also have a large number of people with strokes. In the general sense, they'll include what we know as strokes or cerebrovascular accidents, as well as circulatory failure—perhaps due to heart disease and heart attacks.

*PLAY METER: You noticed that some of the components of the games work on some of the same skills that you want to work with your patients. Could you explain that a little bit more?*

LYNCH: I think in most brain disorders that come to the attention of my program, these are ones that are fairly serious cases such as people that have been in a coma for a while or have suffered some physical disabilities for many months or years.

With that degree of damage, there is often some effect on the person's ability to pay attention. His level of consciousness may be lowered somewhat, or he may simply have trouble paying attention and keeping in tune with the things that are going on around him. He also has problems with memory and learning.

So at a very basic level, we want to improve the person's ability to attend, and not only to attend to a specific information, but to be able to attend for longer and longer periods of time. In order to profit from other phases of the program, he has to be able to pay attention to it so that he can remember.

The video games indirectly do this because in order to play the games successfully and to improve your score, you have to pay attention better and longer. So by looking at their scores, we can see if over time the person is learning the task and is therefore paying attention more effectively.

In terms of eye-hand coordination, which is another common problem with brain injury, virtually all of the arcade games or arcade-type games require some degree of eye-hand coordination to play them skillfully. If you think of even the simplest games such as *Pong*, then on up to *Breakout*, and even to more complex games such as *Space Invaders* or *Pac-Man*, they all require a certain degree of coordination of visual input and motor output.

The person has to pay attention to things happening on the screen, has to guide something from one place to another, has to predict where something is going, how fast it's going, and has to predict intercept points. To put it bluntly, he has to have good eye-hand coordination.

And again, if the person is able to pay attention more effectively and has more effective eye-hand coordination, we would assume that he would learn other more important tasks such as dressing, eating, walking, and even driving in some instances.

It's not to say that this kind of training is unique. I think that rehabilitation for years has emphasized the need to retrain these abilities. But with the electronic video games and computer programs, I think we're attempting to do this more specifically, more pointedly, and more effectively.

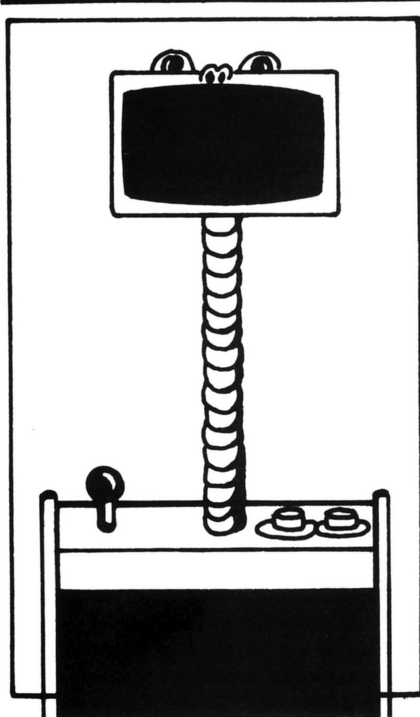
*PLAY METER: And retraining is also more fun with video games?*

LYNCH: Oh, yes. That's really what we're putting first, not necessarily last. Part of the real problem in rehabilitation is that it's out and out drudgery for a lot of patients, and just for about any patients, it's drudgery some of the time.

Part of the nature of rehabilitation of brain injury is repetition, and a lot of the tasks that need to be repeated seem to be simple and therefore very aggravating or demeaning.

So rather than repeat something to patients over and over again or have them do something over and over again, if you put it in the form of a game where they have some movements, sounds, color, and feedback as to quality of performance, they will sit and do that for longer periods of time than they will, say, sit down and draw a line, memorize a list of words, or pay attention to some other inanimate object.

But when it's a game, it's not conceived of as a chore. It's more fun, and it has that challenge built into it when the person



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## IOWA POLICE CAPTURE KID CRIMINALS

Police in Des Moines, Iowa, attribute a rash of burglaries there to youngsters' desires to get more money to play video games.

In a July 28 story in the *Tribune*, Des Moines police were attributed with saying that many of the 40 youths involved in more than 100 burglaries "confessed they were using their ill-gotten goods for video games."

In response to a *Play Meter* inquiry, Detective Woody Fogle of the youth division of the Des Moines Police Department, said he was aware of two such incidents occurring in the territory he covers, the west side of the city.

One youth admitted to burglarizing 11 businesses and many more residences to get money to play the games.

"He took another officer and myself around town and pointed out the places he had broken into and told us how he had gotten in each one," Fogle said.

"He sold his stolen merchandise to a fence and used the money to play video games at a Des Moines restaurant," Fogle continued. "He spent between \$800 and \$900 in about three weeks."

Another youth, 13 years old, was caught breaking into houses in his own neighborhood where he was stealing money and valuables to support his video "habit."

Fogle said the boy had become so addicted to *Pac-Man* that he was playing between five and seven hours a day.

"He started about 9 o'clock in the morning, committed the burglaries, went to the bank (for change), and then played *Pac-Man* until he had to go home to get a phone call from his mother, who was checking on him.

"He'd then go back and play more *Pac-Man*. Other times he'd even miss the phone calls. At night, he'd go home for dinner and go right back again," Fogle said.

The youth was playing at a Conoco gasoline station and was identified as the thief when the station attendant told one of the theft victims the boy had cashed in some old silver coins from a collection taken from that victim.

Fogle said the boy was taken back to the three homes he broke into by his father who had the boy apologize for

his actions and make arrangements to repay the victims a total of about \$350.

## Short Subjects

After a preliminary order issued in the state Supreme Court in Manhattan by Justice Thomas B. Galligan, New York City inspectors began shutting down 25 businesses with video games. The businesses were declared illegal because they were operating five or more amusement devices which classified them as arcades. The "arcades" were operating in opposition to zoning laws.

Nine of the arcades ordered closed were in Brooklyn, nine in Manhattan, four in Queens, two in the Bronx, and one on Staten Island.

\* \* \* \* \*

Operators in Freeland, Penn., saved themselves some cash by convening with the borough council over an ordinance it had passed. The operators succeeded in eliminating a \$50 fee for the first two games at any location and wiped away a provision that kept youngsters under 16 from playing the games after 10 p.m.

\* \* \* \* \*

Plantation, Fla., officials displayed their intentions to stand behind video game regulations by raiding unapproved locations July 30.

The town, a small community near Miami, restricts games to places designed for leisure activities only. Although town officials said they found 11 games in violation of the law, only three were seized in the raid.

\* \* \* \* \*

Valley's 8-Ball league championships will be held June 2-5 at the Ramada Inn, airport location, in Milwaukee in 1983.

Plans were finalized to expand the number of competing teams from 80 to 112 for the championships. The July planning meeting also resulted in the formation of a committee to develop a constitution for a broader based organization built around placing more responsibility for the league's functioning into the hands of players and operators.

Valley President **Chuck Milhem** indicated the grass roots support for the championships has grown "so fast and so

wide, we've actually reached this point (drawing up a constitution) far sooner than we expected."

\* \* \* \* \*

**N.A.P. Consumer Electronics Corp.**, a North American Phillips company, has won a federal court copyright decision against **Mattel Inc.**

Judge George Leighton found that Mattel's Intellivision games of football, baseball, tennis, hockey, basketball, and soccer all infringe on North American Phillips' Odyssey brand patent rights.

The decision was welcomed by North American Phillips which had been on the losing end of a previous infringement battle with **Midway Manufacturing** over Odyssey's *K. C. Munchkin*.

\* \* \* \* \*

**Rode Island Hospital** cancer researchers have found video games help ease the tension that leads to nausea, vomiting, and general discomfort for youngsters who must undergo chemotherapy treatments.

Preliminary results indicate the games cut the anxiety and physical side effects by 50 percent.

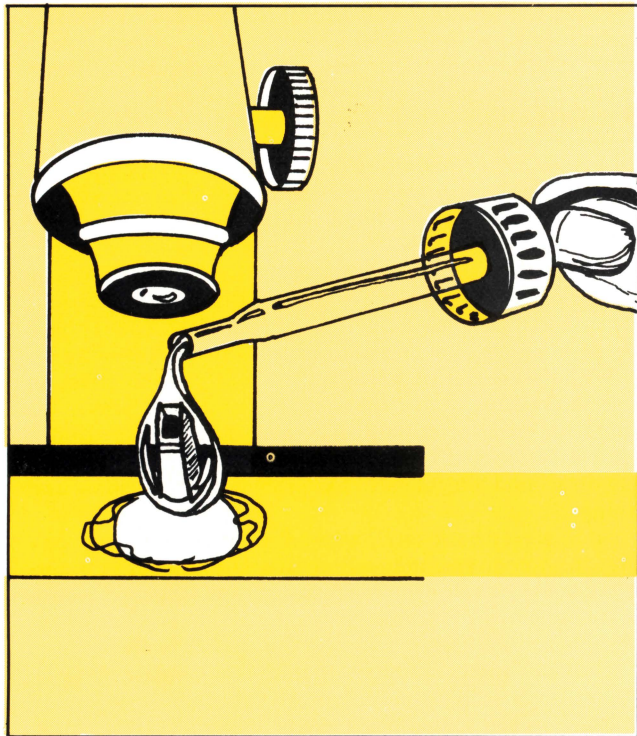
\* \* \* \* \*

**Stern Electronics** has decided to move its entire operation into its factory in Elk Grove Village, Ill., a suburb of Chicago. The building there was purchased by Stern's Universal Research Laboratories subsidiary in 1980 and has 50,000 square feet of facility space.

Stern recently discontinued its pinball manufacturing operations, noting it will concentrate more on video game production.

\* \* \* \* \*

**Bally Manufacturing** racked up record second-quarter and six-month revenues in 1982. For the second quarter, revenues were \$397.5 million as compared to \$232.4 million in the same period last year. Earnings per share were up from 85 cents to \$1.21. Bally President **Robert Mullane** pointed to Bally's Midway division as the highlight performer for the parent company.



# Studies In Video:

## Games aid brain-damaged patients

**Editor's Note:** Here's the first story in a series of articles about uses of video games other than for entertainment. In this first article, Mary Claire Blakeman examines videos and brain-damaged patients.

Dr. William J. Lynch, director of the Brain Injury Rehabilitation Unit of the Veterans Administration Medical Center in Palo Alto, Calif., uses video and computer games in therapy for stroke and other brain impaired patients.

He began collecting data and working with the games in 1978, when a salesman left an Atari home video computer system at the center. Atari has since donated games and provided grants to support some of Dr. Lynch's research. The games, Dr. Lynch said, not only offer an alternative to boring treatments in relearning brain functions, but they may also open up a whole new method of home care.

*PLAY METER:* How did you get involved with video games, and why were you interested in doing research with them?

LYNCH: Originally, the idea of getting the video game equipment was an innocent attempt to find something fun for some of the patients to do. An Atari salesperson came by and showed us his equipment, this was back in '78, and left his demonstrator Atari home video computer system and some programs.

Eventually, we started to pay more attention to what the games involved, because most of us there weren't that familiar with video games except for *Pong*, or some of those basic ones. As more and more games became available, it became clear that a lot of the requirements for performing on the games were the same kind of things we were looking for in our patients, retraining some of their mental abilities. At a very basic level, they (video games) help train attention and concentration, and in more specific ways, they work on eye-hand coordination, memory, language, and math skills depending on the program.

So, in '79 and on, the nursing assistant there, Tom Ragain, and I began to collect more and more information and data on patients. We constructed graphs and charts just to see what was happening, and sure enough, some people did show very definite abilities to learn some of the game tasks. Some didn't too, which was helpful. We collected more and more programs. After a time, Atari began to provide those for us.



Dr. William J. Lynch

*PLAY METER:* Who are the patients you're working with? What age group are they in, and what are some of the disabilities they have?

LYNCH: Being a veterans' hospital, they would have to be of veteran age. So that means a minimum, in most instances, of 18. Although in rare cases, we've had people who signed up early and were injured almost immediately. Most of them are averaging in the middle to late 30s. There seems to be a range where we'll have some in their early 20s and some in their 60s, so they're not all bunched around the 40s.

They are primarily males although we would love to have more females, but I guess not many females are in the service, apparently not drafted, and many of them don't get injured. We've had maybe three or four (females) over the years that I can think of.

The brain disorders are primarily of two types: head injuries or trauma. In the late '70s, and recently of course, we've gotten fewer and fewer war-related injuries. But earlier (The program itself is 12 years old.) in the program's existence, there

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were lots of shrapnel and bullet wounds. Lately, they're mainly vehicular accidents, motorcycle accidents especially.

Aside from trauma or head injuries, we also have a large number of people with strokes. In the general sense, they'll include what we know as strokes or cerebrovascular accidents, as well as circulatory failure—perhaps due to heart disease and heart attacks.

*PLAY METER: You noticed that some of the components of the games work on some of the same skills that you want to work with your patients. Could you explain that a little bit more?*

**LYNCH:** I think in most brain disorders that come to the attention of my program, these are ones that are fairly serious cases such as people that have been in a coma for a while or have suffered some physical disabilities for many months or years.

With that degree of damage, there is often some effect on the person's ability to pay attention. His level of consciousness may be lowered somewhat, or he may simply have trouble paying attention and keeping in tune with the things that are going on around him. He also has problems with memory and learning.

So at a very basic level, we want to improve the person's ability to attend, and not only to attend to a specific information, but to be able to attend for longer and longer periods of time. In order to profit from other phases of the program, he has to be able to pay attention to it so that he can remember.

The video games indirectly do this because in order to play the games successfully and to improve your score, you have to pay attention better and longer. So by looking at their scores, we can see if over time the person is learning the task and is therefore paying attention more effectively.

In terms of eye-hand coordination, which is another common problem with brain injury, virtually all of the arcade games or arcade-type games require some degree of eye-hand coordination to play them skillfully. If you think of even the simplest games such as *Pong*, then on up to *Breakout*, and even to more complex games such as *Space Invaders* or *Pac-Man*, they all require a certain degree of coordination of visual input and motor output.

The person has to pay attention to things happening on the screen, has to guide something from one place to another, has to predict where something is going, how fast it's going, and has to predict intercept points. To put it bluntly, he has to have good eye-hand coordination.

And again, if the person is able to pay attention more effectively and has more effective eye-hand coordination, we would assume that he would learn other more important tasks such as dressing, eating, walking, and even driving in some instances.

