

# SOFTLINE

VOLUME 1

MAY 1982

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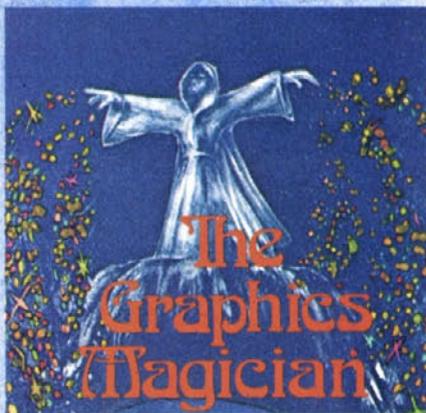


*elecTRONic games  
star in Disney flick*

# Penguin software



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by Chris Jochumson and Mark Pelczarski

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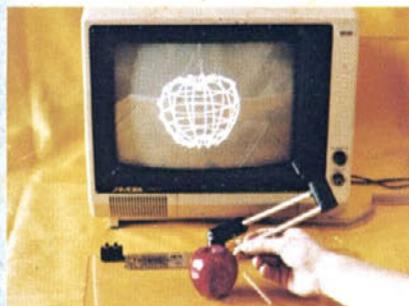
picture/object builder that lets you store hundreds of 100-color pictures on a single disk and recall them quickly from your own programs. These exact routines are being used in the new graphic adventure games from Scott Adams' *Adventure International*. Plus, a new shape editor greatly extends the capabilities of Apple shape tables with multicolors and angles that are preserved on scaling. All design of graphics is done through menu-driven editors; to use in your programs, just attach our machine language routines. Extensive documentation makes this package easy to use for the beginning programmer, yet flexible enough for the most advanced.

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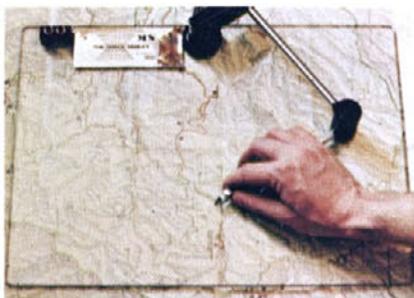
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a 3-D Graphics Tablet



This incredible new device produced by Micro Control Systems, Inc. functions as a standard graphics tablet in two dimensions, until you decide to expand to real-world 3-dimensional input. Now you can trace 3-D objects, either real or imaginary, then view and modify them in 3-D perspective with your Apple computer. The 16"x13" tablet comes with a customized

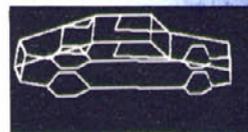
version of *The Complete Graphics System*, specifically designed to accept input from three dimensions. In addition, the *Space Tablet* includes machine language software that allows you to design your own programs using 3-D input. This unique hardware/software package also comes at a very palatable price -- half the cost of most standard graphics tablets. See your Penguin Software dealer today!



# THE COMPLETE GRAPHICS SYSTEM II

by Mark Pelczarski

This improved version of the already popular *Complete Graphics System* is a complete and easy to use 2-dimensional and 3-dimensional graphics design package for the non-programmer. Create color screen images with lines, circles, ellipses, automatic 108-color filling, and "paintbrushes". Use high-resolution text anywhere on the screen in dozens of colors. Create and edit shape tables, and shrink pictures for multiple displays. Amazing 3-D routines let you draw the parts of 3-D objects on the screen, then assemble, rotate, and edit them visually in true 3-D perspective. All the software is easy to use, even for the novice. Programmers can use the graphics, and even our machine language routines, in their own software. This one package gives you more than most other graphics software packages combined. Find out why *The Complete Graphics System* is top rated in Apple graphics.



Development of a 3-D image using *The Complete Graphics System*.

# Special Effects



by Mark Pelczarski

Like nothing else on the market, this unique software package allows you to escape the "coloring book" approach to computer graphics, giving you a palette of 108 colors and 96 different brushes for creating or enhancing color computer images. Also included is a magnifying mode that lets you magnify images 2 or 4 times and edit them point-by-point, a "picture packer" that lets you store images in a fraction of the space normally taken, and a set of tricks that allow you to reverse colors, perform mirror images, and move parts of screen images around and to other pictures. *Special Effects* is great as a stand-alone package -- or the perfect complement to *The Complete Graphics System*.

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# Directline

## Viva le Difference

I was reading your March issue of *Softline* when I came across a letter entitled "Surprise Package." The letter highly praised Nasir Gebelli for *Horizon V*. Having already obtained an original copy of it, I read the letter and related everything that was written about that game to my experience with it. The letter made it sound like the best game that has ever come out for the Apple. It's a good game, but after about twenty or thirty minutes of playing it, it becomes easy and boring. The graphics, animation and sound are excellent but the game leaves much to be desired.

The real games and programmers that deserve credit for their superb achievements are Bill Budge for *Raster Blaster* and *Space Games*; there is also Piccadilly Software for their excellent game *Falcons* which is extremely challenging; also all the programmers at On-Line, especially Ken Williams, Roberta Williams and Olaf Lubeck.

Given a choice, I would choose a game like *Threshold* or *Outpost*, but if you want to be amused for twenty or thirty minutes *Horizon V* is your game.

Anthony Melendez  
Rancho Palos Verdes, CA

## Treasure Trader

For many months I have been trying to get the platinum sphere out of the computer room in On-Line's *Adventure #3 Cranston Manor*. I have fifteen of the sixteen treasures, the sphere is the only treasure I do not have. I have gotten past the bull and brought the treasure behind him out. If you would like to trade information with me on how to get the platinum sphere out for some information on one of the other fifteen treasures, send a self-addressed letter with information on the sphere and the subject you wish to get information on to:

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Only one letter will be answered and returned.

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## Fast Type

I have just discovered an oddity on my Apple. Whenever I type ASDF very fast, I always come up with ASDF2]. Can you please tell me why this is so?

John Azzarelli and David Arm  
Brooklyn, NY

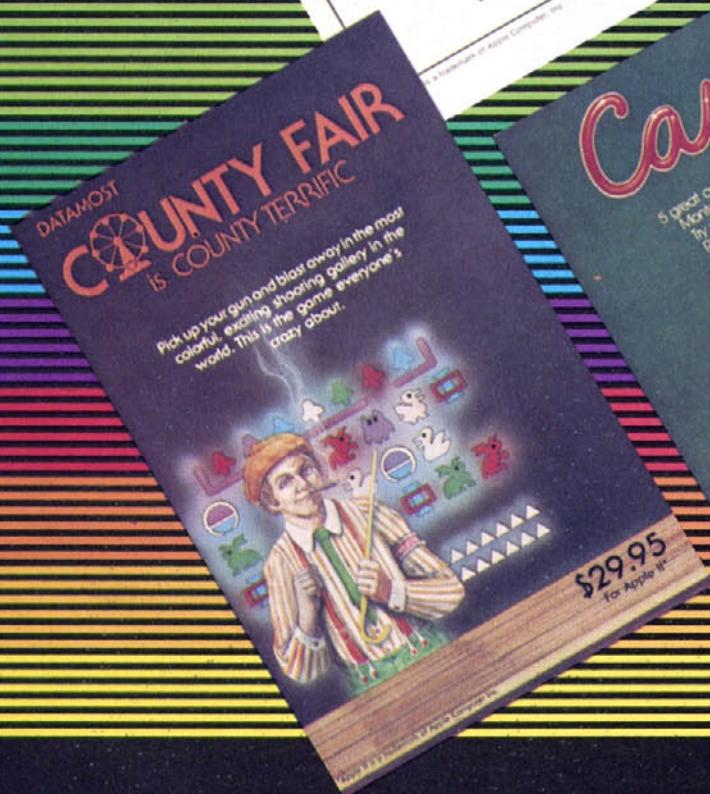
## No Truck with Thieves

I have never read such an elaborate attempt to justify theft as the letter written by John Strang in the March 1982 issue, in which he contends there is nothing wrong in making unauthorized copies of published software.

Anyone purchasing software should have the right to use it or lend it to anyone he or she wishes. The purchaser does not buy the license to copy and distribute the program, for free or profit. Publishers of books and periodicals require written permission prior to copying any portion of the publication. Software producers should be allowed no less protection or consideration. Unauthorized copying of software is simply *theft!*

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## Copyrights and Wrongs

I am surprised that you printed Mr. Strang's drivel with no editorial comment. His letter is a seamless tissue of lies and nonsense, to wit:

1) His analogy of the sweater does not support his case. Copying the pattern of clothing may well be a crime if it infringes copyright. The Taiwanese are well known for such activities; these activities are not widely known to be either legal or admirable. They are in some way "competitive," but so are the manufacturers of counterfeit Apple computers. Or does Mr. Strang wish to defend them as well?

2) His analogy of the accounting packages does not support his case. First, no one claims that the vendors of accounting packages invented the principles of accounting. As a result, anyone can write an accounting package just as anyone can write and market a program that plays chess, or poker. Writing a program which plays *Monopoly* or another copyrighted game is another matter entirely, and if Mr. Strang does not yet know this, he should be informed as soon as possible before he violates a law. An "improved" *Pac-Man* may or may not turn out to be a simple theft of someone else's idea; Magnavox just found out that *K.C. Munchkin* was.