It's not to say that this kind of training is unique. I think that rehabilitation for years has emphasized the need to retrain these abilities. But with the electronic video games and computer programs, I think we're attempting to do this more specifically, more pointedly, and more effectively.

*PLAY METER: And retraining is also more fun with video games?*

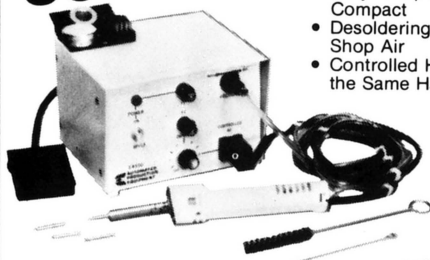
**LYNCH:** Oh, yes. That's really what we're putting first, not necessarily last. Part of the real problem in rehabilitation is that it's out and out drudgery for a lot of patients, and just for about any patients, it's drudgery some of the time.

Part of the nature of rehabilitation of brain injury is repetition, and a lot of the tasks that need to be repeated seem to be simple and therefore very aggravating or demeaning.

So rather than repeat something to patients over and over again or have them do something over and over again, if you put it in the form of a game where they have some movements, sounds, color, and feedback as to quality of performance, they will sit and do that for longer periods of time than they will, say, sit down and draw a line, memorize a list of words, or pay attention to some other inanimate object.

But when it's a game, it's not conceived of as a chore. It's more fun, and it has that challenge built into it when the person

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can build-up his scores and shoot for higher and higher levels of performance.

In most instances, we work with patients individually, but sometimes we work in pairs partly to conserve time. We have found that many patients respond favorably when they work with another patient on the same game. Their scores accelerate quite markedly after they start playing with another person. Although some people worry about this aspect of competition of video games, I think it has a positive aspect to it if it is done in the right way. The competition sometime spurs people onto higher levels, and when they play by themselves, then they get a bit lazy.

**PLAY METER:** *Is that part of the effectiveness in using the games—people can experience some success? They can't tie their shoes yet, but if they can play some of the games and get high scores, they are successful in one area?*

**LYNCH:** I'm fairly certain of that. I think that's true of the game phenomena in general. In a sense games are an equalizer for some people. You take the 4 foot 6 inch person that wants to be a basketball player, or the person that has a severe disability and wants to run track or play baseball.

They can engage in something like that electronically and can compete and can try to guess what pitch the pitcher is going to pitch, try to run out a double to a triple, and all those things that kids like to do. But if they're physically unable or perhaps mentally unable to carry that out in reality, in real physical activity, they can do it electronically. I think that it is quite rewarding for them, and they can develop a certain sense of importance when it's not carried to extremes.

That's why many of the games in the arcades will have the initials or names of kids that score highest, and that's a certain badge of accomplishment for many kids. I think the same thing will go through with patients. Someone who is in a wheelchair and may not be able to use his legs effectively can sit there and with just moving the joystick can engage in an activity that requires some eye-hand coordination, and it's done in a way that doesn't embarrass him if he fails. If he fails nobody really knows except him and maybe the person sitting with him. But there is no big deal made of that—they're just spurred on to try as hard as they can and to do as well as they can.

**PLAY METER:** *What about the flip side of that? Is there any frustration because the patients can't play the games?*

**LYNCH:** There hasn't been many, in my experience, who couldn't play any game. There are some that can't play certain games, and what we try to do is to start them off at a very simple level—usually at something with a very basic level of play, *Breakout* or sometimes *Pong*.

We figure if a person can't play those, then we may be barking up the wrong tree. But with a computer, there are programs privately written by people who, for instance, have a scaled-down version of *Breakout* that allows you to control the width of the paddle so it can be as narrow or as large as you want. So we try to fit the game to the person's ability.

**PLAY METER:** *One of the things that you are talking about is the repetition in therapy, and I know in teaching kids math that the computer can scramble the problems and can repeat the same exercise almost endlessly and not get tired or frustrated the way a teacher would. Is this something that you see opening up in therapy through the use of computers and video games?*

**LYNCH:** Sure. And I think that that is one of the biggest selling points for therapists—they wouldn't have to sit and present something over and over again to the person because that is a frustration for the person and for the therapist. I also see now with home video games that parents can buy them and have their own therapy at home which in a way is better because they spend more time with it.

**PLAY METER:** *I wonder if you could describe the research methods that you use and how they were set up?*

**LYNCH:** I think in the beginning we were just recording scores on patients on a first-come first-serve basis. So to speak we didn't have any particular rhyme or reason to it.

PLAY METER, October 15, 1982



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Then we decided to pick a game that virtually all patients were involved with or started with, and that happened to be *Breakout*. We have a form that we hand out to people here that is separated into five sessions and 10 trials per session. When they reach the end of a game, we record their score.

We also now calculate the median scores and a score that attempts to measure variability, because another thing that has emerged from this is that we want the person not only to achieve a single high score, but we want him to achieve a level that is fairly consistent that he can maintain.

We only get 35 to 40 patients in a given year, so we don't have much turnover. So to compensate for the small numbers, we're going to collect a lot of data over a long period of time on a few patients. Then we check the performance on non-video measures, which would be some of these reaction time measures, and look at how well they perform at dressing, eating, and real-life things. Then we compare to see if these separate measures predict or go along with their video game performance.

If there is a good relationship, that is if one improves at the same rate as the other, or if one improves at a faster rate than the other, we want to know.

*PLAY METER: Do you have any evidence yet that would show the kind of improvements that are taking place?*

LYNCH: Well, we have seen in some instances individuals show a very steady progression in performance, and they appear to show improvement in other areas.

We do a lot of testing when the patient is brought to us, testing in intelligence, dressing, eating, and walking, and we also get the same measures when they leave. So what we'll be able to do after we've had enough people through the video game program, is to then compare the relationship between the two.

*PLAY METER: When people come in for a session, do they (You have 13 to 14 people at a time.) play certain hours each*

*week or do they play games everyday?*

LYNCH: The equipment we have is the home video computer system. Patients are typically assigned to two or three days a week, and each session lasts for about 45 minutes—it depends on what they can deal with at that time. But they usually get two to three hours of structured training a week.

*PLAY METER: Can you say which games seem to work better?*

LYNCH: We're dealing with Atari games only. At the simple level of basic eye-hand coordination, you would have the video olympics which has *Pong* on it, and now we use *Super Breakout* primarily. For attention and memory, we use a program called *Brain Games*. We use *Air-Sea-Battle* once in a while. We use both the home version and the computer version of *Space Invaders*.

*PLAY METER: Are there lower scoring capabilities or more rewards for lower scoring for disabled people?*

LYNCH: I think that that theme is one worth mentioning and underscoring. Most games start at too high a level for patients and if there was a way to automatically lower the requirements of a game so that each game had a very low level and then maybe two or three levels before it reached the standard level, that would be helpful. I think it would be nice to have a special line of software that is for special populations.

*PLAY METER: It sounds like most of the results that you have had with video games have been beneficial. A lot of parents are worried about the detrimental effects of the games, particularly in the arcades. Is there anything you have found that has been detrimental?*

LYNCH: It is certainly a matter of perspective, and I think it is almost an apples and oranges argument because the way we are using games is very controlled in a sense that we are controlling the use of the game, and it is done for a therapeutic purpose. So we really don't have a problem with people getting addicted.●

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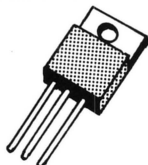
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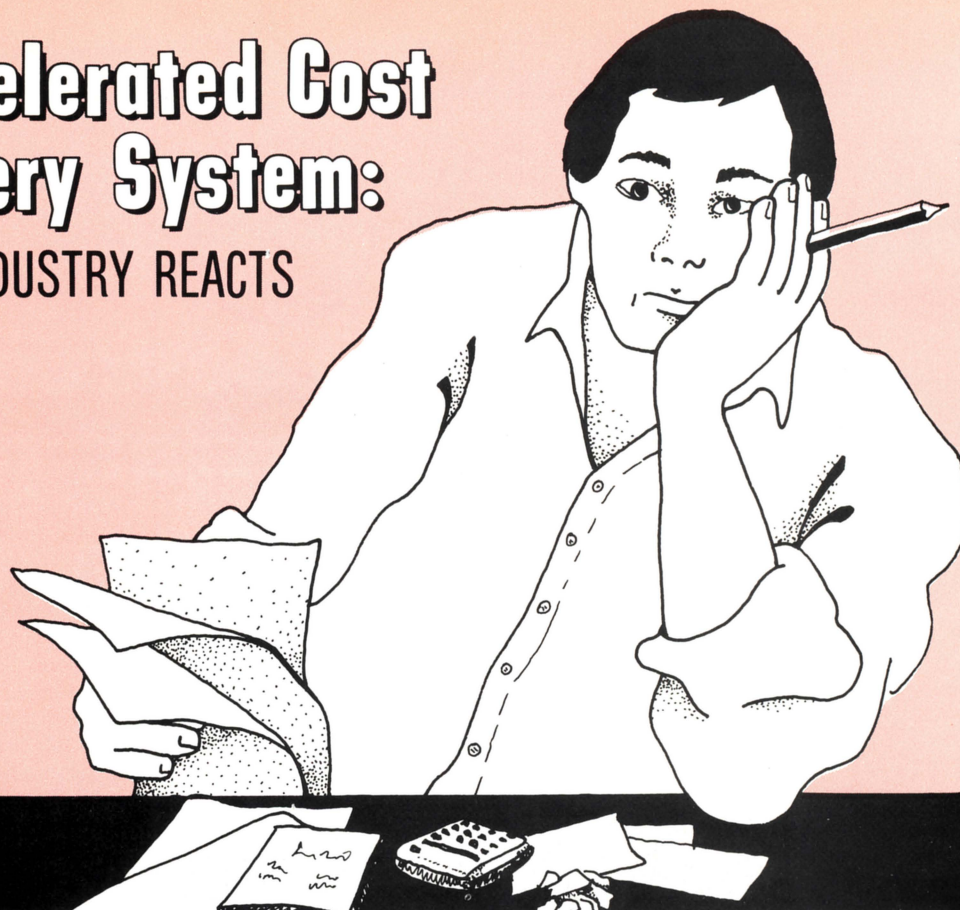
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# The Accelerated Cost Recovery System:

## THE INDUSTRY REACTS



By Mike Shaw

**T**ax talk is topical these days. The federal government needs to cover a \$100 billion plus budget deficit. And, despite the portions the feds are doling out, they have severely cut financing of activities on the state and local levels. So states and cities need more tax money too.

Contemporary history tells us that when governments need money, they go after middle income individuals. The very rich are too powerful to be attacked, and the very poor don't have anything left to give up. So it's always the people in the middle who pay.

Consequently, while the feds are finding ways to eliminate some of the deductions you might have been using to stay afloat, local governments are sticking their hands in your till for their *fair* share of *your* profits.

It's maddening. It's frustrating. And, in most instances, it's impossible to prevent.

Long before the harsh realities of a \$100 billion budget deficit caused the Reagan economic team to re-think its tax program, the president had pushed for and achieved a tax reduction and reform bill. That program was designed to put more American dollars into action and to encourage businesses to invest in the future. It was designed to get money flowing between businesses and individuals rather than from individuals into the government's hands.

### Foolish efforts?

That original tax reform bill seems ancient history now. Many believe

demands for new taxes have made earlier efforts appear somewhat foolish. But, nevertheless, the first tax package has become law, and we are operating under some of its declarations.

Ironically, at least one provision of the measure designed to help businesses get moving has been interpreted as a severe blow to the coin-op industry. As part of the cleverly titled Economic Recovery Tax Act of 1981, Congress passed into law a change in the ways businesses can depreciate new equipment.

Previous to the reform, a "double declining" balance depreciation was possible. Viewed through the eyes of a coin-op amusement operator, an individual could depreciate the full cost of a coin-op game over a period of three years, taking the bulk of that depreciation the very first year—about two-thirds of it. Hence the term "double" declining balance.

The type of depreciation now required by law is to make deductions based on a new system known as the Accelerated Cost Recovery System (ACRS). That is, basically, depreciating the cost of a piece of equipment almost equally over five years.

Now if you own tractors, the ACRS is great. But if you own video games, whose usefulness is estimated to expire about halfway through their first year, a five-year equally distributed depreciation appears disastrous. At least it appears tragic during this first year, when, after all the inequities are taken into consideration, only 15 percent of the money invested in new

equipment can be depreciated.

### Don't panic!

But before panic sets in, and much has already, it must be warned that all the answers about ACRS are not in. And, as part of a larger overall package that includes investment tax credits, some industry spokesmen contend that the ACRS might not make much of a difference at all, or even be beneficial to the game operator. (See "How to Pump Up Your Depreciation—Legally," this issue.)

Most importantly, we should note that no one we know of has looked thoroughly enough into this issue to state an explanation unequivocally one way or the other.

However, some industry leaders are certainly upset about what the new depreciation schedule will do to this year's tax burdens for operators, and consequently what it is doing right now to their interest in buying new equipment. After all, at first glance, the new depreciation law appears to modify much of the excitement over the newest videos. If an operator is going to have to wait until 1986 to depreciate some of the cost that he would have been able to use this year, it is enough to scare distributors who are already reeling from manufacturers' overproduction and increased prices.

Distributor John Gatens of Southwest Vending is upset enough about the new depreciation law that he has already petitioned the Internal Revenue Service three times to let him show cause why coin operators should be relieved from a five-

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year depreciation schedule.

"The law seriously hampers operators' abilities to upgrade their equipment," Gatens said summing up his feelings on the issue. "Sure, the new depreciation has helped some industries, but it has hurt us."

His protests so far have fallen on unresponsive ears.

### Growing discontent

Gatens is not the only industry executive petitioning for a change. The Amusement and Music Operators Association is reported to be appealing to a senate committee. But, to date, the appeals have also fallen on deaf ears.

"The IRS has said it will consider listening to us in about four months (from July), but we are stuck with it for 1982," Gatens said.

Gatens formulates his objections based on the studies of his in-house CPAs and is passing the information through a battery of attorneys gearing up for a battle with the IRS. In the meantime, though, Gatens said, operators will have to abide by the law. But they can issue a check with the understanding that the payment is being made "in protest."

One of the industry's most respected business consultants is Charles Ross of Innovative Management Consultants. Ross, whose Arkansas location is close to Gatens' Texas spot, is far from Gatens in his estimation of the new depreciation situation.

"There is no need for panic," Ross stressed. "Some operators are so alarmed they are simply ignoring the law and filing under the old law."

Ross believes a look at the overall life of the games and other ways to alter the income picture of video games should temper any reaction to the new law.

### Salvaging the law

"After-tax income is the important figure to remember," Ross explained, not how you get to that figure.

An investment tax credit of 10 percent for the year in which each piece of equipment is bought will make up some of the difference between the ACRS and double declining balance depreciation. Also, income from the resale of equipment not fully depreciated can be salvaged from heavy taxation.

Again, it must be stressed that a final verdict on the new depreciation schedule is not in, but Ross, and others like him, contend "preliminary indications show the new law does not change things much."

The industry's opinions on the new ACRS are obviously mixed. But whether you feel the new system is disastrous and needs to be changed as John Gatens does, that there is little actual difference between the two laws as Charles Ross proposes, or that there are ways you can use the new tax law to your benefit as Irving Blackman writes in the following article, the one issue you cannot ignore is that the ACRS is a law and must be followed. •

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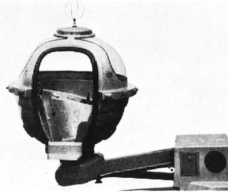
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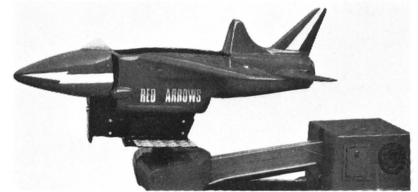
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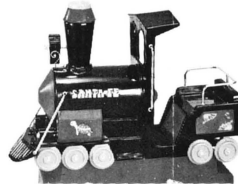
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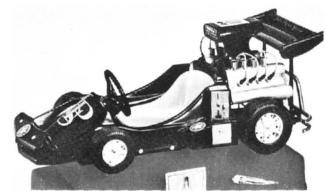


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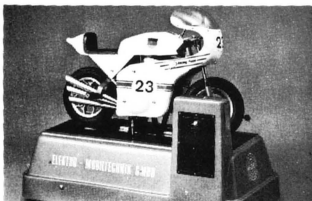
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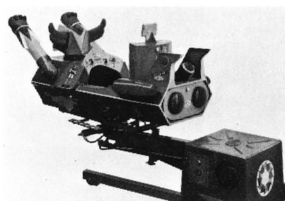
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(Part one of a two-part article.)

# How to pump up your depreciation...legally

By Irving L. Blackman and James L. Harfield

It takes a lot of skill and a little bit of luck to score high when playing a video game. But it's fun to keep trying. Today, the operator needs more than just skill and luck to win the coin-op amusement business game—he needs cash. More importantly, if he loses the game, he can't keep trying—he's out of business.

Game rooms are bigger. The cost per square foot of space has skyrocketed. And it takes more machines to fill up the space. With the advent of video games, the average unit cost per game is up from about \$1,250 to \$2,500. A \$35,000 investment placed 25 machines or so on the floor just five years ago. Today, an equivalent operation might utilize 40 machines requiring a \$100,000 investment.

In days gone by, the old revenue products were pinball machines. Although new pinball machines were introduced constantly, some of the old pinballs produced adequate revenues.

Unquestionably, the advent of video games is a boon to the industry. But there's a new problem—obsolescence. The competition between manufacturers to increase market share is fierce. Some machines bomb; no one plays the proud beauty. Even popular games fade and are eventually replaced.

From a tax standpoint, the operator is between a rock and a hard place. The new Accelerated Cost Recovery System depreciation rules dictate a five-year life for game-room machines.

You know it and we know it—it is a rare game that produces income for more than three years in this tough competition marketplace. Yet, the new tax law pins a five-year depreciation life on you. Is there any way to beat this unfair rule? Happily, there is a way to increase your early-year depreciation deductions.

First, let's take a look at the ACRS rules as applied to personal property in a five-year class: this includes all types of amuse-

ment machines. The best way to follow the new rules is through this example. Assume Joe Coin acquired 40 new machines for his game room for \$100,000 on Jan. 22, 1982. The statutory percentages are 15 percent for year one, 22 percent for year two, and 21 percent for years three, four, and five. The depreciation for 1982 is simply \$15,000 (15 percent of \$100,000). The depreciation would have been the identical amount if the machines had been acquired and put into service on Dec. 31, 1982.

The new law also provides for a straight-line election. For five-year property, you can elect a straight-line life of either five,

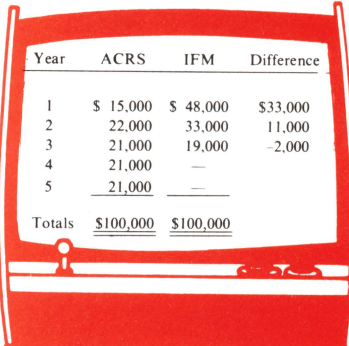
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**From a tax standpoint, the operator is between a rock and a hard place.**

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12, or 25 years. For the operator, a straight-line election is useless.

But wait, there is another election possible under the new law. You can elect to use the "income forecasting method" (IFM). Under this method, you forecast (based on prior experience) how much income will be produced in each year you expect to be operating your new machines. Suppose Joe Coin elects to use the IFM on his \$100,000 new machine purchase for 1982. Assume a prior years' income analysis of similar machines shows income was produced at the following rates: year one—48 percent, year two—33 percent, and year three—19 percent. Following is a comparison of Joe's depreciation results under ACRS and IFM:



Year	ACRS	IFM	Difference
1	\$ 15,000	\$ 48,000	\$33,000
2	22,000	33,000	11,000
3	21,000	19,000	-2,000
4	21,000	—	—
5	21,000	—	—
Totals	<u>\$100,000</u>	<u>\$100,000</u>	

By the way, the percentages used in the above IFM example are the actual percentages used by our office for arcade operators. His depreciation deduction was increased by more than \$33,000 in the first year.

Your first question has got to be, "Is it legal?" The answer is YES. Your right to make this election is buried in a maze of complexity in the Internal Revenue Code. Tell your professional to look at Section 168(e)...And good luck! •

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Vice President Will Laurie talks with open house guests about Bally-Advance's move.



Bob Breither, GDI-Destron sales manager, takes his turn on his company's game, Slither.



Say Cheese! Guests stand in line for computer print-out photos.

# Bally-Advance celebrates

By Mary Claire Blakeman

More than 600 people showed up for the gala open house for Bally-Advance, but they were hardly elbow to elbow. In fact, they had 47,000 square feet to wander around in as the company celebrated the official opening of its spacious new quarters in South San Francisco on August 8.

After more than 40 years on Howard Street near downtown San Francisco, Advance Automatic left behind its old building and name when it moved this past June. A new sign for Bally-Advance graces the front of the building which is located in the Cabot, Cabot, and Forbes industrial park.

"We had run out of room; we only had 31,000 square-feet," Bally-Advance President Chat McMurdie said. "We only had one loading dock, and now we have six loading docks and now we're all on one floor—in the other building there were three stories.

"We can now give better service," McMurdie added. "Before, people would be waiting in the alley for an hour and a half because of the one loading dock. Now we have 50 parking stalls so they won't get traffic tickets anymore."

Most of the guests approved of the move, but a few local customers said the old location involved less travel time, and

some workers said they too had to get used to the greater distances among departments.

## Positive move

In general, though, the response to the move was positive. "It's just more efficient all the way around," said Bally-Advance sales representative Pat Russell. "Just the ability of customers to pick up equipment—that alone is great."

Displayed at the open house was some equipment customers may be picking up from Bally-Advance including the videos *Donkey Kong Junior*, *Slither*, and *Tutankham*.

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Donkey Kong Junior *outfoxes* players just like his papa, Donkey Kong, does.

## open house

Photos by Steve Wilber

"Pin games are also coming back," Pat Russell said as she watched the crowds around the games. "Maybe there's a new generation who have been exposed to pin-balls in the arcades." Some of the pins on display included *Speak Easy*, *Mr. & Mrs. Pac-Man*, *Rapid Fire*, and *Caveman*. Other guests gathered around the "Compu-graphics" machine for their computer print-out photos.

Besides playing games on the display floor, guests also enjoyed a large barbeque buffet, and some sported Hawaiian leis as part of the prizes in Bally-Advance's Hawaiian promotion.

Such a move and celebration may seem inconsistent in the face of the current economic downturn, but McMurdie explained that the decision to change locations did not take place overnight. "We didn't make the decision yesterday," McMurdie said. "We thought we'd move two years ago, and then about nine months ago, we thought we had a building."

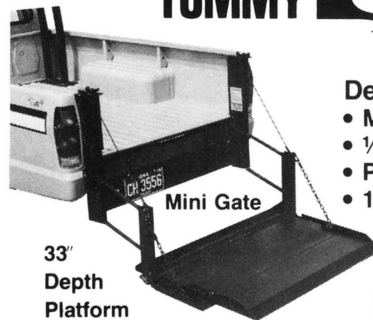
McMurdie acknowledged the slump in today's economy but added: "Our business is going to survive, and it's going to do well. There will be a purging of some businesses, but companies that have stability, integrity, good marketing, and good follow-up with customers will do OK."

### Better times ahead

"There's a lot of resiliency in the industry," he continued, "and while it's soft today, I don't think it will go on forever. We've always come up with something."

"We're proud of our building," McMurdie added. "We think we've done something—and we're always trying to do something—that elevates the industry and promotes it."

## TOMMY GATE

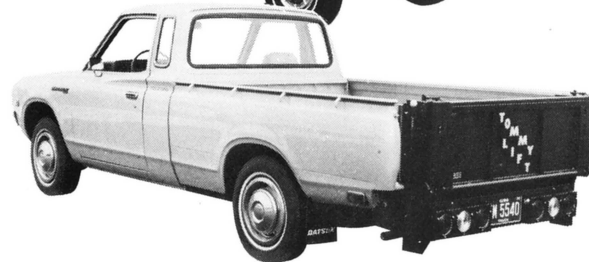


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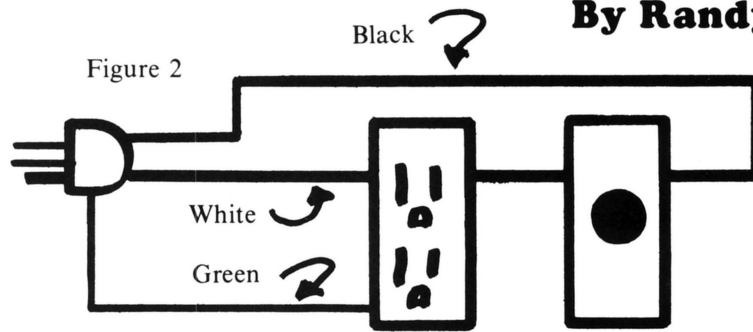


Figure 2

Cool it!

# Build a soldering iron temperature controller

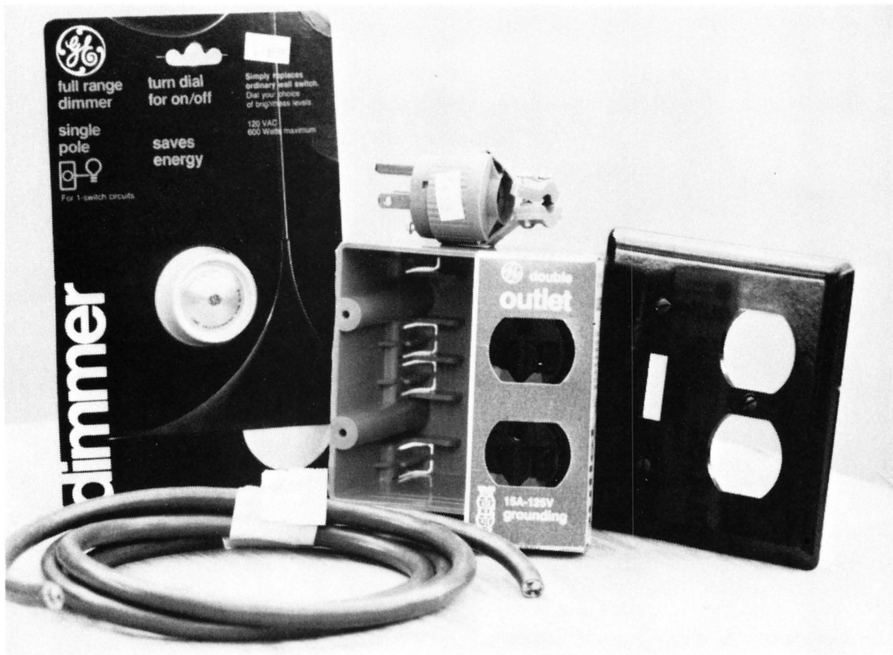


Figure 1

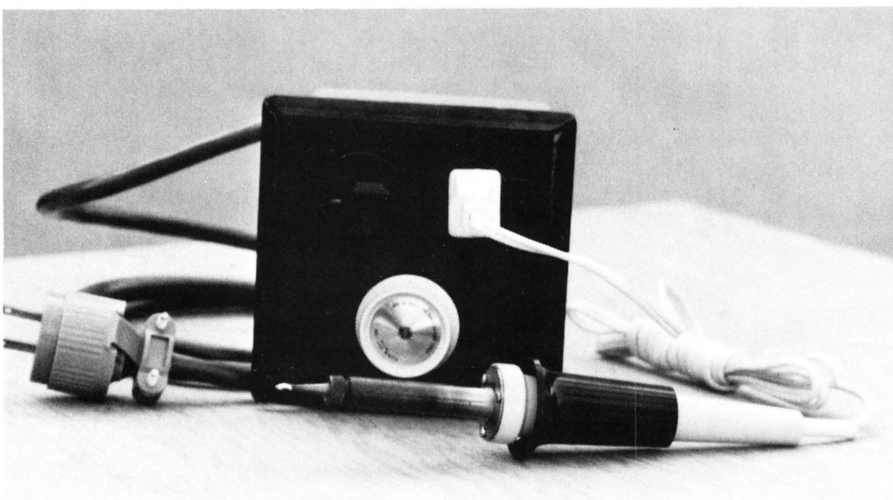


Figure 3

The most important consideration in removing and replacing components that are soldered onto a printed circuit board is to do so without damaging the "traces" and "solder pads" that are bonded to the surface of the board itself. While you probably won't damage a component by excessive heating, an iron that's too hot can easily lift the pads and traces right off the surface of the board.

If you don't perform enough board repairs to justify spending around \$75 for a temperature controlled soldering station, here's a soldering iron temperature controller that you can build for less than \$14 that's the next best thing. This controller will work for any brand of non-temperature controlled soldering iron.