3) Mr. Strang disastrously confuses competition with copyright infringement. Take *Star Wars* as another example. Everyone knows (or should know) that I have no right to "compete" in marketing *Star Wars* toys. The characters in the film are copyrighted, and my actions would be copyright infringement, not competition.

4) Mr. Strang claims "it is difficult to see how the existence of *Pac-Man* for the Apple hurts Atari in the least, how can it? . . . The Apple software market is a completely different one." This is sheer lunacy. Suppose Atari plans to market an Apple version itself? Suppose Atari wants the availability of *Pac-Man* to be a competitive edge with Apple, just like *Star*

*Raiders*? Suppose someone puts an Apple playing *Apple Pac-Man* into an arcade, with quarter eaters attached? None of these suppositions are so foolish as to be dismissed out of hand, and they should underline once again the notion, which Mr. Strang everywhere resists, of a *creative property*.

5) Mr. Strang again beats the hollow drum of overpricing. The only ethical response to overpricing is not buying. Any other response is indistinguishable from an ethical alliance with grand theft auto.

6) The entire tone of Mr. Strang's letter is hysterically greedy and illogical. He assumes the right to judge what is and is not a "reasonable profit," and invites us to join him in this imbecile game. Maybe Mr. Strang is looking for a job in Washington.

On the same note in another part of town, I am glad someone finally published something about *Wizardry*. I was highly amused by Mr. Woodhead's outraged splutterings against software piracy. I will be more interested in his opinions when I see his written statement of creative indebtedness to the game called *Moria* which has been running for these many years on the CDC Plato system, and only on the CDC Plato system. *Moria* is a copyrighted game, which may explain Mr. Woodhead's reluctance to publicize the fact that *Wizardry* stole from *Moria* its basic idea, the 3-D map display system, and even the *exact cluster* of moving keys used on the Plato system. This is the absolute giveaway. The "A-W-S cluster" means nothing on an Apple, but the equivalent keys on the Plato terminal have arrows for forward, back, right, and left. Until I see a statement like that, I will listen to other Bible thumpers than Woodhead, thank you very much.

Geoffrey S. Puterbaugh  
Sunnyvale, CA

## Helluva High Score

Ladies and gentlemen, a sincere and warm hello from "the Heart of Acadiana," Lafayette, LA, and from yours truly (trite, but accurate), Jack O'Brien, resident games-nut. You put out a helluva magazine. I really like it very much, even though I gnash my teeth each time I look at your High Scores page.

However, 'tis now time to add a brand new record to said High Scores page and it couldn't happen to a nicer person than my wife Dee. Dee got hooked on *Crossfire* and with great tenacity she hung in there and slowly but surely beat the hell out of the rest of the family day after day. The five of us are very competitive and we keep high scores among ourselves, and it soon became evident that *Crossfire* might as well come off of the list. Dee had it locked up from twenty thousand to forty, to sixty, to one hundred thousand and still on and on. And then one day last week her concentration really peaked, and from four o'clock in the afternoon until almost seven o'clock she had herself one helluva run at it and quit at 432,720. The only reason she quit then was because her fingers stiffened out and she just couldn't take any more. She had ten more "men" left at the time she quit. So, publisher Tommervik, it's back to the drawing board for you, but remember this: Dee is going for half a million to beat Jay Sullivan, the programmer, then she is going to hand it up, *Crossfire*-wise anyway, and go after *Snake Byte*, which ain't gonna be quite so easy I'm afraid.

The *Crossfire* score was witnessed by myself, our son Mike, and our daughter Dana. If that isn't verification, when she reaches the half million mark, I'll take a Polaroid shot of the record and send that to you. By the way, what do you require in the way of verification anyway and how come it has never been mentioned until this past issue?

Movin' on: A tip of the O'Brien fedora to John P. Strang of Long Beach for his letter and to you folks for publishing it.

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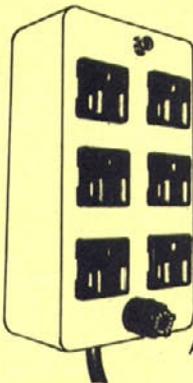
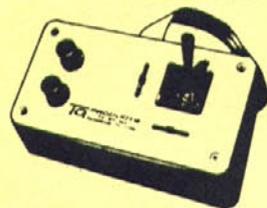
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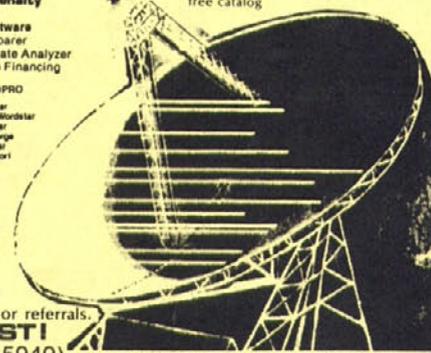
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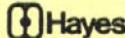
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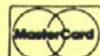


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# Apple Software

I'm afraid that he has a helluva lotta very valid points there, or at least food for thought. I do wish that so much time and space wasn't allotted to this problem, but I guess it ain't gonna go away. Would kind of like to know how many games are sold direct from the manufacturer as opposed to off the shelves at a computer store 'cause the direct sale puts the sixty percent back into the pockets of the people that made it rather than the middlemen. If I were selling games, I would not charge postage if someone bought direct, to encourage them to do just that. I would also give them a twenty percent coupon good on their next direct purchase. It would seem to me that direct selling would be the answer to lower prices or more profit.

Garry Galbreath of Charlotte, NC, you are a good kid. (You've gotta be a kid or you never would have found out the *Snoggle* secret.) It works and I thank you. *Snoggle* is now a lot more fun and I'll start playing it again. One question: How in hell did you ever find out that control, shift, and M would give a complete set of snoggles? You know what the odds are on you stumbling upon that secret?

Let's talk about frustration levels of games, ten being completely frustrating, zero being completely nonfrustrating.

*Snake Byte's* frustration level is ten, but it is a fair ten. You get up to level fifteen or sixteen and that's about it. It's hard, but you have a fair shot at it. *Threshold's* frustration level is also a ten, but it is an unfair ten. There are too many bombs and the cannon is too slow, so you really don't have a shot at really beating it regardless of how many 560,000 Jason Greenbergs there are around beating it. For every Jason, I'll bet there are a hundred Jacks who have said, "To hell with it, it's just too damned hard." *Sneakers* has a frustration level of about five. You can bring it to its knees, but you just can't beat it completely. I really feel that programmers must give a player a shot at getting good at their game, or what the hell is the use of playing it? Contrary to what Dan Thompson said in his review of *Twerps* in your latest issue, I do not wish to weep and moan, and tear my hair, and gnash my teeth when playing a good arcade game. I want to be entertained and amused and frustrated just a bit before I begin to get better and better at it. I don't want to be crushed right off at the start and get beaten down to a pulp each time I play. I get all I want of that each day in the business world. *Photar* is another example of high frustration. You get one shot at winning and an almost unavoidable "black hole" that finally works you into a corner and zaps you. Tried it out at my local computer store and passed.

Speaking of the local computer store, when I first got my Apple I chose ten games from out of a magazine and sent away for them mail order. I was new and I didn't know any better. I researched the ads in the magazines to help me make my decision, but you and I know that the ad writers sometimes have never seen or played the game. I ended up with six good games and four bombs and since then I have paid the extra fifteen or twenty percent and bought my games at the local computer store. It is worth the extra money to be able to play the game first before I buy it. I have saved considerable money by not buying bombs and I buy a lot of games, so I guess my earlier mail-order theory just doesn't hold water.

Enough! I enjoyed talking to you via this letter. How about some feedback?

Jack O'Brien  
Lafayette, LA

## Son of Helluva High Score

Tonight I sat at my desk here in the office I have behind my home and I watched my seventeen-year-old son Mike attack *Snake Byte*, and it was a beautiful thing to see. He was as

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great at it as my wife is at *Crossfire*. I mean, he really tore it up. He made moves that were completely unbelievable, moves that I came out of my chair cheering about—and I don't do that much, really.

Before he started I told him that the record was 44,612 and he said he was going to beat that with no sweat. He did not crash a snake until level number 16! When he got to level number 20 he had fourteen snakes to his credit. Level 23 was murder; level 24 was unbelievable, but he got through it; through 25 and 26 (I charted them as he went) into 27. I really thought that he was going to make it into 28, but that was not to be tonight. But he will get there soon, I promise, he is fantastic. So Terry Sullivan's record of 36,630 level 17 smites the dust and here's the new record:

*Snake Byte, Sirius 64,400 (level 27)*

*Mike O'Brien, Lafayette, LA*

I took seven shots of the damned television set with black and white Polaroid and I could not get the numbers to come out. However, the screen read:

64,400 value 270 level 27 apple left 9 snakes left 0

I am enclosing the shots even though you can't read the score. You can see level 27 and I am also enclosing my maps of the 27 levels. How would I have them if he didn't get that high? His mother and I both witnessed the score and if that isn't good enough, leave off the asterisk, but I'll tell you, it was some kind of an exciting night watching him burn up *Snake Byte*! It just didn't happen in a short space of time, he's been working on it, but he sure put it all together tonight. I guess it's about time I picked a game and worked at it, my whole family is passing me by.