### Construction

The whole project is quite simple and can be easily built in well under an hour. The temperature controller is simply a lamp dimmer and AC receptacle mounted in a plastic conduit box. (See Figure 1) The dimmer is a common, 600 watt type that is available at hardware stores. The connection diagram is shown in Figure 2.

If you cannot find a plastic conduit box, a metal box can also be used. The plastic box is lighter and has a built-in strain relief/clamp for the AC cord.

### Using the controller

To use the controller, the soldering iron is simply plugged into the AC receptacle. (See Figure 3) The temperature is then controlled by the dimmer setting.

The advantage of the dimmer controller over a more sophisticated, controlled temperature iron is its low cost.

The disadvantage is that unlike expensive soldering stations that automatically kick-in full power when soldering large components and areas, the dimmer-controlled iron must be manually regulated when full power is needed.

For further information about soldering, refer to page 76 in the *Play Meter*, August 1, 1982 issue.



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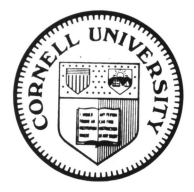
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# THE CALENDAR

**September 24—25**

West Virginia Music & Vending Association convention, Ramada Inn, South Charleston, West Virginia

**September 30—October 2**

Japan Amusement Machine Show, Exhibition Hall of the International Trade Center, Harumi, Tokyo

**October 7—10**

NAMA convention and exhibit, The Rivergate, New Orleans

**October 9**

Washington Amusement & Music Operators Association, Davenport Hotel, Spokane

**October 14—17**

ENADA (exhibition of coin-op amusement machines), Congress Building (EUR), Rome, Italy

**October 15—16**

Amusement and Music Operators of Virginia, annual convention and trade show, John Marshall Hotel, Richmond

**October 28—30**

SADA 82, Spanish Amusement Trade Show and Conference, Convention Hall of Torremolinos, Malaga, co-sponsored by Facomare and Andemar—two Spanish trade associations

**October 28-31**

The Greater New York Video & Electronic Games Show, Massau Veterans Memorial Coliseum, Long Island Metropolitan New York area

**November 18—20**

AMOA Exposition, Hyatt Regency Downtown, Chicago

**November 18—20**

IAAPA annual convention (Parks Show), Bartle Hall, Kansas City

**1983**

**January 10—13**

ATE 39th Amusement Trades Exhibition, Olympia, London, England

**March 16—17**

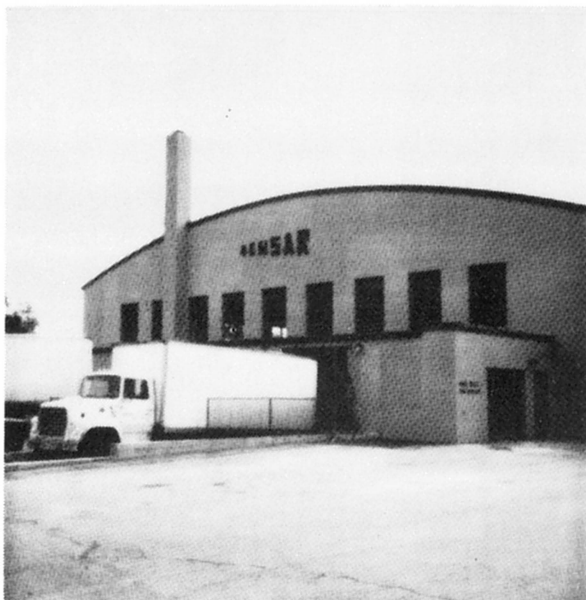
Nihon Amusement-Machine Operator's Association, second amusement expo, Shinjuku N.S. Building, near Keio Plaza Hotel, Shinjuku, Tokyo.

**March 25—27**

Amusement Operators Expo '83, O'Hare Exhibition Center, Chicago

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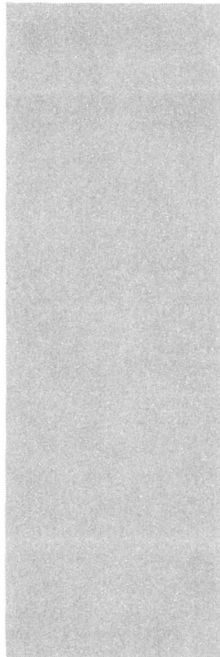
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# Business

**“H**ow much cash is required in my business?” is often a troublesome question facing the owner-manager of a small company. And rightly so, because cash is the fuel that is necessary for operating a successful business.

Actually there are no set guidelines—the amount considered adequate for one type of business may be wholly insufficient for another. In thinking about cash needs, businessmen should take into account the variables existing in an individual situation—current debt, expected cash receipts, length of collection period, and plans for expansion.

An adequate cash supply for your business is one that will enable you to pay your current operating costs on time and provide for future expansion costs. Thus, you need to think about and provide cash for two kinds of costs.

**Working Cash**, as the term implies, is the cash needed to purchase materials, to pay wages, and to pay for overhead expenses such as rent, utilities, insurance, and maintenance of business premises.

**Capital cash** is cash needed for the purchase of fixed assets—delivery vehicles, tools, fixtures, and machinery.

## Cash sources

The source of working cash is usually from fees collected, from sales of merchandise, both current and prior, while capital cash is from fees or sales, from borrowed monies, or from accumulations of sales collected in excess of working cash and personal requirements. When the owner-manager attempts to meet expansion needs without resorting to financing, it will be necessary to ration personal drawings until enough cash is accumulated.

An owner-manager should have some concept of which portions of his cash he is going to use as capital cash and which as working cash. Short of segregating cash in separate accounts, an individual owner should at least mentally set aside funds so that adequate cash is available for each purpose.

Cash supply is not just the money on deposit in one's bank account, but it also includes deposits in transit, cash on hand, certificates, and notes readily convertible into cash.

Under ordinary circumstances, the net cash flow of a business should be in excess of net profit because of the depreciation charge-off against profits.

But profit cannot be used for additional

working capital requirements if it has been completely distributed or withdrawn by the owner-manager. Thought should be given to the future needs for cash brought about by possibly outgrowing present office or business premises and by obsolescence of present equipment.

One way to chart a path is to prepare a record showing the business' estimated gross income, the estimated overhead expenses, and monthly cash analyses of income and outgo. Those who have not previously kept such records should find it easier if they start with the short-term projection so as to leave room for correction of estimates too far out of line.

## Budget follow-through

No budget is worth the time and effort if there is no follow-through. While the businessman can't control the gross sales generated, he can exercise some measure of control of cash income by seeing that there is an adequate system for collecting outstanding fees. On the pay-out side, control over purchasing should be exercised and any deviation of total overall cash spent over budgeted figures should be examined.

One of the most obvious ways of adhering to a budgeted figure for the owner-managers' drawing is to decide on a figure and draw a check from the business check account and deposit this to a personal check account. This will take away the temptation to pay all personal bills, often in excess of a practical amount, from the business check account.

There are ways to improve a cash position. One is to time personal withdrawals so that they don't conflict with the time of the month when creditors' bills are ordinarily paid. Another way is to send out bills immediately after sale of goods is made, and to send statements early and often.

Extra payments to the owner-manager should be made periodically, only after first ascertaining that such additional payments are warranted by the figures shown on the actual cash statements. Finally, proper purchasing is a way to save cash. Avoid duplication of purchases and payment of high prices by the establishment of a proper inventory and supply record, and delegate the authority to only one employee or retain the authority yourself.

The businessman who is hard-pressed for cash can examine leasing as a means of conserving cash and maintaining a better

# cash requirements

By Joseph Arkin, C.P.A.

cash position. While it sometimes costs more, the overall cash saving in capital outlay is a prime consideration in deciding to lease instead of making an outright purchase.

Cash is a valuable commodity. It allows for growth; it provides the wherewithal for making timely, profitable purchases and investments; it times one over temporary rough spots; and it gives rise to a favorable

credit rating through the prompt and timely payment of bills.

Presented below is a suggested form for determining your direction—fiscal order or fiscal chaos!

## CASH BUDGET

PERIOD OF JANUARY 1, 19 TO MARCH 31, 19

	January Budget Actual	February Budget Actual	March Budget Actual
<b>Expected Cash Receipts:</b>			
1. Cash sales	\$	\$	\$
2. Accounts Receivable collected			
3. Miscellaneous income	_____	_____	_____
4. Total Cash receipts	\$ _____	\$ _____	\$ _____
<b>Expected Cash Payments:</b>			
5. Merchandise purchases	\$	\$	\$
6. Wages			
7. Office expenses			
8. Maintenance of premises			
9. New equipment			
10. Advertising			
11. Selling expenses			
12. Owner-Manager drawing			
13. Rent			
14. General expenses			
15. Taxes, insurance, etc.	_____	_____	_____
16. Total Cash Payments	\$ _____	\$ _____	\$ _____
17. Cash balance at beginning of month	_____	_____	_____
18. Cash increase or decrease Line 4-16	\$ _____	\$ _____	\$ _____
19. Expected cash balance end of month Line 17 plus or minus Line 18	\$ _____	\$ _____	\$ _____

**NOTE:** If the figures in the actual column are deficient in amount to cover expenses and drawings, additional cash is needed through borrowing, through reduction of line 12, or through greater exercise of control over expenses. Where line 18 constantly shows increases, the owner-manager can make plans for expansion, for the acquisition of capital equipment, or for an increase in drawings for own use.

The above is but an oversimplification of what each business owner has to prepare to chart a course of action to conduct an orderly business.

# OUR 'CADES

By  
Bill  
Kurtz

## Keep that traffic movin'

When you're setting up your arcade, be sure to consider traffic flow to all areas of the room, so players can easily move from game to game.

Sound obvious? Not to some arcade owners who cram games in wherever they seem to fit.

I've been in arcades with room for only two people to walk side by side from the front to the back of the room. And if someone is standing and watching a game being played, the customers either have to wait or else find some way to get the spectator to move if they want to get by.

Pete Entringer of Audio Visual Amusements said that about 8 feet is usually enough space to allow for players, spectators, and people passing through. But it all depends on where you place your games.

"I'll go with the wall first, filling the space against the wall, and then if there's room, I'll put something in the middle of the floor," Entringer said. "But every room is different, and there's not always space for something in the middle."

While some arcades fill in the center floor space with back-to-back upright videos, many have "specialty" pieces such as cocktail videos, cockpit games, and foosball tables.

### Games in the center

Murray Panitz of Just Fun arcades on

the East Coast said he puts "low" games in the center of the floor.

"We put cocktail tables in the center because we don't want to block the visibility, although it depends on the store. We usually leave the center open unless the

Arranging your machines to get the best traffic flow should be a major consideration for your arcade.

store is 25 to 30 feet or wider," he said.

Cliff Rydell of Bensar Distributing in New Richmond, Ohio, agreed that visibility is important for an arcade.

"We try to arrange everything in a complete rectangle, so the attendant can see

everything. It cuts down on vandalism," he said.

Still, Panitz said there is no hard and fast blueprint for laying out an arcade. In fact, he said he periodically rearranges the games in his arcades.

"I don't want people to go to the same spot time and time again, so I change arrangements every couple of months. It gives the arcade a fresh look," he said.

### Arcade traffic

Keeping the traffic moving is also important in your arcade.

You may want to put some of your strong games near the entrance so people walking by will see their favorite machine and come in to play it.

"A new game in front will get the players in, but too many of them right up front is bad because the entrance will get congested," Panitz said. "You want to get players to the back of your arcade, which could otherwise be dead, so put some of your better pieces there, too."

Entringer agreed. "I put some newer games up front, but I scatter the better games around the arcade. Otherwise, there would be a crowd of players by the door and people wouldn't be able to get in."

Arranging your machines to get the best traffic flow should be a major consideration for your arcade. A good traffic flow can lead to a good quarter flow. ●

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# FRANK'S CRANKS

By  
Frank  
Seninsky

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## Rating the 'Mr. & Mrs.'

A new cabinet design is the first thing you will notice about Bally's latest pinball, *Mr. & Mrs. Pac-Man*. This style cabinet was first introduced with *Rapid Fire* and has been received well. It does make the game stand out from other pinballs.

The head or lightbox is actually two pieces. The frontglass is locked in place with a regular head lock located on the top of the lightbox. This type of lock setup is much simpler and more secure than the type Bally used on past games, where the lock was located on the top right side of the head. On *Mr. & Mrs. Pac-Man*, the backglass will stay secure even if the locks "slip" a little, as all locks do.

Bally has placed a cardboard-type insulator behind the circuit boards in the lightbox. This replaces the sheet metal that was used on earlier games. There were instances where board components would fail, and the only clue as to why was a tiny burn mark on the sheet metal behind the board.

The board would rub against the sheet metal, which is ground, and "puff." The cardboard insulation will reduce these types of shorts. Foil papers is used on *Mr. & Mrs.* to connect each board to ground. Be careful not to rip this foil when removing and replacing boards.

### Preventative tips

As with any new design, there are bound to be small problems that arise once the game is in the field. When you become aware of potential service call areas, it's easy to do a little preventative maintenance. Some of the things I noticed that can be looked into are:

1. There is a sheet metal door inside the lightbox onto which a florescent light is mounted. If the screw that locks the door in place is not replaced when closing the door, the door will vibrate forward and drop down on the right side about 1/2 inch. When the game is moved, this "play" in the door will cause the florescent light to fail or break. This could also happen if a player

gives the game a good jolt.

To many, this probably sounds like a very small thing to "crank" about, but more problems can arise from not tightening this one screw.

On at least five *Mr. & Mrs.*, I found that the edges of this metal door have cut into the harness wires in the lightbox. If fuses keep blowing, it's a good idea to check these harnesses and reposition them away from the door edges, if necessary. Bally agrees that some type of latch or wing nut would be easier for the operator to work with than this present screw that holds the door in position. Bally's engineering department is redesigning a door latch.

2. On many early run games, there were three pairs of 15-pin connectors and two pairs of nine-pin connectors (male and female) in the lightbox that were not marked. It is easy to plug the wrong connectors together and damage sections of the game (blow the 190 volt regulator, for example). Bally has corrected this and all the connectors are now color coded.

To avoid this ever happening to you, it's best to match the wire colors every time you connect two connector ends. I try to match up at least three colors in three different positions, just to be sure.

3. The 5-amp fuse (F4) blows on *Mr. & Mrs.* every once in a while. The main reason for this is that the end-of-stroke switches on the flippers are not adjusted perfectly. It's impossible to adjust these and keep them adjusted properly because they can move apart or together from constant use.

A good rule to follow is that you should use a 5-amp fuse for two flipper games, a 6-amp fuse for three flipper games, and a 7-amp fuse for four flipper games. I have even gone to a 10-amp fuse on *Mr. & Mrs.* in an emergency, but I don't recommend leaving it in for a long period.

Also, pull each flipper plunger in by hand, and adjust the end-of-stroke switch so that it opens at least 1/16 inch when the plunger is fully pulled in. These switches, as well as the flipper button switches,

should be filed and kept smooth and clean so the flippers will have enough strength.

4. There have been some borderline problems with the 25-amp bridge rectifier that was used in the switch illumination circuit on past games. Bally has changed over to a 35-amp bridge made by General Instrument (part #E-602-7) that will hold up much better. This old bridge is Bally part #E-602-6.

When changing a bridge, make sure you "flush mount" the bridge to the board. This must be done for heat sink purposes. Use a good heat sink compound; silicone grease is recommended. Bally has divided the switch illumination circuit into two sections each with its own 10-amp fuse. This will make it easier to find a problem because you can narrow it down to either one of these two sections.

### Necessary capacitors

The pop bumper switches and bulls-eye type targets have small ceramic disc capacitors across them. These capacitors store a charge of electricity so the switch will be activated when it is closed for a small fraction of a second. These capacitors are especially necessary on the bulls-eye targets because players like these targets to score when the ball hits them hard. The pop bumpers will also be more sensitive with the capacitors.

If one of these capacitors becomes "leaky," erratic operation of the corresponding switch will result. If the capacitor shorts, the switch will always be "closed" and will not produce score when the ball physically closes the switch. A bad cap can also cause the game to just keep scoring, over and over.

Cut away one leg of the capacitor that you think is the culprit. If the scoring stops or the switch works, you got lucky. If, when you replace the cap with a new one, the same problem shows up, you may have a leaky diode. If the diode is bad, the signal can still "bleed" through the capacitor. Most of the time, however, the capacitor will be the problem.



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Another troubleshooting technique that may save time is to lift fuses before playing around with harness wiring. As an example, suppose you have a strobing problem on a digital display. You can lift fuses F1 and F5, on the power board one at a time, and see if the problem goes away.

If, for example, the wiring was shorted onto the lamp insert board in the head, the display would work when the general illumination circuit was disconnected. This tells you that you have a short in the lamp circuit. If the problem disappeared when the other fuse was pulled, you may have a shorted return line on the switch matrix.

### Pac Lite Matrix Board

A new feature is the Pac Lite Matrix Board. This board has yellow and red lights that have colored "boots" placed over the lamps. There have been no problems with this circuit except that the bulbs will burn out occasionally. When putting one of the colored boots onto a lamp, it is easier if the boot is slightly wet with water (or saliva). The heat of the lamp will dry up the water.

Bally apologizes for not having a playfield routing hole in some of the early runs of *Mr. & Mrs.* This is the hole that the playfield support rod fits into when the playfield is opened and held in the raised position.

It's a simple matter to just make an

indentation under the playfield. While you're looking under the playfield, there are two sections where I have found a few wires where the insulation had been rubbed off. The first is on the right side toward the top of the board, where the playfield edge is supported by the cabinet frame rail. When closing up a game, this wire harness can easily get caught between the playfield bottom and the frame rail.

The second area is in the same position but on the left side of the playfield. These areas take a beating and are where many problems can be located. A good mechanic knows where to look.

There are fewer problems with sticky flippers since Bally replaced the flipper return springs with shorter ones. These new springs are working out fine. Keep checking the flipper coil stop brackets because these will vibrate loose although Bally has added lock washers to the mounting screws. You can also put "locktite" on these screws to help keep them tightly in place.

*Mr. & Mrs. Pac-Man* is a well-designed game, as far as pinballs are concerned. It is on the order of *Eight Ball Deluxe*. If it holds up as well as *Eight Ball Deluxe*, we all will be very happy. Aside from the few areas where wires can be cut, and normal loosening of screws and bolts occurs due to vibration, this game has had few service problems. Overall, I'll give it a 7.5 for

reliability, which is very good for a pinball.

### Service Tips

**Electrohome Monitors (*Defender*, *Missile Command*...)** There is a 1.25 amp pigtail fuse (soldered to the board) on the monitor chassis. If you have no high voltage, chances are this fuse is blown. Three times in a row the cause was the HF-1 diode, D503, was shorted. This diode is located (looking from the back of the monitor) on the bottom right of the monitor board just below the flyback transformer base and above the plug connector. It's a good idea to mount a fuse holder to the monitor chassis for the 1.25 amp fuse. This will make it easier to change in the field.

**Rapid Fire**—If all the playfield switches show up as being stuck, it may be because the 5 volts required for the optical switches have been disconnected. You will find this wire running from J4, Pin 3 on the lamp driver board to the playfield.

Thanks to Ed Schmidt, marketing services manager, and Arnie Aarstad, field service manager at Bally, for once more taking time to clarify points on design. They also informed me that Bally has made large posters (18 inches by 10 inches) that explain how to play *Mr. & Mrs. Pac-Man*. Posters were also made for *Rapid Fire*. These have been sent to all Bally Distributors. •

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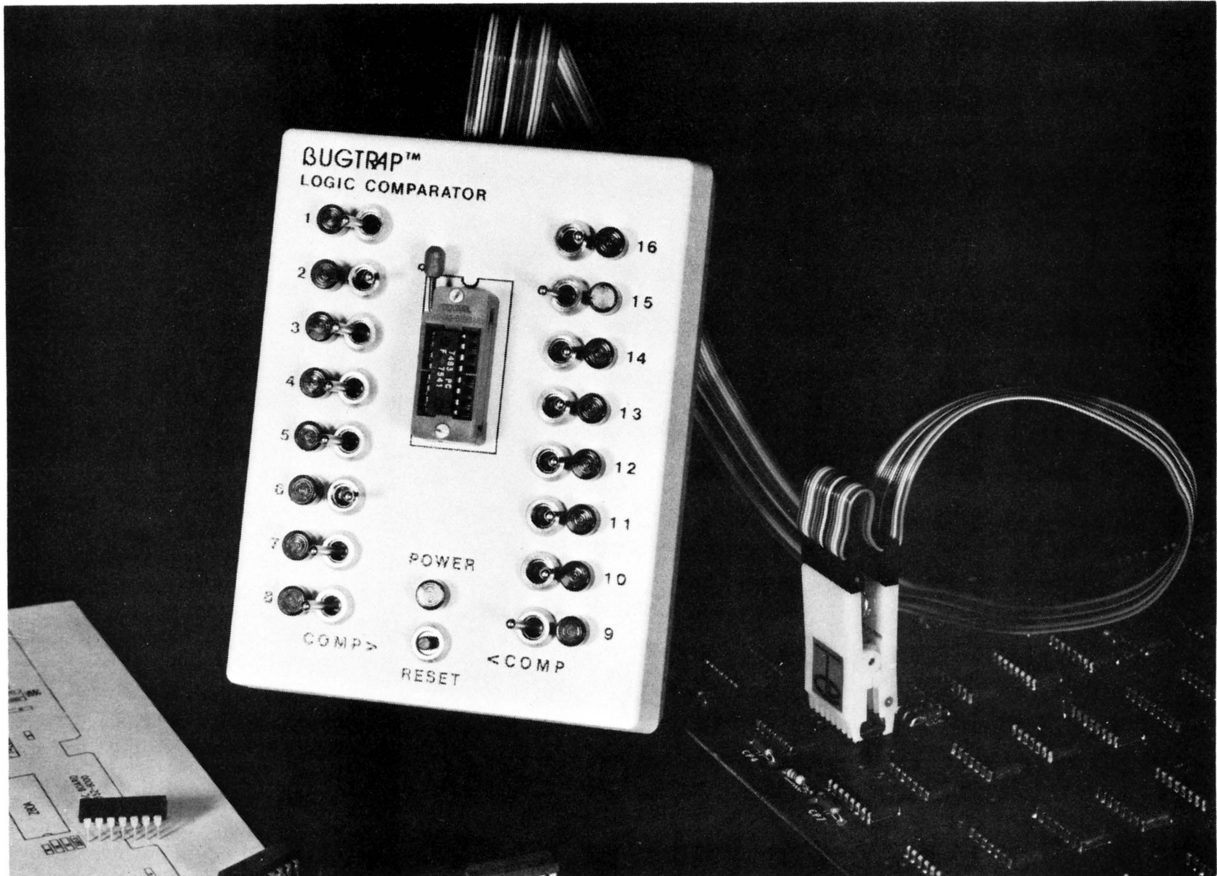
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# FOR INFORMATION

By  
Carol  
Kantor

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## How to advertise game centers by direct mail

**D**irect mail can be a very effective way to advertise and build traffic in a game center. Because the cost per person reached is higher than most alternative advertising media, it is essential that all elements of a mailing program are carefully planned. The list to mail to, the number of people on the list, the format of the mailing, the content of the piece, and the timing of the mailing are all important considerations to maximize the advertising effectiveness.

### The list

You want to reach game players and potential game players who can and will go to your location. The best list for a mailing list includes correct names and addresses of all people who fit this description. If the mailing reaches only eligible players, then your list is 100 percent efficient. However, to reach all the potential market, it is most likely that some of those who get the mailing will not be interested. The objective is to minimize this non-interest group.

### Players first

Your present customers are the best prospects for return visits. Get the names and addresses of these players on your list. Start a player club, offer birthday list specials, or have a newsletter sign-up. Whatever method used, this list should be included in your direct mail ad programs.

### Potentials and unaware players

Those target people who are not current customers but are likely to play games at your center are more difficult to identify. It is probable that the profile of these people is similar to that of your current customers. Therefore, if you know who current customers are, it is easier for you to find a good list of *potentials*.

Consider age, occupation, if student—what school, home, hobbies and other recreation preferences, organizations they belong to, or any other factors that might

lead you to a mailing list with similar demographic backgrounds. School or organization directories are excellent resources for lists. Selecting those groups that your current customers belong to and adding them to your mailing list is a good way to build a good potential list. Sometimes these specialized lists are available for sale through mail houses or civic organizations. However, their accuracy is not as high as direct sources.

**The mailer must catch the recipients' attention with design, encourage them to read the ad, communicate the value and benefit of playing games, and ask them to come to the game center today.**

### General population

Neighborhood household lists are available from most mailing houses. Using these will not be as effective as the carefully selected target lists. If you do choose to mail to a household list, be sure to limit the geographic reach to a few miles around your location. However, a possible lower cost alternative to this would be to hire teenagers to distribute flyers or doorknobs to homes in the neighborhood.

### How many to include on list

The larger the list, the higher the response is a good general philosophy assuming that the actual people on the list are real candidates for responding. The

size of the list can be based on the population statistics in your geographic area and project responses.

If there are 10,000 households in a 3-mile radius of your location and 60 percent have children between 12 and 18 (if this is your market), possibly a list of these 6,500 homes would not be unreasonable to get a good response if the offer has good drawing incentive.

If you have a list of 1,000 known players, a list of 700 other local students at nearby schools, and 300 different target club and organization members in your target, the response will most likely be equivalent to the general household mailing. That is, a qualified list will often get a three times higher response than a general population list.

It is recommended to have as many names as possible. However, limit the list to the best qualified players and potential players who would be likely to go to your location. It is actually better to have a smaller list of people who are in the appropriate target than a large list of maybes.

### What to send

Your direct mail ad must be noticed, it must be read, and it must influence the response you desire. This is accomplished by the format, design, and the content of what is being mailed. Each detail can affect the outcome.

Review the mail you receive for a month. Much of it is advertising. What advertising mail do you notice? What do you read? What do you respond to? Using your own experience is one way to evaluate what your own mailer should be. Also, ask your associates and/or friends to save those direct mail ads that they notice as reference for you. Analyze what is good and not so good about each piece.

Most people look at the return address. If they know the sender or identify this with an area of interest, they will most likely open and/or read the piece. Also, if

the mailer is visually interesting or attractive, it will rise above the clutter and be noticed.

### Rules for direct mail ads

A direct mail ad must persuade the recipient to read the ad and respond.

A direct mail ad must offer something of value to the reader.

A direct mail ad must communicate benefits of the offer.

A direct mail ad must ask for an immediate response.

These rules should be followed when developing a direct mail ad for a game center. The mailer must catch the recipients' attention with design, encourage them to read the ad, communicate the value and benefit of playing games, and ask them to come to the game center to play "today." Coupons or special offers act as extra incentives to help persuade the reader to respond.

Visual interest in a direct mailer for game locations can be accomplished with format and design. A picture of the games being played or of a new game being introduced, a high-impact design relating fun and excitement, or an unusual shape or material can be used to attract attention.

Post cards or self mailers are the most cost effective formats, and with good design, can be the best choice for game center mailings.

Some unusual ideas might be: send out a bag with a wooden nickel inside that can be redeemed for tokens; send a key in a small envelope that may open a "token treasure chest" and encourage players to come try to open the chest; or send out a puzzle or game quiz that is fun to keep and can be brought to the game center for a prize or free plays.

A game center mailer should tell the reader to come play games and why they will benefit from this. "Come experience the exciting action of the newest video game...play free...challenge your friends..." The copy should be enthusiastic and persuasive. To maximize readership, use a general rule of thumb—keep the copy to 100 words or less. (Note: There are exceptions to this rule such as newsletters.) Generally, shorter copy gives a higher probability of readership.

Direct mail ads can be used to promote a contest or special event, introduce a new game, generate traffic at slower times, or develop a new group of customers. Whatever the objective, the mailer should be planned and designed to get the maximum response.

### When to send

Timing can be a critical factor for direct mail advertising. If it is to promote an event, the mailer should arrive at least five to eight days ahead of the necessary response date. A direct mail ad will have

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more visibility if it arrives on a day with fewer other pieces of mail.

It is easier to note *when not to send* a direct mail ad. Avoid Monday delivery, high political mail times, one to four weeks prior to elections, or one to three weeks before Christmas. Otherwise, ask the local post office about any particularly high mail traffic times in your area to avoid.

If the mailer includes a high response type offer, consider staggering the mailing. For example, if you send out a coupon for five free plays to each member of a family and it is going to 10,000 homes, consider sending 2,000 per week for five weeks to spread out the response rate. This will help keep the traffic level from being erratic due to the coupons.