One more question: who the hell is Norman Fong and

what does he do for a living—play games? He currently holds eight records. Unbelievable.

Oh yes . . . I missed volume 1 number 1 . . . I am enclosing two dollars . . . please send it . . . I really enjoy your magazine very much.

Jack O'Brien  
Husband of *Crossfire* record holder  
Father of *Snake Byte* record holder  
Lafayette, LA

*Well, darn close. On all counts.*

#### Sunk without a Paddle

*Pegasus II* is a great game except for one thing: the bombs and lasers are controlled by the A and S keys. I am open to any suggestions from anyone who knows how to get into the program and alter it so I can use the paddle controls to operate the bombs and lasers.

V. Toomepuru  
Pepperell, MA

#### Say Bull

How the heck does a person get past the pink (purple?) bull in *Hi-Res Adventure #3*. Just a hint would be fine. Thank you very much.

Mark S. Inman  
Mullica Hill, NJ

*We'll leave you in the dark. And that's good advice.*

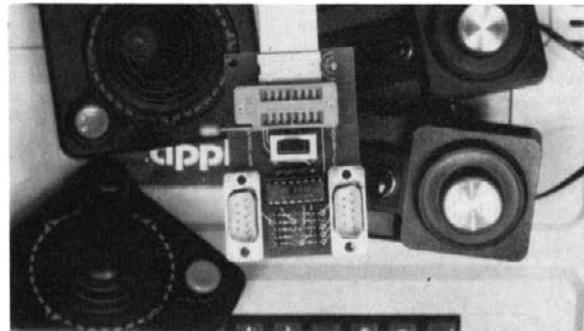
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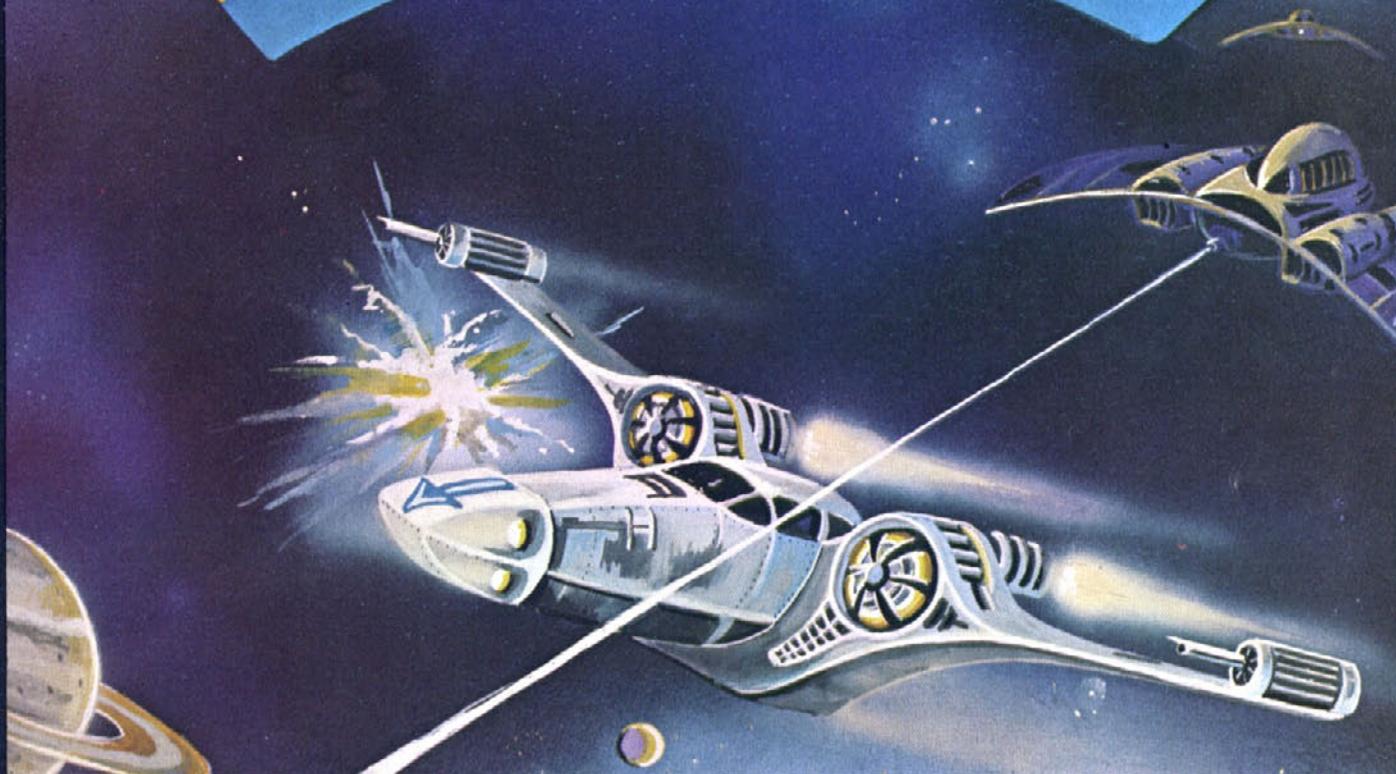
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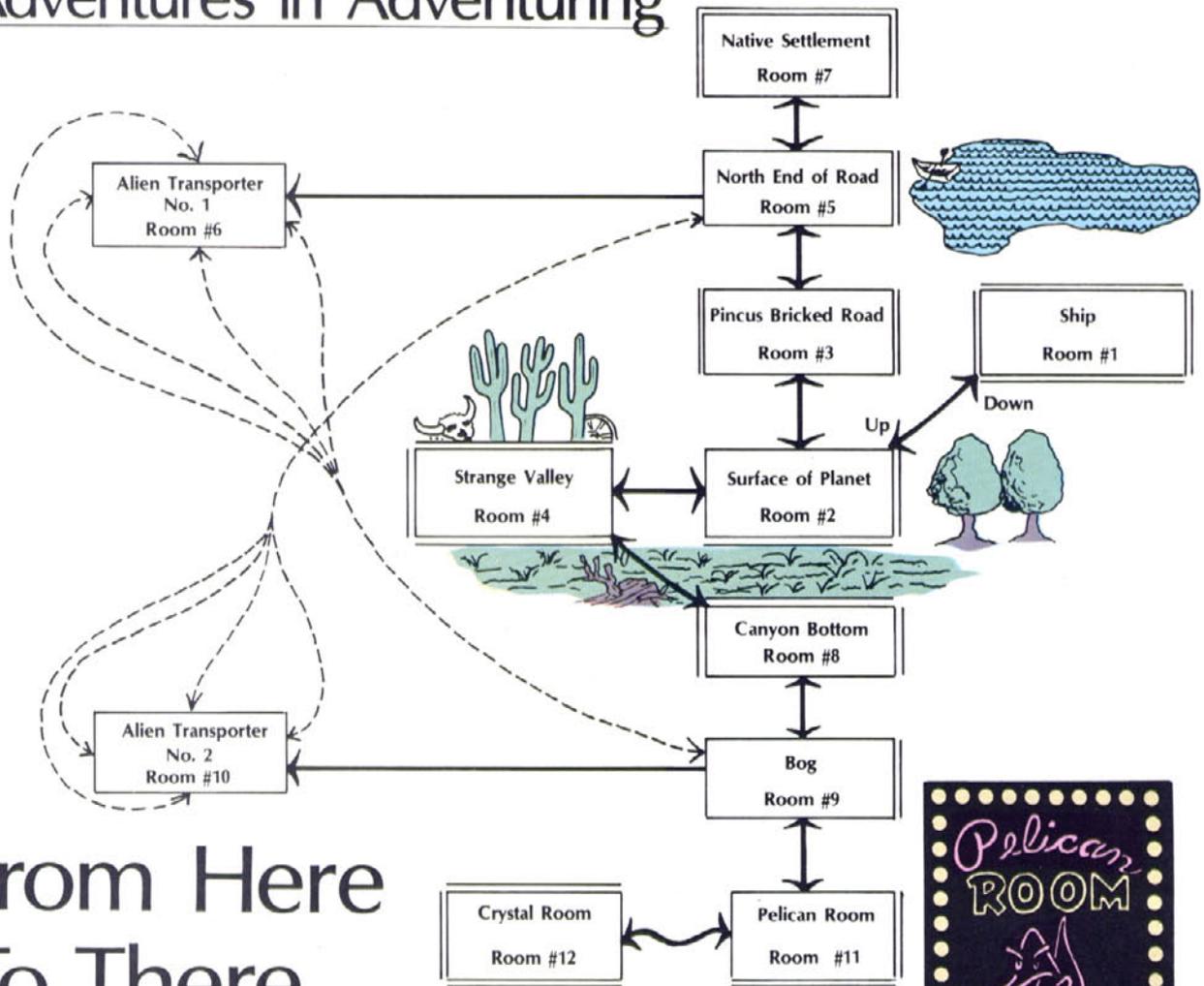
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# Adventures in Adventuring



## From Here To There And Back Again

by KEN ROSE

*All in the golden afternoon  
Full leisurely we glide;  
For both our oars, with little skill,  
By little arms are plied,  
While little hands make vain pretence  
Our wanderings to guide.*

*Thus grew the tale of Wonderland;  
Thus slowly, one by one,  
Its quaint events were hammered out—  
And now the tale is done,  
And home we steer, a merry crew,  
Beneath the setting sun.*

Lewis Carroll  
*Introduction to Alice in Wonderland*

And so the famous mathematician and teacher, Charles Dodgson, writing as Lewis Carroll, takes us on a classic journey to Wonderland, moving us by his use of language from

impossible place to impossible place and from strange situation to curiouser and curiouser.

We adventure players are movers too, using our computers to gallop through Sherwood Forest, climb unclimbable heights, swim unswimmable bodies of water and, in general, do the impossible with the greatest of ease.

The first question to ponder is: In what direction do we want to go? Well, there's north, south, east, and west for starters. We might then consider northeast, northwest, southeast, and southwest. If we really want to get cute, we can throw in north/northwest, south/southeast and so on.

Fortunately, most games confine their directions to north, south, east, and west. A few add northwest, northeast, southwest, and southeast. Almost all also have the ability to recognize *up* and *down*. Games usually allow us to use abbreviations—N, S, E, W, NW, NE, SW, SE, U, and D—for the directions just listed.

Most games also allow you to enter the direction using a verb such as *go* or *run* in the format, "Go north." In most cases, the parser (the part of the program that breaks the sen-

tences into their components) ignores the verb.

While we're on a literary kick, we might also cite Frodo's book from J. R. R. Tolkien's *Lord of the Rings* entitled, *From Here to There and Back Again*. It's nice to get where we're going, but it's even nicer to be able to return.

To know where you've been and how to get back, it is extremely important to have a map. Since most games don't come so supplied, you must draw one for the more complex games. Some games include mazes in which going back in the direction from which you've come does not take you to your starting point. If that sounds confusing, wait until you start wandering around in one. The way to master mazes is to drop an object in each room and keep track of the rooms on your

map by making a note of which room contains which object.

And, speaking of maps, you must have a map in order to write as well as play an adventure program. The important thing about the map is that you number each location and mark clearly how one location connects to another. The map for this month's program will be used in developing the program.

Now that you've got the idea, it's time to examine the program, *A Voyage to the Planet Pincus*.

Before we embark: The coding of this program is in Applesoft Basic and was written on an Apple II, but it is easily convertible to any of the extended Basics. If you have problems, drop the author a note in care of the magazine.

```
10 REM JOURNEY TO THE PLANET PINCUS
15 HOME : REM CLEAR THE SCREEN
20 REM DIM VARIABLES
25 REM WRITTEN BY MICHAEL ROSE
30 REM DIMENSION VARIABLES
35 DIM A$(12),N(12),S(12),E(12),W(12),U(12),D(12)
40 REM THE VARIABLE "R" IS THE ROOM YOU'RE IN.
45 REM LOAD DATA INTO VARIABLES
50 REM ROOM DESCRIPTIONS FIRST
55 FOR A = 1 TO 12
60 READ A$(A)
65 NEXT A
70 REM LOAD DIRECTION VECTORS NEXT
75 FOR A = 1 TO 12
80 READ N(A),S(A),E(A),W(A),D(A),U(A)
85 NEXT A
90 R = 1: REM THIS IS THE STARTING LOCATION, ROOM 1
110 REM THE STORY SO FAR
115 PRINT "THE FEDERATION STARSHIP, USS CENTIPEDE,"
120 PRINT "HAS BARELY MANAGED TO ORBIT THE STRANGE"
125 PRINT "PINK PLANET, 'PINCUS'."
130 PRINT
135 PRINT "YOU, CAPT. JAMES T. QUIRK, HAVE TAKEN"
140 PRINT "THE SHUTTLE CRAFT 'GALAPAGOS' TO THE"
145 PRINT "SURFACE TO OBTAIN DILITHIUM CRYSTALS"
150 PRINT "FROM THE HOSTILE NATIVES."
155 PRINT
160 PRINT "YOU ARE NOW READY TO EMBARK ON YOUR"
165 PRINT "ADVENTURE."
200 REM THE MOVING AROUND ROUTINES START HERE
220 GOTO 1000: REM THE SPECIAL CONDITIONS ARE AT LINE
    1000
230 REM THIS ROUTINE ASKS YOU FOR A DIRECTION
240 PRINT : PRINT A$(R): PRINT : INPUT "DIRECTION>";D$:
    PRINT
250 IF R = 11 AND LEFT$(D$,1) = "W" AND I = 0 THEN PRINT
    :D$ = "": PRINT "THE PELICAN WON'T LET YOU GO
    WEST.": PRINT : REM THIS IS A SPECIAL INSTRUCTION FOR
    THE PELICAN ROOM UNTIL YOU GET RID OF THE PELICAN.
    REM THIS IS THE MOVING MECHANISM. SEE TEXT ARTICLE
    FOR EXPLANATION.
300
310 IF LEFT$(D$,1) = "N" AND N(R) > 0 THEN R = N(R): GOTO
    200
320 IF LEFT$(D$,1) = "S" AND S(R) > 0 THEN R = S(R): GOTO 200
330 IF LEFT$(D$,1) = "E" AND E(R) > 0 THEN R = E(R): GOTO 200
340 IF LEFT$(D$,1) = "W" AND W(R) > 0 THEN R = W(R): GOTO
    200
350 IF LEFT$(D$,1) = "D" AND D(R) > 0 THEN R = D(R): GOTO
    200
360 IF LEFT$(D$,1) = "U" AND U(R) > 0 THEN R = U(R): GOTO
    200
370 REM NOPE. THE MOVE ISN'T LEGAL.
380 PRINT "YOU CANNOT MOVE IN THAT DIRECTION": PRINT
    : GOTO 240
1000 REM SPECIAL CONDITION SECTION
1010 IF R = 7 AND I > 0 THEN PRINT "THE VILLAGERS REFUSE TO
    LET YOU REENTER": R = 5: REM YOU CAN'T REENTER
    ROOM 7 AFTER YOU'VE OBTAINED THE REPELLENT
1020 IF R = 7 AND I = 0 THEN I = 1: REM YOU HAVE OBTAINED
    THE PELICAN REPELLENT SAMPLE
1030 IF R = 11 AND I = 0 THEN PRINT "A MADDENED PUCE
    PELICAN BARS YOUR WAY.": PRINT : REM YOU HAVE
    NOTHING TO DISPERSE THE PELICAN
1040 IF R = 11 AND I = 1 THEN PRINT "THE PELICAN COWERS IN
    FEAR FROM THE ": PRINT "REPELLENT AND LETS YOU
    PASS.": PRINT
1050 IF R = 12 AND I = 1 THEN I = 2: PRINT "EUREKA!!! YOU
    HAVE FOUND A BOX OF ": PRINT "DILITHIUM CRYSTALS.
    NOW, GO BACK TO THE": PRINT "TO THE SHIP.": PRINT
1060 IF R = 1 AND I = 2 THEN GOTO 1080
1070 GOTO 240
1080 REM WIN ROUTINE
1090 PRINT "MR SCHPOCK BEAMS YOU BACK ABOARD THE "
1100 PRINT "CENTIPEDE. YOU POUR THE CRYSTALS IN THE
1110 PRINT "FUEL TANK AND GIVE THE COMMAND TO LEAVE"
1120 PRINT "ORBIT.": PRINT
1130 PRINT "AS YOU SHIFT TO WARP DRIVE, THE FORWARD"
1140 PRINT "VIEW SCREEN SHOWS AN ENRAGED SPACE"
1150 PRINT "PELICAN FLAPPING FURIOUSLY TRYING TO "
1160 PRINT "KEEP UP WITH YOU."
1170 END
2000 REM MESSAGES FOR EACH ROOM
2010 DATA "YOU ARE STANDING IN THE OPEN HATCH OF THE
    SHUTTLE CRAFT. AN ESCALATOR LEADS DOWN TO THE
    GROUND."
2020 DATA "YOU ARE NOW STANDING ON THE SURFACE. THE
    BUMBLE TREES BLOCK YOUR WAY EAST. THERE IS WHAT
    LOOKS LIKE A SETTLEMENT TO THE NORTH. TO THE WEST,
    THERE IS A VALLEY. THERE'S AN IMPASSABLE PINK SWAMP
    TO THE SOUTH. YOUR SHIP LOOMS ABOVE."
2030 DATA "YOU ARE NOW ON A PINK-ASPHALT ROAD. A SIGN
    OFF ON THE RIGHT SAYS 'FOLLOW THE PINCUS-BRICKED
    ROAD'. YOU CAN CONTINUE TO GO NORTH."
2040 DATA "YOU ARE AT THE EDGE OF A VALLEY. IT DOES LOOK
    POSSIBLE TO DESCEND. TO THE SOUTH, THE STRANGE PINK
    SWAMP BURBLES. A PATH TO THE NORTH IS BLOCKED BY
    WERE-CACTUS."
2050 DATA "YOU ARE NOW ON THE NORTH END OF THE ROAD
    AND YOU CAN NOW SEE A SMALL SETTLEMENT TO THE
    NORTH. EVEN MORE CURIOUS IS A HUGE BLACK DISK TO
    THE WEST. THERE IS A LAKE TO THE EAST, EFFECTIVELY
    BLOCKING THAT ROUTE."
2060 DATA "AS YOU STEP ON THE BLACK DISK, YOU SUDDENLY
    REALIZE IT'S A TRANSPORTER. AFTER A SECOND OF
    VERTIGO. EVERY THING SEEMS BLACK."
2070 DATA "YOU ENTER A VERY SMALL SETTLEMENT.
    APPARENTLY ALL OF THE VILLAGERS ARE OUT TO LUNCH.
    THE WHOLE VILLAGE SEEMS TO BE THE SOLE PLANETARY
    PRODUCER OF PELICAN REPELLENT. YOU FIND A SMALL
    SAMPLE CANISTER, AND POCKET IT."
```

2080 DATA "YOU ARE NOW AT THE BOTTOM OF A FAIRLY STEEP CANYON. THE WEST IS UNCLIMBABLE, BUT IT DOES SEEM THAT YOU CAN HEAD TOWARDS THE SOUTH. CRAB GRASS COMPLAINS ABOUT THE WEATHER TOWARDS THE NORTH—THAT ROUTE IS INOPERATIVE."