### How to measure response

Set a response objective in the planning stage. This should be weighed against the campaign cost. Although direct mail is one of the most expensive advertising alternatives, it also can have the highest efficiency and response rate. Thus, cost per mailer and cost per response must be evaluated.

Always keep a count of responses using coupons or a tally. Divide by the total pieces sent to determine rate of response. This will vary depending on what is offered. Compare your direct mail programs to see what works best with your list.

A general population mailing is considered excellent with a 1 to 2 percent response. A qualified list mailing should have a much higher rate. One recent game center's direct mail ad got a 35 percent redemption rate on a coupon for four free tokens. Even higher rates of response have been reported for top mailer designs with good offers sent to people on qualified lists.

To evaluate your direct mail ad program, first set a value to each response. A player redeeming a coupon may spend more on that visit (\$3) and may also be a candidate for more visits later (\$1). The response value is arbitrarily set at \$4. Set a response goal: target for 800 responses from a qualified list of 2,500 (32 percent). Set a budget based on this projection: \$3,200 or \$1.28 per mailer including design, production, printing, and postage. If the projected response rate is met or exceeded, then the ad program is a success.

There are other factors to consider for a direct mail campaign. Should you send by first class or bulk mail, use a mailing service to maintain lists, and handle mailing or not? It is an excellent way to promote a game center. But like all other promotions, it requires planning and execution of many details to make a direct mail ad campaign a success.

Consider all the details and plan a direct mail program for your game center. It can be a most effective way to build traffic and profits. ●

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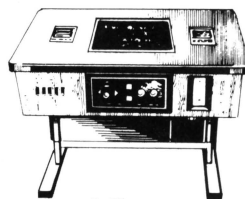
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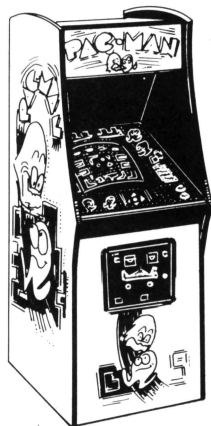
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# PR PROBLEMS/ PR SOLUTIONS

## What to say when...

**Q. What about the typical game location environment? Can minors be exposed to drugs, alcohol, or undesirable elements by hanging out in game centers?**

**A.** Most location owners try to create a healthy, stimulating atmosphere for children of all ages. For this reason, even if allowed by city regulations, some do not permit food or drinks inside and hire enough adult employees to ensure adequate supervision of the location.

Game center owners may voluntarily limit the hours of their operations so that certain problems—such as truancy—may be prevented.

Most of those in the industry suggest that parents who are concerned about the atmosphere of game centers frequented by their children take the time to come with

their children to the center and enjoy the games with them.

**Q. Do video games create law enforcement problems?**

**A.** Let's face it: playing *Pac-Man* is more fun for some children or teenagers than sitting in the schoolroom. And that's what has a lot of parents upset, because they view not attending school as a crime. Many communities have reassured parents and school officials that their children won't be in the arcade rather than the classroom by restricting the hours of operation of the game centers.

Many location owners and operators, from the large shopping mall centers to the small "mom and pop" locations, have instituted rules for play that, in many

cases, are more restrictive than the rules at school. Everything from dress codes to chewing gum is controlled—and if the kids don't follow the rules, they don't play the games.

There's as much entertainment value (for no charge) watching a skillful game player as there is putting in the quarter and playing yourself. For years, positive-minded communities have encouraged children and teenagers to congregate in supervised and controlled places.

The police chief in Gainesville, Fla., says of his experience with the games, "We have several arcades within my jurisdiction, and they aren't a problem now and they never have been. I have not seen one report or heard a word from my commanders about loitering, vandalism, or complaints of congregating teenagers. And we have more than our share of young people—the University of Florida is within my jurisdiction."

Paul J. Kentry, a police officer from Buffalo, N.Y., is opening up a game center and says he "has many friends among policemen and sheriff's deputies and that he would welcome them at any time into his establishment." Kentry personally will supervise the center and promises there will be "no smoking, no gambling, no loitering, no profanity, and no outside noise to disturb neighbors."

Frank V. Meehan, the chief of police in Redondo Beach, Calif., says, "The good arcades are an asset. It is supervised play for our children, and I strongly endorse supervised play. The poorly managed arcades, on the other hand, give all video game centers a black eye."

**Q. Do video game centers contribute to juvenile crime?**

**A.** There is absolutely no evidence to prove that the game centers contribute to juvenile crime. In fact, there is evidence to the contrary. Police Chief John Couter of Warwick, R.I., comments, "My personal feelings are that you've got to give kids a place to go or else they'll be congregating at every corner. If they (game

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rooms) are properly supervised, they can work. If you run it properly, if it's supervised properly, then it shouldn't be a problem for the police."

A study conducted in 1977-1978 by the Wisconsin Council on Criminal Justice of a Recreational Alternatives Program for preteens offered by the Platteville, Wis., Police Department shows that juvenile crime declines when youths are provided recreational facilities and a place to gather. The police department opened a recreational facility—including pinball and foosball machines—for the express purpose of reducing juvenile crime.

It worked. When the facility first opened, 125 to 150 preteens (grades 5-8) attended weekly. No counseling or treatment was provided. The facility was strictly devised as a place for the youngsters to gather with minimal supervision. Juvenile apprehension rates declined a month after the facility opened, and they stayed down during the course of the study.

Jim Mandell, a district manager with Cumberland Farms, a convenience-store chain, says a video game in a store acts as a *deterrent* to robberies. He has stated that in their stores with video games, there have been fewer robberies than in the stores without video games.

**Q. Does video game playing provide a motive for petty theft?**

A. There is no evidence to suggest that there is any correlation between petty theft and the opening of video game centers. National law enforcement experts see no trend indicating the existence of a video game center within a community contributes to an increase in petty theft. FBI statistics in fact indicate that *the rate of increase for larceny thefts dropped between 1979 and 1980.*

**Q. How do law enforcement officers feel about video games?**

A. The professional associations representing law enforcement administrators, police chiefs, and sheriffs do not have an official policy on video game centers. When you talk with the police chiefs and sheriffs themselves, you find they are much more concerned with the incidents of violent crime in their community than with some of the frequent complaints about video games—that is teenagers congregating and creating noise and parking problems.

But, as a 1982 study on police and juveniles, called "Police Handling of Juveniles," by Boston University's Center for Criminal Justice emphasized, "hanging out" is not a crime. Groups of juveniles who are hanging out are presumed not to be violating the law unless

they trespass or cause a breach of the peace."

The most common criminal violations that arise when youth congregate in streets or hallways are trespassing, disturbing the peace, and loitering.

Most police departments are hesitant to get involved in what they view as a "parent-child" problem—as long as the game centers don't contribute to the delinquency of minors in the classic sense of selling liquor to minors or encouraging some other kind of illegal behavior such as gambling. Most police administrators,

would, in fact, endorse and support clean, well-run, and well-lit arcades. It solves the problem of children and teenagers on the streets by putting them in a supervised atmosphere.

*This information was reprinted from "A Community Relations Manual for the Coin-operated Amusement Games Industry" by the Amusement and Music Operators Association, Amusement Games Manufacturers Association, and Amusement and Vending Machine Distributors Association.*

**EXPORTING? . . . Tokens Are The Answer.**



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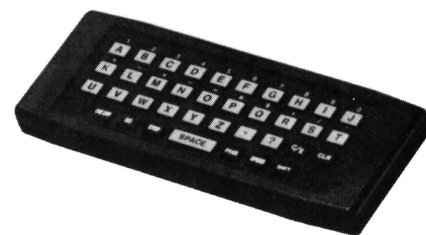


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## POWER SUPPLY DESIGN COURSE PSD-1

# Lesson 2: Power Supply Elements

## Programmed Test

*Editor's Note: The material below is a serialization of the Kurz Kasch correspondence course for electronics, designed specifically for the coin-operated amusement industry. This course is copyrighted and owned by Kurz Kasch of Dayton, Ohio, and its reprinting is being sponsored jointly by Kurz Kasch and Play Meter magazine. This material is authorized for publication exclusively in Play Meter magazine.*

**INSTRUCTIONS:** The purpose of this test is to guide you step-by-step thru actual circuit design problems. Also, many of these tests will provide you with additional design technique. Most important, these tests will provide you with a gauge to establish your degree of understanding of the material covered in the text. The test is programmed. Start at block one and then follow the numbered instruction associated with your answer.

1

The voltage drop across a diode when it is forward biased is

- a.  $V_F$  GO TO BLOCK 20
- b.  $B_V$  GO TO BLOCK 15

2

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 20.

3

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 11.

4

YOU ARE CORRECT!

The reverse operating limit is

- a.  $B_V$  GO TO BLOCK 11
- b.  $V_R$  GO TO BLOCK 23

5

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 25.

6

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 14.

PLAY METER, October 15, 1982

7

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 16.

8

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 22.

9

YOU ARE CORRECT!

$E_{av}$  value for one alternation of a sine wave is \_\_\_\_\_ times the peak value.

- a. 0.636 GO TO BLOCK 16
- b. 0.707 GO TO BLOCK 26

10

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 21.

11

YOU ARE CORRECT!

The forward voltage drop ( $V_F$ ) is determined by

- a.  $R_L$  GO TO BLOCK 3
- b.  $I_F$  GO TO BLOCK 25

12

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 6.

13

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 22.

14

YOU ARE CORRECT!

There are \_\_\_\_\_ basic rectifier configurations.

- a. One GO TO BLOCK 6
- b. Two GO TO BLOCK 19
- c. Three GO TO BLOCK 9

15

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 1.

16

YOU ARE CORRECT!

The rms value,  $E_{rms}$ , for one alternation of a sine wave is \_\_\_\_\_ times the peak value.

- a. 0.636 GO TO BLOCK 7
- b. 0.707 GO TO BLOCK 22

17

YOU ARE CORRECT and have completed the test for the second lesson. However, before going on you should review any area in this lesson you do not fully understand.

19

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 14.

20

YOU ARE CORRECT!

The forward operating limit of a diode is

- a.  $P_{d(max)}$  GO TO BLOCK 21
- b.  $B_V$  GO TO BLOCK 2

21

YOU ARE CORRECT!

The current which flows when a diode is reverse biased is

- a.  $I_R$  GO TO BLOCK 4
- b.  $I_F$  GO TO BLOCK 10

22

YOU ARE CORRECT!

The instantaneous value,  $e$ , of a sine wave is \_\_\_\_\_ times the peak value.

- a.  $E_{(av)}$  GO TO BLOCK 8
- b.  $\text{Sine } \theta$  GO TO BLOCK 17

23

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 4.

25

YOU ARE CORRECT!

The reverse current ( $I_R$ ) is determined by

- a.  $V_R$  GO TO BLOCK 14
- b.  $R_L$  GO TO BLOCK 5

26

YOU ARE INCORRECT!

Refer to the text and return to BLOCK 9.

## The psychology of arcade tokens

Some very unusual things happen when an arcade goes to token operation. Play increases, and profits increase.

It seems to be almost a universal quirk of human nature to think of the tokens as non-money (which in fact, they are, except to the arcade operator). Players do not consider their cost or value, but see tokens as the means to play the games.

Many operators offer discount pricing, such as five or six tokens for \$1, which

gives the player the "good feeling of bargain pricing" (most commonly associated with department stores). Some players think that they are getting "something for nothing" or that they are somehow "beating the house" on discount-priced tokens.

The next result is the urge to spend more for tokens than would normally be spent for quarters.

Additionally, the added result is that the

player feels that he has a bargain in his hand and plays more freely than if he were playing with quarters.

Even with tokens sold at four for \$1, the psychology of spending them in the games takes on the same aspects as chips in a casino. The player does not think of them as money and plays more freely. The casino operators figured this out years ago.

—Reprinted from "Notes & Quotes"

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## Outfoxing targets

"A screen full of targets test the reflex of players at selected difficulty levels in our latest full color video game—*Solar Fox*, said Stan Jarocki, vice president of Bally Midway Mfg. Co. of Franklin Park, Ill.

The objective in *Solar Fox* is to clear the screen of fuzor targets as fast as possible, while avoiding destruction from firebirds and force fields that are shot out from thrusters that move along the playfield borders.

The game consists of multiple racks with a different array of targets in each rack. It's also a race against time. If the player destroys all of the targets before the 'Skip-A-Rack' timer elapses, he earns the 'Skip-A-Rack' bonus, permitting him to advance an extra rack but still score all of the points in the rack skipped.

Every fourth rack is a challenge rack, where the player can earn additional points without enemy interference or opposition. By clearing 10 racks, the player becomes a distinguished member of the '10 Rack Club.'

*Solar Fox* is available in all three Bally Midway models: standard upright arcade, Mini-myte, and cocktail table. All units feature a Self-Diagnostic Test System that is activated by a switch inside the coin box door to check bookkeeping and set up functions, sounds and control switches, as well as player input.



## Solar system raider

Your name is Gravitar. Your ship is a lone raider in a hostile solar system. Your mission is to knock out each planet's defenses, and capture its fuel before your supplies run out.

Sounds simple, but the path to success is fraught with danger—rammer ships hover over the surface, itching to smash you to smithereens. While in the void between the planets, alien ships track you, and the gravitational tug of the solar system's death star threatens to suck you in.

This vision of high adventure is embodied in *Gravitar*, a new coin video game introduced by Atari Inc. The game features numerous planets in three different solar systems. Each system is progressively more difficult with positive gravity, negative gravity, invisible planet surfaces with positive gravity, and invisible with negative gravity. All of this is displayed in Atari Quadrascan color.

As play begins, Gravitar's ship is equipped with laser torpedoes, a protective shield, and a tractor beam to capture fuel. It emerges from its home base into the positive gravity of the first solar system, surrounded by five planets and the "death star." The player is then confronted with alien ships and can either fight or outrun them to a planet. If the player chooses to fight, he runs the risk of being captured by one of them and transported to deep space for a dogfight to the death.

If he outruns them, he'll enter the chosen planet's atmosphere, and zoom down for a closer inspection of the craggy terrain. Here the mission is to destroy the planet's firing bunkers and capture its fuel, all the while avoiding the hovering rammer crafts.

To get to the next solar system, the player needs to eliminate the first four planets. Each planet is worth progressively more points, and the faster a mission is completed, the more bonus points a player will receive.