2090 DATA "YOU SEEM TO BE IN SOME TYPE OF PINK BOG."

2100 DATA "YOU SEEM TO HAVE STUMBLERD ONTO A VERY LARGE BLACK DISK. THERE IS A SECOND OF VERTIGO, AND THEN BLACKNESS."

2110 DATA "YOU ARE IN A DARK REDDISH CANYON. TO THE NORTH, THERE IS PINK BOG. TO THE WEST IS A CURVING PATH."

2120 DATA "YOU ARE IN A SMALL ROCKY ALCOVE. IT SEEMS TO RESEMBLE A PELICAN NEST (WHICH, OF COURSE, IS PURE COINCIDENCE)."

3000 REM THE FOLLOWING DATA ARE THE ROOM VECTORS. SEE THE TEXT FOR THE EXPLANATION.

3010 DATA 0,0,0,2,0

3020 DATA 3,0,0,4,0,1

3030 DATA 5,2,0,0,0,0

3040 DATA 0,0,2,0,8,0

3050 DATA 7,3,0,6,0,0

3060 DATA 9,9,9,9,9,9

3070 DATA 0,5,0,0,0,0

3080 DATA 0,9,0,0,0,4

3090 DATA 8,11,0,10,0,0

3100 DATA 5,5,5,5,5,5

3110 DATA 9,0,0,12,0,0

3120 DATA 0,0,11,0,0,0

### A Voyage to the Planet Pincus

Lines 10 through 90 set up the program components we'll need.

Line 35 *dimensions*, has the computer set aside space for the variables A\$, N, S, E, W, U, D. Each variable has twelve elements set aside, one element for each of the twelve locations (commonly called *rooms*) of the game. The variable A\$ will be used to contain the room messages, which will be displayed when we enter a room. The variables N, S, E, W, U, D will be used to hold the direction information (commonly called *vectors*) from various points of north, south, east, west, up, and down.

Lines 55 through 65 read in the data contained in the message data section, lines 2000 through 3000. Feel free to change these messages to your heart's content. When we wrote this program, the sentences were formatted so they would fit neatly on the forty-column screen of the Apple's display. However, when the program is typeset, this formatting is typi-

cally lost; when you run the program, words may break in the middle and run from one line to the next. This is also true if you have other than a forty-column display.

It's possible to fool around with the spacing of the words in the data statements to make them appear neatly on the screen. The easiest way to do this is to type in only lines 10 through 65 and lines 2000 through 3000. Then in the direct mode, type in the command *print A\$(1)*. The computer will display the way the first room description looks on the screen. You can then change the spacing in line 2010, if it needs to be changed to fit on the screen, and take another look. Each time you change a data statement you will have to rerun the program to reload the array elements.

Lines 70 through 85 load the data contained in lines 3010-3120. First of all, each line of data represents a room, and the order is consecutive with the room numbers. Data line 3010 contains information about room 1, data line 3020 contains information about room 2 and so on. There is a line of numeri-

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cal data for each of the twelve rooms. The data itself consists of six numbers for each room. These numbers are in the order North, South, East, West, Down, and Up and represent the rooms in which you'll wind up after you leave each room. If the number is zero, you cannot move in that direction. For example, line 3010 contains the data for room 1. The first number, 0, would have been loaded into data element N(1). This means you can't move North from room 1. The elements S(1), E(1), and W(1) likewise contain the number zero. This means you cannot move South, East, or West from room 1 either. However D(1) contains the number 2. This means if you move Down from room 1, you will wind up in room 2. Finally, U(1) also contains a zero. Can you move Up from room 1?

Now look at line 3020. The elements for north, south, east, west, down, and up were loaded into N(2), S(2), E(2), W(2), D(2), and U(2) respectively. They, of course, represent the directions from room 2 to other rooms. The element N(2) contains the number 3. This means if you go north from room 2 you'll wind up in room 3. Note that W(2) contains a four. This means if you go west from room 2 you'll wind up in room 4. Finally, U(2) contains a one. This means that if you go up you'll wind up back in room 1. This makes great sense since in order to get from room 2 to room 1 you had to go down.

Perhaps you can now see that it's essential to draw a map and number each room so you'll be able to interconnect each of the rooms.

Line 90 starts us off at room 1.

Lines 110 through 165 merely set up the beginning of the story.

Lines 200 through 250 contain the mechanism for accepting the moving-around instructions and for the handling of some special situations.

Line 220 takes us to special routines located from lines 1000 to 1170. We will take a look at this section later on.

Lines 230 and 240 are the *command* lines, asking you for a direction.

Line 250 is a special line which says if you are in room 11 (the pelican room) and attempt to go West and have not found the pelican repellent (I = 0), then the pelican won't let you pass. If the pelican repellent variable (I) is equal to 1, then of course this line doesn't apply, and you can pass. This will become clearer after we discuss the special condition lines 1000-1170. Line 250, or its equivalent, is needed here to prevent you from going west from room 11 unless you have the repellent.

Lines 300 through 380 do the actual moving.

Lines 310 through 360 look at the first letter we entered into direction variable D\$. This is done by using the string function, *left\$*. See last month's article for a discussion on this subject or consult your computer's manual since not all computers or Basics have this feature. If the first letter is not an N, S, E, W, D, or U, the routine falls through to line 380, which tells you the direction (letter) is not valid and sends you back to line 240 for another direction. If the letter is legal, lines 310 through 360 then look to see if the direction variable in that particular room is greater than zero (remember that we loaded the direction vectors for each room into variable N(r), S(r) and so on so each of these has a variable of zero or greater). If the value is greater than zero then something happens in the program. If the value is zero, the program moves on to the next line. If all the values are zero, we wind up at line 380. Line 380 says you can't move in that direction and takes you back to line 240, which asks for a new direction.

If the direction vector is greater than zero, the move is a valid move. In this case, R—the variable that holds the number of the room you're in—changes to the value of the direction vector, which also happens to be the location of the new

room to which you've moved. The last part of the instruction sends you back to the asking for new direction routines (which incidentally also prints out the room description of the room—the new room in this case—that you're in).

Let's look at an example. When you start out, you're at room 1. Let's say you type "Down." Lines 310, 320, 330, and 340 don't apply as the first letter of "Down" is "D" and those lines are looking for an N, S, E, or W.

Line 360 though is looking for a D and finds one. It then says, If D(r) is greater than zero then R=D(r). Well, remember r is 1. D(1) happens to be the number 2. And this means that R, the room location variable, becomes 2 and we have in effect moved to room 2. And that, my friend, is how you move around. You should be able to see how the data in lines 3010 through 3120, working in conjunction with the first letter of the direction, determine to which room you've moved.

Lines 1000 through 1170 cover special situations.

Lines 1010 and 1020 tell the program to set the pelican repellent indicator (I) to 1 once you're in room 7. After you set the repellent, you cannot reenter room 7.

Lines 1030 and 1040 are the instructions as to which pelican message to print out depending on whether you have the pelican repellent.

Line 1050 sets the indicator (I) to 2, which shows that you have reached room 12 and therefore now have the dilithium crystals.

Line 1060 says that when you get back to room 1 with the dilithium crystals you get the game-winning messages contained in lines 1090 through 1160 and the game is over.

In most of the commercial adventure games, the moving-around routines are more complex and written in machine language so they are faster and more compact. But there is still a lot of fun awaiting you in trying your hand (and imagination) at designing your own adventures. □

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# Gameline

## **Knight of Diamonds**

By Andrew Greenberg and Robert Woodhead.

When you already have the number one selling game for the Apple in the United States and almost topple *VisiCalc* for supremacy, it is exceptionally difficult to market a second scenario successfully. Should a sequel be a "Son of Wizardry," "Wizardry Strikes Back," or "Shadow of Wizardry Past"? Much as the sequel to a book or movie rarely lives up to the original, so it is with sequels to computer games. Masters Greenberg and Woodhead have not fallen into one of these easy traps. Instead, *Knight of Diamonds* (KOD), is a natural extension of *Proving Ground of the Mad Overlord*, the seldom-used name of the first *Wizardry* scenario. KOD does not compete with *Proving Ground*, it complements it and enriches it, similar to the way the second semester of a year course is an extension of the first semester.

In *Proving Ground*, thirteenth level characters are capable of overcoming (with a lot of luck) all the obstacles and completing the game by killing the evil wizard, Werdna. KOD takes over from there by requiring thirteenth level characters for entrance. New characters are not developed in KOD; you are required to have generated and developed characters in *Proving Ground*, then to transfer them over to KOD. Thus, unless you have a copy of *Proving Ground*, you can not play KOD, much as you must learn to walk before you can run.

*Proving Ground* is *Wizardry's* boot camp. The high mortality rate is deliberate. Only the strongest, quickest, and luckiest characters survive. The sight of rows of tombstones is all too familiar. The player's development progress in organizing his party (mixing character types, buying equipment, and determining fighting order) will now really be tested. Make no mistake, KOD is not for beginners. There are traps and pits that will automatically outright kill any character below thirteenth level, and that is just on the first level of the dungeon! The monster groups also come fast and furious.

Among *Wizardry's* strongest points have been the diversity and ingenuity of its monsters. Many new and diabolical monster types have been added, much to our delight and dismay. KOD certainly carries on the tradition of Medusalizards, dragonflies, hatamotos, raven lords, gating bleeds, (who can bring in other bleeds by opening an interdimensional gate and calling for help), and the insidious creeping coins. Now we get the rather dubious pleasure of fighting hordes of corrosive slime, carriers (of black plague), gating fuzballs (who multiply like tribbles and are totally immune to magic), flack, dragon zombies (what a thought!), were-amoebas (very tough), and the deadly dink, to mention only a few.

Without a doubt, the crowning accomplishment is the introduction of the no-see-um swarms. Imagine ethereal gnats that breathe one to four hits of damage to each member of the party, per gnat, and that these gnats come in swarms of usually twenty-four to thirty-six. They are impervious to most magic spells, and since only three members of the party can physically attack at one time, it will obviously take a long time to eliminate the swarm. Meanwhile the swarm is blasting each member of your party twenty to ninety hits per pass. To add to

all this fun, the swarm also has a fondness for magic users and tends to breathe double the damage on them as on the fighters. It will take exceptional commanding on your part to save your party and to overcome this devastating menace.

*Knight of Diamonds* is a six-level dungeon with several new twists. Instead of just (just, he says!) fighting and mapping your way down to the bottom level to accomplish your quest, there are individual quests and objectives on each level. The objects of these quests are required for the final quest on the sixth level. Riddles and puzzles abound, and the atmosphere of the dungeon has been enhanced with many travelog-style descriptions. Gone are the easy elevators between levels, and two of the levels have antiteleport spells encompassing the entire level.

In your journeys, you may chance upon a recluse sage who will impart valuable hints to you, but be prepared—consulting fees in this dungeon run high. Smog beasts can really play havoc with the economy. Unlike *Proving Ground*, where you could teleport into rock with impunity (you bounced back), in KOD, to use Alfred Bester's famous phrase, you "blue-jaunt." The entire party is lost, as they explode in solid granite.

"Blue-jaunting" emphasizes the supreme importance of mapping. Successful *Wizardry* playing is greatly hinged on the accuracy of your dungeon maps. Once your party gets lost, you can usually count on its demise. Without totally accurate maps, one cannot teleport and avoid the threat of "blue-jaunting." This can make trying to return from the lower levels back to the castle stairs sufficiently perilous to require nerves of steel. Mapping also enables you to locate secret rooms and sections of the dungeon that are not obviously there. You will have a hole in your map at that location. Many of the really important sections of the dungeon are very well hidden from all but the most diligent mappers.

There are no new spells added to this scenario, but several of the regular ones have had their effects altered. Cautiously retry all the spells first, preferably in noncritical situations. The monsters are also much tougher and more resistant to magic than before. Spells thrown have less hit effectiveness or no effect at all on many of the monster types.

For those adventurous enough to delve boldly into the dungeons of *Knight of Diamonds* and win the Staff of Gnilda, the reward will be great. Another rare rank will be permanently added to your characters' names, an accomplishment few other gameplayers will boast of achieving.

One can only wonder what this amazing duo of Greenberg and Woodhead will do for the next scenario. Perhaps play it live over modems or add animation. Second-guessing rarely equals the reality of their scenarios. 

Apple II, Apple II Plus, Apple III (emulation mode), 48K, disk, *Wizardry: "Proving Ground of the Mad Overlord."* \$34.95 from Sirtech, 6 Main Street, Ogdensburg, NY 13669; (315) 393-6633.

## **Caverns of Mars**

By Greg Christensen.

Mars.

The angry red planet.

When Herbert George Wells conceived his destructive Martian war machines, he could not possibly have imagined the computer game revolution that would spread across this nation like pollen in a strong wind. Should those many-limbed creatures try again to invade our world, they'll find us easy pickings, because we'll all be playing *Caverns of Mars*.

This impressive game is the imaginative brainchild of seventeen-year-old Greg Christensen, who submitted the program to the Atari Program Exchange. Sales were significant enough to warrant the game's entry into Atari's regular product line (which is why those of you who receive APX catalogs will note its absence).

*Caverns of Mars* requires a single joystick. The player begins at the top of a large subterranean shaft (a Martian cavern, of course). The immediate object is to pilot a spaceship through the cavern's many twists and turns, which scroll very neatly up the screen. Left and right correspond to the screen's left and right. Pushing the joystick forward brings the ship to the top of the screen and speeds up the action slightly; pulling back on the joystick lowers the ship and correspondingly slows the movement. At no time does the ship come to a complete halt (unless it hits something, in which case it stops dead).

The firing button discharges twin bursts from either side of the spaceship, making it possible to hit two targets with the same shot.

The first level is merely a series of tunnels weaving back and forth, all of which contain pleasantly stationary targets: hostile warships and fuel tanks. The former provides points; the latter revitalizes the player's fuel supply. This is pretty tame stuff, with the exception of one quick sideways jaunt that is tough to catch.

The game proper starts with level two, which features a large chamber stuffed with enemy warships, all traveling upward toward (they hope) destructive collisions. The enemy never returns fire, but their numbers alone are sufficient to render a successful pass of this chamber quite difficult. Again, some of the ships (marked with a red F) are fuel ships. This proliferation of flying gas stations is not accidental; run out of fuel, and your ship explodes.

Level three contains moving force field barriers that have a nasty tendency to smash your ship. The patterns are, however, quite predictable. Not so with level four, which features more caverns, all filled with flickering blue diamonds. Their appearance is strictly random, and the slightest contact is lethal.

Level five contains extremely thin horizontal and vertical corridors. Those who have flown at the top of the screen (to maximize reaction time) will find it necessary to drop to the bottom to allow time for the zigs and zags. Fuel tanks also block a few chambers and must be destroyed to allow uninterrupted passage.

The last level is a long vertical chamber that dumps your ship onto a rounded sphere for refueling. This triggers a time bomb, leaving ninety seconds to go *all the way* back up. Although all enemy ships and force fields are absent, the trip itself easily takes that long. Fail to make it, and your ship goes up with the bomb. A successful exit flashes a message of congratulations—and announces that the next cavern awaits.

The game incorporates several helpful features. An option button allows the player to cycle immediately to any level for practice. The select button is a godsend, as it allows the game to be placed on hold . . . very useful for the panic-stricken moment after destroying the cavern and discovering you must do it again.

There are, however, two annoying surprises in the game program. The first occurs in level two, where an enemy ship will occasionally regenerate near the upper left of the screen. There is no precedent for this, so be extremely wary of it. The second appears in level four, where an entire section of cavern wall will infrequently slam into the flying chamber. Depending on the size of the section, the chamber might be blocked, making destruction unavoidable. Definitely uncool, but it only occurs if the option to play that level out of sequence has been used. It won't happen during the course of a regular game.

High marks for player psychology go to the game's restart programming. Following the loss of one ship (you start out with four) you return to the beginning of the level where you met your doom rather than all the way back to the beginning. Be warned, however: having to start over after the

bomb has been primed almost guarantees insufficient escape time.

This game is great; you'll find it difficult to tear yourself away. Ray Bradbury's *Mars* was never this much fun. ☐  
Atari 400 or 800, disk only; 16K. \$39.95 from Atari Inc., Box 427, Sunnyvale, CA 94086; (800) 538-8547; in California (800) 672-1430.

### **A2-PB1 Pinball**

By Bruce Artwick.

A year is an eternity in the microcomputer market, but it's been that long since Bill Budge seized the initiative from the Japanese with *Raster Blaster* and elevated himself to the position of the premiere programmer in the Apple market.

During that time, Scott Adams has gone graphic, Ken Williams has gone arcade, Jerry Jewell has gone adventure, and Nasir has gone independent. Yet none has unseated Budge.

Many of his most serious challengers have come from the pinball genre. David Snider's *Midnight Magic* is definitely competitive and Don Fudge made a run of his own with *Zero Gravity*. Budge and Snider looked at the genre from an historical viewpoint, bringing us comfortable renditions of classic pinball scenarios. Fudge opted for a neomodern approach that may herald the pinball game of tomorrow.