There's another, riskier way to enter the next solar system. A player may skip the four planets and enter directly into the fifth one, the Alien Planet. At the center of the planet is a reactor, which the player must seek out through a narrow tunnel and destroy. Once that's done, the player must race back out of the tunnel, called the "link," in a certain amount of time or be destroyed with the planet. If he's successful, the player will receive the point value for the entire solar system and be transported to the next one.

With *Gravitar*, an operator can choose between easy or hard game difficulty, three, four, five, or six game lives, four bonus levels including "no bonus," and 17 different coinage configurations.



## Like father, like son

As successor to the *Donkey Kong* electronic video game, *Donkey Kong Junior* offers fans a new variation on the adventures of the Donkey Kong family.

In Nintendo's new game, the original Donkey Kong is being held captive by Little Mario, the brave carpenter who saved the Beautiful Girl from Donkey Kong last time. Now, he stands guard over the cage in which Donkey Kong is a prisoner.

Enter Donkey Kong Junior. Every bit as clever and adorable as Papa. This time, it is Junior who must climb his way to the top to rescue his forlorn Papa from the steel fortress. Donkey Kong Junior is an agile and talented little ape. Players can make him jump in four directions, and he will slide down a single vine or climb up two vines at very high speed.

As Mario's attack brigade of ape-eating birds and energy pods tries to fend off little Junior, he must maneuver his way up through the perilous obstacles. His only means of counterattack is via the Fruit Bombs he drops during his rescue attempt. When he reaches the top, he grabs the keys away from Mario, which in the climax he uses to free Papa Donkey Kong from his cage.

*Donkey Kong Junior* has four different playboards with varying degrees of difficulty. One or two persons can play, and each gets three Donkey Kong Juniors per game. However, at the discretion of the operator, the number can be adjusted upward to provide up to six Juniors per player.

Operator flexibility is further enhanced by the ability to award an extra Junior at any of the following levels: 10,000, 15,000, 20,000, or 25,000 points. Adjustable coinage is also an option. *Donkey Kong Junior* is available in two models: table and upright.

"*Donkey Kong Junior* is even more exciting than *Donkey Kong*—with its unusual sound effects, intricate visual imagery, and challenging playboards," said Minoru Arakawa, president of Nintendo.



## Tanks tackle tough terrains

Players attempt to patrol uncharted terrains of the moon with Williams Electronics' *Moon Patrol*.

Moon Patrolers must race to beat the clock, as they maneuver the tanks from checkpoint to checkpoint. Beating the average time collects big bonus points, and scoring high points along the route entitles players to another tank.

Tankers will need to utilize all of the controls at their disposal to manipulate the tank movement: a joystick to accelerate the tank from slow to medium to fast forward, a jump button to leap over the ground level traps, and a trigger button to simultaneously fire missiles straight up at the invading UFOs and straight ahead to disintegrate obstacles in the tank path.

Starting out on the Beginners' Course, patrolers will immediately have to contend with mammoth boulders that must be either blasted apart or leapt over. Almost immediately, space ships, flying saucers, and UFOs appear on the scene dropping missiles and bombs. Not only must these alien forces be repelled, but their bombs create more bottomless craters that must be vaulted. Farther along the route, players must face territories studded with land mines and alien ground force tanks shooting cannons dead ahead.

If the player can handle all this action and make it to the end of the Beginners' Course, he will progress to a more difficult route—the Champion Course. In this segment of his patrol, wilder and more exotic confrontations await him.

The player must beware of fast rolling rocks skidding along the terrain at a fast pace, not to mention volcanoes on the brink of erupting. He will also meet an enemy in the low flying alien planes that sneak up behind the *Moon Patrol* tank.

Should a player lose his tanks and choose to play again, he has the option to proceed from where he left off on his course or start back at the beginning.



## Leather-like table

The new *Cougar Cheyenne* coin-op pool table, manufactured by Valley, features a new leather-like high-pressure laminate on the table's sides, ends, and rails. The "Cheyenne Leather," with its Western look, is an exclusive with Valley.

The "leather" resists stains, scuffs, burns, and is easy to clean, the company said.

"In today's volatile coin games market, return on investment is more critical than ever," said Chuck Milhem, president of Valley, "and we believe the pool table is a real opportunity that's frequently overlooked. This new *Cougar Cheyenne* reflects Valley's commitment to building products the industry needs and can depend upon."

The new table features another Valley exclusive, long recognized as a key breakthrough in coin pool table engineering. This is the patented same-size "Cat's Eye" cue ball and its companion ball separator system, which has no moving parts—

mechanical, electrical, electronic. This is the only such system available anywhere.

Another Valley innovation incorporated into the *Cougar Cheyenne* is the one-piece polyethylene ball return system—it's warp and wear resistant and ends ball hang-ups. The legs are improved as well—double reinforced fiberglass with individual levelers to secure the table against abuse.

In addition to the legs, the rigidity and stability of the *Cougar Cheyenne* is further assured by twin heavy-duty aluminum crossbeams that provide end-to-end support of the genuine imported one-piece precision-ground slate playfield. The ball-return box and the triangle holder have also been strengthened to resist vandalism.

Another styling feature of the new *Cougar Cheyenne* is the design of the corners. These heavy duty zinc die castings are chrome-plated and are highlighted with Valley's famous Cougar symbol.



## Enter the ring

*Rocky*—the world's favorite champ—is now a new Gottlieb game. Based on the popular film character, Rocky Balboa, male and female players of all ages will identify with the game as *Rocky* is recreated on the backglass and playfield artwork. The popular "Rocky" musical theme is also featured in the game's background sound.

*Rocky* players compete in a 10-round event by attempting to "knockout" drop targets numbered one through 10 and thereby win the corresponding round. Four flippers give the player his left and right "hooks" and "jabs" and provide a choice of both short and long arching shots.

Voice interaction reminds the player which round he is in, and cheering crowds salute the player after each round he wins. Based on rounds won, bonus multipliers up to 10X are awarded assuring full use of the seven-digit displays.

# 'Tron': your programmer

*Tron* features four domains of play that take the player into the electronic computer world of energy and light.

"It's a startling new dimension in video excitement destined for huge success with interest and play action that will reach a new high," said Stan Jarocki, vice president of marketing for Bally Midway Mfg. Co. of Franklin Park, Ill.

Players face the challenges and dangers of the I.O. Tower, Tanks Maze, Cycle Grid, and the M.C.P. (Master Control Program).

Tron is the player's personified computer program who faces the challenges of this electronic world. When starting play, he begins in the center of the play-select maze consisting of four colored areas, each representing a different domain.

Selection is made by moving a bright green spot from the center into one of the domains. An easy to use, multidirectional hand-operated flight control stick maneuvers Tron to destroy or avoid the enemy. Tron must conquer each domain to score and advance to a new phase.

In the I.O. (Input-Out) Tower domain, Tron is armed with a light disc and must destroy the ever increasing number of deadly grid bugs that emerge from the grid surrounding the Tower. The objective is to enter the Tower before the designated time expires, or the bugs reach and 'derez' Tron.

Driving a red tank through the Tank Maze, Tron's mission is to destroy the blue enemy tanks that can fire only in the direction of their travel. Tron's tank has a rotating turret and can fire around corners with bouncing energy pellets. The enemy tanks must be hit three times to be destroyed. Driving into the pink diamond at the center will relocate Tron's tank to a new random position in the maze.

In the Light Cycle Grid, Tron is the blue cycle whose speed can be regulated by using the control stick trigger. His objective is to box in his opponents, forcing them to run out of territory. A crash into the cycle light traces or the perimeter walls is deadly.

The objective in the M.C.P. (Master Control Program) is for Tron to blast a hole in the rotating column of colors as it descends toward him. Should the colored column touch Tron, he will be 'derezsed.' If Tron reaches the cone of light above, he has accomplished his mission.

*Tron* is available in three Bally Midway models: standard upright, Mini-Myte, and cocktail table.



## Buried treasure

Taito's all new *Space Dungeon* is battle set in the deep dungeons of space.

*Space Dungeon* incorporates all of the intense strategies advanced players demand and the simple goals that beginners need, the company said.

Mysterious cosmic treasures are buried deep within the space dungeon and await the raider who can penetrate the cosmos and gain the riches for his own ends. To collect the precious space metal, the player invades the stronghold, manipulating the Guidance Control and Rapid Fire eight-way joysticks.

Armed with tremendous firepower and a strategic radar screen for plotting tactics and maneuvers, he must evade or destroy the enemies, grab the treasure, and follow the arrows to the Bonus Room.

Points for collected treasure are scored only after a level is completely explored, with each level of a possible 99 having 16 treasures and 36 rooms. The deeper in the dungeon the player strikes, the more valuable the treasure, but the more difficult it is to survive.

When the thief steals treasure, the player must aim his weapon for a direct hit to make him drop it. But if the player shoots the hovering Spore Case, it will explode into a frenzy of deadly Spores that must be dodged at all costs. If the space pilot's ship (two-six adjustable) is destroyed, the collected treasure remains in that room posted with a Treasure Marker and plotted on the radar screen so the player can return to collect it. A Special Bonus of 10,000 x completed level is awarded for total exploration of that level. A Bonus Ship is earned for every 10,000 points (adjustable).

Each and every player can plot a different strategy to meet his skill level and goals, from collecting less guarded treasures on the upper levels to inflicting total destruction throughout the dungeon.

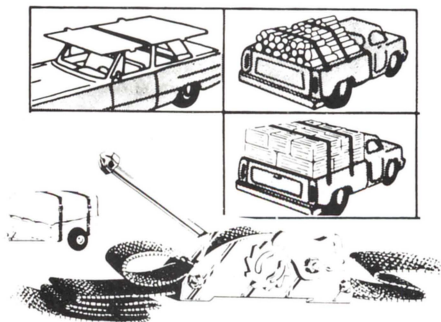
# Aids to the Trade

## Strap it with 'Ratchet'

*Ratchet Strap* is a new tie-down strap utilizing a unique, patented mechanism that provides quick and easy securing of most any type load to a truck, trailer, or auto roof.

*Ratchet Strap* is ideal for tying down vending machines and other coin-operated machines to help eliminate local transit damage. The sportsman, the do-it-yourselfer, and those who use tie-downs in their work will all appreciate *Ratchet Strap's* ease of use and powerful nine to one mechanical advantage.

*Ratchet Strap* has 1½ inch wide, high strength nylon webbing with "S" hooks at each end. The patented method of threading the webbing through the shaft allows all lengths of *Ratchet Straps* to be adjusted as short as desired and gives the ability to place the specially plated steel take-up mechanism anywhere on the length of the webbing so as not to damage surfaces. The double-tooth pawl provides a positive locking action, yet can be easily released to remove the tension. Mounting holes are provided should permanent mounting on a trailer or truck body be desired.



*Ratchet Strap* is available in 10-foot and 15-foot lengths with suggested list prices of \$19.98 and \$22.49. For literature and information write: SailTech Inc., Box 189, Parker, CO 80134 or call at 303/333-9515.

## Bench-top repair system

The Pace new *PRC-151 Repair System* is a completely self-contained system for any rework, repair, and modification of printed circuit boards.

The bench-top unit is ideally suited for



factory or field work. It performs scores of repair functions for low cost and fast and efficient repair of electronic assemblies. The standard system can perform the following repair operations: temperature-controlled desoldering (removal of components); abrading, milling, drilling, and grinding for general PCB repair; removal of conformal coatings; high-strength reflow soldering; thermal wire stripping and resistance heating capability.

The *PRC-151* incorporates zero-power switching so the complete system is safe for working on sensitive boards and components, company personnel said.

The *PRC-151 System* comes complete with a new power source featuring Thermo-Drive heat control, the "No Clog" Dual Path Solder Extractor, a precision miniature machining unit with deluxe tool set, CIR-KIT selector pack, a deluxe soldering iron, resistance tweezer, thermal wire stripper, probe for conformal coatings, a Hot Cubby Unit with wet and dry cleaning facilities, and a ConForm 1 lead measuring and forming tool, cleaning brushes and experimental tip kit, and a universal power cord.

For additional details on the Pace *PRC-151 Repair System* or a demonstration, contact: Marc Siegel, Pac Incorporated, 9893 Brewers Court, Laurel, MD 20707, phone 301/490-9860.

## Ear-piercing alarm

Mountain West Alarm Supply of Phoenix, Ariz., is now distributing *The Sound Blaster*—a self-contained alarm system. This economical, all purpose siren alarm secures any single door situation such as, limited access entries or single windows, often difficult areas to protect.

The easy mount beige enamel and chrome cabinet mounts directly on or near

the door to be protected. Installation takes only 10 minutes. *The Sound Blaster* is powered by a single 12 volt battery and produces an extremely high level ear piercing sound (10 db) that may deter even the boldest intruder.

Features include Key Switch ON/OFF, Time Delay for entry/exit, Visual Entry Warning Light to remind owner to disengage alarm, a Panic-Emergency activate button, and warning decals.

For more information on *The Sound Blaster*, write Mountain West, 4215 N. 16th St., P.O. Box 10780, Phoenix, AZ 85064.



## Trick-or-Treat?

Halloween promotions can be a natural for game centers. A new colorful *trick-or-treat bag* with a tear-off coupon is offered by Business Builders for a special Halloween promotion.

"This is especially good for locations that target to families and a younger (8 to 14 year old) player market," noted Carol Kantor, president of Business Builders



*New Coupon Trick-or-Treat Bag* comes with a special poster for your window display.

promotion agency. "The tear-off coupon on the bag can offer an incentive for players to come back in November and December," she added. Another add-on to this promotion would be to give an extra bonus treat coupon to anyone in costume bringing the bag to the center on Halloween day.

These 11 inch by 15 inch poly plastic *trick-or-treat bags* with a 2 inch by 11 inch tear-off coupon are printed with "Have a Safe Halloween," a list of safety tips, and the game center's name and advertising message.

This safety theme and the offer of Halloween bags at the location can be publicized to help with positive image building as well as promotion for the game center. The bags will also continue to advertise when they are in use.

The free coupon that is torn off the bag can offer free tokens, 30 for \$5, or any other incentive that will draw the players back again after Halloween. Using the coupons as a measure of response will also help to evaluate the program for future promotion planning.

The bags cost under 15 cents each at a minimum quantity of 1,000. Therefore, even a smaller location may benefit from this promotion opportunity. However, to assure early October delivery the orders must be placed soon.