Now there's a raucous, assertive, brash newcomer that's unabashedly contemporary in styling—featuring the razzle-dazzle lighting and intruding sound that are the hallmarks of today's pinball madness. What's most surprising is not that somebody did a contemporary version, but that it comes from SubLogic—the folks who abjure flash and hype almost to the point of being anonymous.

After all, this is the company that defies the adage that the name's the thing by tacking numbers in front of all their names. Thus, you don't get "Bruce's Colorful Easy-To-Use Hi-Res Graphics and Animation Development System." Instead you're forced to venture into the world of *A2-3D1 Graphics Package*, a most prosaic name if ever there was one. Not for SubLogic "The Astronauts and Pilots Training Ground." They give us *A2-S1 Flight Simulator*.

And now we get to cope with *A2-PB1 Pinball*, although the company has bowed to the demands of commerce to the point of tacking on the equivalent of a subtitle: *Night Mission*. The name *A2-PB1 Pinball* lacks as much pizzazz and boldness as *Night Mission* contains. This is a program that commands attention from the moment it arrives on screen. There are blinkers blinking, bumpers bumping, spinners spinning, pinballs . . . well, you get the idea; and it's all done in faithful simulation of today's arcade machines right down to the quarter slot that you must feed electronically.

What *Night Mission* bids fair to accomplish is the promotion of author Bruce Artwick into the first rank of microcomputer programmers. Artwick has not just provided an artful simulation of contemporary pinball, he's included a module that allows you to modify the game to suit yourself. Just to get you started, he's provided ten options himself, from easy mode to competition mode, which is the one you get when you boot the disk.

The modification capability further sets *Night Mission* apart in that it serves a modest educational purpose. With forty variables to play with, youngsters can experiment to their hearts' content, observing the changes—both dramatic and subtle—that occur. Even if it's only by osmosis, they're bound to learn more about the wide-ranging capabilities of the computer from such tinkering.

The designer notes report that the program was developed in Champaign, Illinois, home of SubLogic, and Amsterdam. Given the contents of the cosmic mode, one might assume that one or both of those cities contain libations stronger than they are normally credited with. The cosmic mode has a ball trail feature that gives the player approx-

imately the same view of the ball as the drunk had of the motorcycle officer when he threatened, "I can lick all ten of you."

But the most bizarre and entertaining feature of the cosmic mode occurs after you've found the right setting to drop almost every ball into the dive bomb chute. This chute holds the balls until a fourth ball enters the chute or until other predetermined sequences are accomplished. The third ball into the chute activates slow motion. If you're successful in dropping the fourth ball into the chute, freeing the others, you're treated to the spectacle of four real balls and about twenty of their shadows cavorting in slow motion on the playing field—all to the accompaniment of sound effects that bear near kinship to a Shostakovian nightmare.

*Night Mission* is a programmer's tour de force, asserting Artwick's claim as a master code manipulator. 

Apple II, Apple II Plus, Apple III (emulation mode), 48K, disk. \$29.95 from SubLogic, 201 West Springfield Avenue, Champaign, IL 61820; (217) 359-8482.

### The Graphics Magician

By Chris Jochumson, David Lubar, and Mark Pelczarski.

Penguin Software has done it again, presenting us with a graphics utility tool of sheer brilliance and magic. The magic is how Penguin makes a graphics magician out of each and every Apple user.

The *Graphics Magician* has three complete sets of programs contained in it: the animation system, the picture/object system, and the super shape system.

The animation routines are divided into three categories. First, there is the shape editor, used for creating any shapes you might imagine. A nice feature of this routine is that you can make your shapes have movement by creating seven separate versions on one screen at the same time. For example, a shape of a robot could have eyes moving and feet walking.

Once your shape is completed it's necessary to have a path for it to follow and this is what the path editor will give you, allowing you to draw a path in all directions including diagonally. Another feature of this section is that you can cause hesitation for speed control.

After you have defined a shape and path you are ready to go on to the third category—the animation routine. Here you are given four machine-language options to choose from, each of which gives you results that vary slightly. After deciding which option you want, you must load in at least one previous shape and path, or more if desired. Now you can use the animation editor to create fascinating, smooth, unbelievable graphics for use in your programs.

The picture/object routines are the second programs in this graphics package. These will let you create pictures and objects that will take up very little room on a disk. The pictures can contain numerous colored objects. Included is an improved one hundred-color fill routine from *The Complete Graphics System* and a trimmed down paintbrush routine from *Special Effects*. There are now 108 colors and only eight brushes. The ease and comfort of this system enables you to draw pictures and objects, with paddles or joystick, which would be exceptional for adventure, educational, or any other program where you could use drawings. Furthermore, all hi-res pictures have quick recall and reconstruction, objects are able to be placed anywhere on the picture.

Super Shapes routines are the last part of the package. With these you may draw large shapes or an entire scene on the screen and store it in a small amount of space. You can also select one of the eight Applesoft colors that may be changed at any time. Using the paddles or joystick you can create any shape you want. There is a speed control for simulating handwriting or drawing with more realism. The shape can be rotated, sized, and scaled at your command. Editing

features are easy and simple to use.

If all this were not enough, Penguin has included on the disk an extra program for binary file transfer. With this you can transfer binary files from one disk to another and you will be able to know the starting address and length of a file in decimal and hexadecimal, which could come in very handy. Another bonus included is an animated alphabet that is already designed to be used in the animation editor or modified with the shape editor.

Each system has machine language routines that allow you to control graphics from your own program. *The Graphics Magician* is menu-driven and simple to use. All the graphics you create are saved to disk for easy storage and fast access. It will be necessary for you to do some programming of your own, but a three-line basic program could start you out. The beginning programmer will be amazed and thrilled at what he will be able to create, and the advanced programmer will be surprised at how much time and space can be saved. The documentation is well written and very helpful when using the software. 

Apple II, Apple II Plus; 48K, disk. \$59.95 from Penguin Software, 830 Fourth Avenue, Geneva, IL 60134; (312) 232-1984.

### Tumblebugs

By Bob Bishop.

Here we have a maze game in which the maze itself is actually difficult. Consider a maze constructed from a grid with dimensions of twenty-five squares-by-fifteen squares. Each square contains a white dot, all of which your character has to eat to get to the next level. With you in the labyrinth are eight tumblebugs, which you must avoid at all costs. Sound like *Pac-Man*? You should have it so easy!

First of all, this maze has more than three times the corridor area to cover than the typical arcade or computer version of *Pac-Man*. Therefore, to fit on the Apple's display, the corridors and the characters have to be considerably smaller. So, to prevent eye strain, Bob Bishop has thoughtfully provided a magnifying glass that follows you around the maze. Nice of him, wasn't it? Think again. The magnified area displays a five-by-five-square area immediately surrounding your character. However, it covers a nine-by-nine-square area of the background, leaving more than two-thirds of the area closest to you invisible. Watch out! When you are chugging along on a straight-away, and a bug comes at you head-on, it takes superhuman reflexes to turn around fast enough. There is no doubt that the traveling magnifier is an impressive programming feat. When you are at the edge of the screen it even accurately magnifies part of the score! It is questionable, however, whether the magnifier makes the game less or more difficult.

The next thing you will note is that the program creates a random maze each time you play. No memorizing guaranteed paths in this one! Furthermore, as you run around, you leave behind a trail of red dots, and when a bug finds a red dot, he follows it, picking dots up behind him.

You can fool the bugs by making false forks, branching off the path and then turning back. This often works, but you have to do it frequently, because every bug that follows a false path also erases it, allowing the next one that picks up the trail to go the right way.

By the way, the bugs in the background maze are represented by blue dots. On a black and white monitor these are difficult to distinguish from the red dots, but everything is clear under the magnifier.

The game design provides some frustrations. Occasionally there is a dead end in the maze, which the magnifier usually hides until you are committed. If in the meantime a bug has picked up your path, there is no hope. They may move slow-

er than you do, but they are relentless. You will sometimes doubt that there are only eight of them. The second level contains more and longer dead ends, and no opportunities to run the bugs around in circles. It is a killer.

From a technical standpoint, *Tumblebugs* is excellent. You have the option of choosing keyboard input via the I-J-K-M diamond or joystick play. The joystick is easier than the keyboard at first, but with practice the keyboard control allows faster response. Both are good. A joystick with auto centering is preferred to one without. Animation is good, and the maze generator is fast. Your capture is accompanied by an insectivorous voice shouting, "We gotcha!" This mocking little addition can be toggled on and off with control-S.

The game can be halted using escape, which is more than just useful for phone calls. Sometimes it is good for stopping to look at the rest of the maze without risk of capture, which is, by the way, fatal. You get one man in this game.

*Tumblebugs* is a solid game. It is possible for you to improve fast enough to keep it interesting, but it may take you a very long time to master. It could stand some more variety, but it certainly does not lack challenge.

Apple II, Apple II Plus, 48K, disk. Atari 400 or 800, 24K, disk. \$29.95 from Datasoft, 19519 Business Center Drive, Northridge, CA 91324; (213) 701-5161.

### Minotaur

By Larry Miller.

Sometimes you wonder—which came first, life or the game? Computer games have their counterparts in real life situations and life often comes to resemble a game you have just played. In this case, the game is *Minotaur*, and the real life situation it seems to resemble most is taking the wrong ramp off a freeway in a strange part of town and trying to find your way back on.