To order or request samples call or write: Carol Kantor, Business Builders, 10381 S. DeAnza Blvd., Suite 209, Cupertino, CA 95014, (408) 446-4400.

## Advertising scores



Do you want to advertise players' high scores? Bulletin & Directory Board Mfg. Co. offers *Game Top*—a board for individual high scores.

The board comes in any size from 12 inches by 4 inches up to 15 inches by 6 inches for \$18.95. The price includes a theft proof plastic cover with screws and a

bracket to attach it to the game. The boards sell for \$14.50 each without the cover.

The *Game Top* comes in black, red, green, blue, and brown.

For information, contact Bulletin & Directory Board Mfg. Co., 2317 West Pico Blvd., Los Angeles, CA. 90006. Telephone: (213) 382-1147.

## Arcade School videotapes available

Arcade School President Randy Fromm recently announced the completion of the *Arcade School Videotape Training Program*.



"The eight-lesson program covers essentially the same material as is presented during the six-day schools currently being held nationwide," Fromm said. "Of course the videotape program is a much faster paced presentation."

Each of the programs is between 15 minutes and one hour in length. The total running time for the entire eight-lesson package is just over four and one-half hours.

"The fast pace of the videotape program means that a tremendous amount of information can be packed into each lesson. Much more than is possible in a 'live' classroom," Fromm explained. "And of course, a student watching a videotape can review it as often as desired until he feels comfortable with the material being presented during each lesson."

Topics covered by the *Arcade School videotapes* include: basic electronics, semi-conductors, power supplies, regulated power supplies, raster scan monitors, X-Y monitors, digital multimeter, general troubleshooting techniques, and repair techniques.

"The program is designed for those with beginning to intermediate skills in electronics," Fromm said. "This is not an advanced course. The course is designed to teach the easiest and fastest ways to repair electronic games without having to use expensive test equipment or learn a lot of electronic theory."

The tapes are available in both VHS and Beta formats and are sold as a complete set only. Individual lesson programs are not available for purchase.

"The Arcade School program doesn't

really allow a student to jump in halfway through the lesson plan as each lesson builds directly upon the material covered in the previous lessons," Fromm commented.

The *Arcade School Videotape Training Program* is being distributed exclusively to the amusement industry by Wico Corporation, 6400 W. Gross Point Road, Niles, IL. Price: \$1,295.

## Preventing spills

Stop messy spills and damaged boards with *Game Caddy* by Port Distributors.

The *Game Caddy* is made of black, high-impact plastic and features a removable, replaceable heavy-duty ash tray and two non-residual drink slots.

Install the caddy with three 1-inch super sticking press-on adhesive spots or attach it with screws to non-laminated surfaces.

The *Game Caddy* was installed on 34 machines in the Moss-Hall Game Emporium in Port Aransas, Texas. The game room is connected with a beer-pool-ice cream parlor where smoking and beverages were not previously allowed in the video area.

The 30-day test period showed a modest 20 percent increase in video receipts. Beverage sales, however, increased by 58 percent. There was no increase in machine damage, and a decrease in litter was also reported.



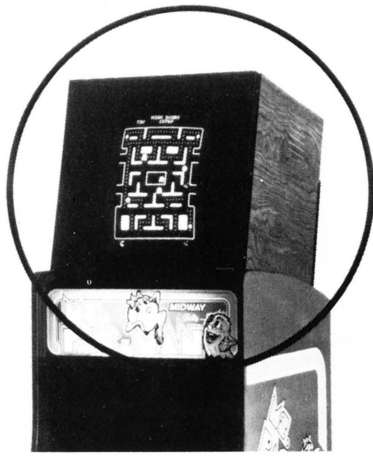
Suggested retail for the *Game Caddy* is \$9.95. Quantity discounts are offered to operators through their local distributors or directly from the manufacturer.

For information contact: Port Distributors, P.O. Box 954, Port Aransas, Texas 78373.

## External monitor

A wood-grain cabinet houses the new full color 19 inch monitor that can be easily connected to almost any coin-operated video game. "It's ideal for use in tournaments, exhibitions, and new game introductions," said Stan Jarocki, vice president of marketing for Bally Midway Mfg. Co. in Franklin Park, Ill.

The *monitor cabinet*, made available through Bally Midway, is mounted on top of the game unit enabling spectators or



prospective operators an unobstructed view of the game action.

## Comparing programmers

More and more operators are building up their own service department rather than relying on outsiders. Here is an inexpensive addition to your service department: the *Softy* programmer.

Before buying a programmer, check the attributes listed below.



### Your next EPROM programmer:

1. Will it copy EPROMS? More specifically, will it copy from one type to another? *Softy* handles single rail, 24 pin EPROMS-2716, 2516, 2532, 2732.

2. Does it show the data contents of only one address location at a time—or a whole 512 byte page of data on a TV or monitor, as *Softy* does?

3. If you make a mistake when entering a code, can you correct it? Or do you have to rewrite the whole block? *Softy* has full cursor control and powerful "text-editing" features which allow insertions, deletions, block-shifts without overwriting, automatic entry of macros, high-lighting every occurrence of specific bytes etc.

4. Has it got serial input routines at 110, 300, 600, 1200, and 2400 bauds? Has it

got similar serial output routines? *Softy* will interface readily with your computer to down-load from an assembler. *Softy* will also print memory contents in page format on a standard printer.

5. Has it got parallel input and output routines too? *Softy* will perform the above tasks in parallel (Centronics) mode. (What is more, all the interfaces translate between HEX and ASCII automatically, inserting spaces and carriage-returns when printing, ignoring them when receiving.)

6. Does it automatically calculate the hex difference from relative jumps etc. when assembling by hand like *Softy* does?

7. Will it pretest EPROMS? One of *Softy*'s most useful feature for minor code changes is the PRETEST function—the change might be "in the right direction" and save the erasure-and-reprogramming process.

8. Has it got a quick, reliable tape interface? *Softy*'s transwift system loads and dumps code reliably at more than 10 times the speed of 300 baud ASCII CUTS cassette interface.

9. Can you write your own keyfunctions and subroutines for special tasks? *Softy* will let you write and execute INS8060 code in a separate area of RAM.

10. Has it got a lead with a 24 pin plug that allows you to emulate a ROM incircuit? That is the ROMULATOR feature which makes *Softy* available for produce-development. (Incidentally, because we are asked so often, *Softy* can be plugged into the back of a "piggy-back" type of single-chipper of the 3870 or 8048 series).

11. Is it small enough to carry in your briefcase?

12. Now you have compared the features—compare the price. Remember that *Softy* comes complete with power-supply, TV flylead, and the ROMULATOR cable.

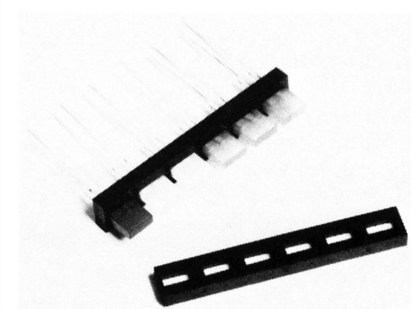
For further details contact: Electronic Technician, Bldg. #5, 25 Eagle St., Providence, RI 02908; or telephone: (401) 751-5438.

## LED array frames

The Component Products Division of Industrial Electronic Engineers Inc., a manufacturer of a variety of electronic displays and innovator in the switch marketplace, introduces the 87000 series of LED array frames.

These end-stackable frames are suited to all analog metering and display applications. They can hold five, six, or seven standard 2mm by 5mm rectangular LEDs on 7mm centers. The ability to interchange the LEDs makes the 87000 series flexible in a variety of OEM applications.

Typical applications include null indicators, level meters, analog instrumentation, computer register displays, temperature monitors, and frequency indicators. These frames are available as separate items or with the LEDs installed to suit the particular application. Delivery is stock to eight weeks; pricing is 15 cents in 100 piece quantities.



For additional information contact: Jeff Shepard, marketing manager, Component Products Division, IEE, 7740 Lemona Ave., Van Nuys, CA 91405. Telephone: (213) 787-0311, ext. 374.

## FLASH—new message board

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For product information contact: Bulletin & Directory Board Mfg. Co., 2317 West Pico Blvd., Los Angeles, CA 90006. Telephone: (213) 382-1147.

Coming Nov. 15: The State of the Industry issue.

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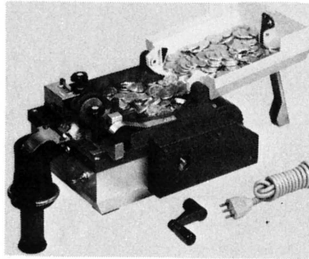
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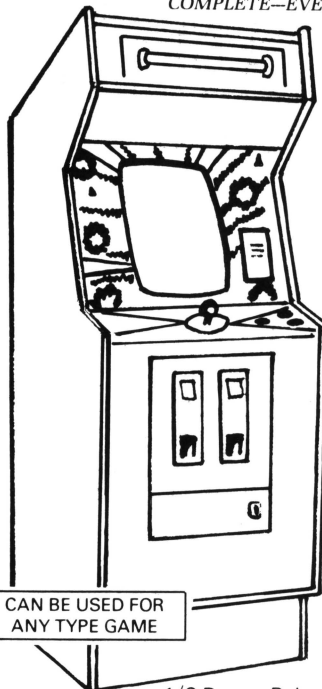
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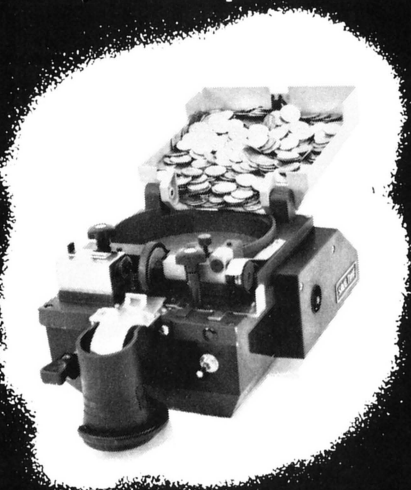
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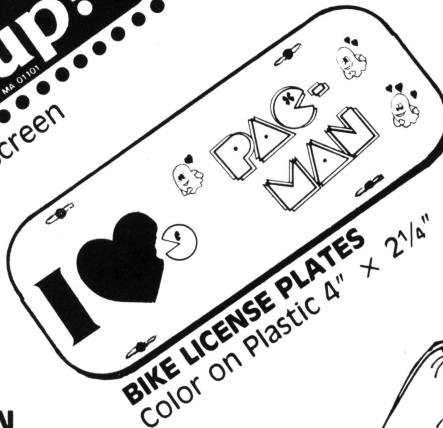
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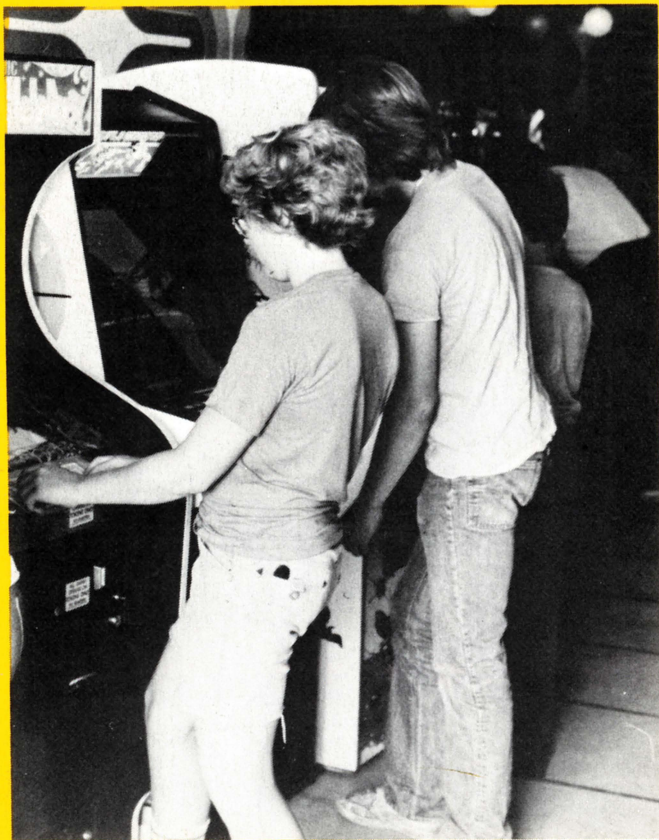


# By blaming 'Pac-Man' do we avoid blaming ourselves?

By Richard P. Carpenter



ILLUSTRATION BY ROBERT SOULE



Take any game, and use it as a scapegoat for problems.

**A** new game is sweeping Massachusetts. It's called Pin the Blame on *Pac-Man*.

The rules are simple. Take a video game—*Pac-Man* or *Donkey Kong* or any of the others that go beep in the arcade—and use it as a scapegoat for all parent-child problems. Holler and howl that the games are Trouble with a capital T that rhymes with V and that stands for Video.

If you're a good player, you can get your community to impose a moratorium on the games, as Boston is trying to do, or even ban them outright, as Marshfield has done.

Pin the Blame on *Pac-Man* is new, and yet it isn't. Through the years there have been similar games with similar goals—games like *Blast the Beatles* and *Take a Poke at Presley*. It's so much fun, and it's so easy, to declare that the kids are misbehaving or wasting their money or being led astray by something that has nothing to do with you.

One thing, though. You have to do a lot of ignoring when you play Pin the Blame. For instance:

- Ignore the other side. Pay no heed to those who say that when the kids are playing video games, they're not pushing drugs or breaking into buildings. Smirk when you hear that the games are actually good for hand-eye coordination and introduce youngsters to the computer age.

- Ignore reality. Work hard to convince yourself that if the kids weren't playing the games they'd be (chuckle) studying or (heh-heh) reading a book. Never give it a thought that they might be vegetating in front of the TV instead of being an active participant in something else.

- Ignore the motivation factor. Never let it enter your mind that, to get quarters for the games, some youngsters don't beg or steal but actually earn the money through a paper route or other job.

- Ignore the kids. Be deaf to their cries that they play video games because they're *fun*; because they're something special to their generation; because, after all, they can play the games better than you.

- Most of all, play down your role in your children's upbringing. Perish the thought that you might offer alternatives, or be able to talk to the youngsters about limiting their game-time and spending, or that you might even do something together.

And that's how you play Pin the Blame on *Pac-Man*. If you study the rules real hard, you'll be a winner. Or will you?

---

*Richard P. Carpenter is a member of The Globe staff and has three children who spend time and money on video games.*

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