You know the feeling, alone in your car, Furies and dragons lurking the streets, ghostly Charons pouncing on you from around corners, and your only hope is finding a pair of wings to fly over the scene and locate the on ramp, or an elixir left by a virgin to . . . wait a minute, it seems we have the game mixed up with the real life situation. Is there any way out?

There are many ways out in *Minotaur*, except it's only out of one maze and into another as you, Theseus, begin at the top floor and battle your way down to the fourth where the Minotaur waits. After you shoot him you are advanced to a different and more difficult maze. A total of thirty-two mazes exist; they vary from game to game.

The creature assault action in this game can get frantic, although you have a choice of five speeds to play at, and you will be glad Theseus's sword fires constantly in any of four directions as you play. The game can be played in joystick, keyboard, and paddle modes.

Each level of a maze has its friends and denizens. Friends consist of an elixir that gives you the power to roam through the maze as a ghost; clubs, which allow you to break through walls (out of sheer frustration!); wings to fly you over the maze and scan it for escapes (better take a Polaroid); and virgins and skulls to give you extra lives, as the ninety-nine you start out with can get eaten up by some of the hungriest denizens in gaming.

Various fiends involved in keeping you from your quest include room monsters and hall creatures like dragons, Furies, Centaurs, snakes, and the Cyclops. An added menace, the Charon, can only attack you in spirit form, so when you quaff that elixir, beware!

Scoring for *Minotaur* is a battle between lives lost and lives gained as you play. Better keep a few in reserve because you'll need them by the time you get to the Minotaur, he takes several strikes to kill and will take some virgin and skull points out of you before he goes down.

During the playing of the game, mysterious messages will appear at odd intervals across the bottom of the screen. "I am Hadron, I have beaten you to the Minotaur and killed him" might have you furiously flipping through the documentation for a clue to who this guy is and what he is doing in level four of your maze killing your Minotaur while you're still stuck in level two pounding your way out.

Experienced game players declare such chicanery a Sirius Software trademark and say not to worry. But when you get to level four and you're just picking up another hammer, you're not looking for any extra competition when you bag the Minotaur. You've played too hard to put up with that.

Apple II, Apple II Plus, 48K, disk. \$34.95 from Sirius Software, 10364 Rockingham Drive, Sacramento, CA 95827; (916) 366-1195.

### Zork II

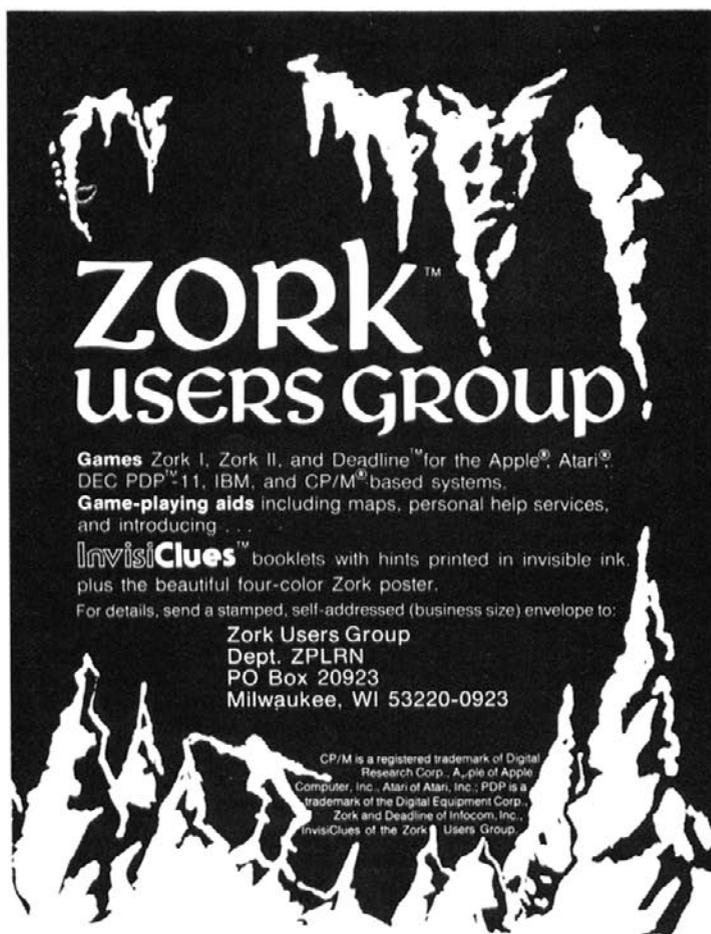
By Dave Lebling and Marc Blank.

Once again the master adventurers at Infocom have thrust us into the titillating, terrifying, and sometimes intimidating world of Zork. *Zork II* takes up where *Zork I* left off (although you need not have played *Zork I* to play *Zork II*), starting you out deep in the land of Zork. Here you'll meet the Wizard of Frobozz, a formidable foe who'll appear randomly to thwart your efforts at solving the many riddles in the game.

This is an ambitious adventure, replete with volcanoes, dragons, princesses, unicorns, and a myriad of other creatures and objects that will extend your imagination. In this totally (and classically) text game, the descriptions of the rooms are fascinating and detailed. A well-balanced mix of humor, wit, and wry puns makes reading them almost as pleasurable as solving the game itself.

The riddles and puzzles are intricate but, for the most part, their answers are logical and succumb to rigorous applica-

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McK

# MODEM GAMESMANSHIP



## Right from the Source and Back Again

by ROE R. ADAMS III

Welcome, seeker.

Seat yourself before the tubular Rays of Cathode, touch the magic numbers of Mother Bell, and behold the telecommunicated trail of infinite voices, each searching for its other, its mate; groping in the dark, all seeking the answer. Any answer.

Listen you to the pitiful cries of the stranded, the querulous voices of the hopeful, the anguish of the lost and despairing, and even the occasional sharp, jubilant cry of the victorious.

Mystery House Help!

Help! I've gotten into the tower and am facing Daisy! How do I get by her and/or kill her and get to read the note?

TCP072

Schubels & Son's Starmaster.

Is anyone else playing Starmaster? I'm new in the galaxy and would like to hear from you.

TCM873

Scott Adams Adventure #1 Help!!!

Without breaking your neck, how do you wake the dragon, how do you kill the dragon, and what can you use for a torch? I have had the program for four years and still can't figure it out.

TCM144

Ninjas Live Forever!!!

I finally did it!! I now am the proud owner of two hobbit ninjas. Thanx, Joey.

TCY464

So it goes on the gaming bulletin board of the Source.

The Source, a.k.a. Source Telecomputing Corporation, founded in McLean, Virginia, in 1979 and acquired one year later as part of the Reader's Digest publishing empire, is heavi-

ly into gaming. There are seventy-three games currently available on-line waiting for people to play. They fall into six general categories: strategy, sports, logic, arcade, utilitarian, and, of course, adventure.

Mainframe adventures really find a home on large databases, and usually take advantage of their surroundings to unwind, relax, and stretch out—interminably. From the 550-point expansion of the original *Adventure* to the ten vast levels of *Blackdragon*, the opportunities to get hopelessly stumped are limitless. The less complex personal computer games that had their origins on the big systems—*Adventure*, *Zork*, and *Wizardry*—are fairly good at this, too, of course. Then there are the arcades on which no living being has made it past level four . . . Thus did the Source step in to fill a need.

**Advice to the Gamelorn.** Every day, many people use the bulletin-board aspect of Post Apple and Post Games to seek hints and/or solutions to tricky places in different adventure games and to compare arcade scores and techniques. Then via electronic s-mail (source mail), fellow adventurers aid one another. This capability of continentwide communications for game solving has become one of the Source's most valued hidden assets, apparent only to those growing legions of Apple adventure players who are flocking to the Source to draw from this collective pool of knowledge. The popularity of a game is readily chartable from the frequency of messages concerning it over a period of time.

In adventure games, *Zork I and II*, *Adventure* itself, all of On-Line's hi-res adventures, and Scott Adams's text and new hi-res adventures are up there constantly. The arcade games come and go with supersonic rapidity, although *Castle Wolfenstein* stayed for quite a while. Recently though, it has been *Wizardry* that has dominated the Posts as it has fired the imaginations of people all around the country.

At the moment, there are two mammoth projects underway that will restructure gaming on the Source and may have widespread effects throughout the country. Until now, all efforts to solve one of these myriad adventure games have been basically one-on-one. Occasionally, for a special game like *Zork*, small groups have sprung up, collectively trying to solve

Background is quoted from *The Pits*,  
copyright © 1980, 1981, by Jim Walters and Dave Broadhurst

# Games from the Source

What can you play on the Source?

All the great adventures are here. The very young can enjoy role playing, too, with *Hunt The Wumpus* and *Quest*. Pure delight lurks around every corner in *Pits*, an adventure fantasy by Jim Walters and Dave Broadhurst that at times out-Zorks Zork.

There are fifteen strategic games. Some, such as *Scorefour*, *Toro* (bullfighting), *Sinners*, and *Civil War* are elementary level, while others are quite complex. *Hammurabi*, *King*, and *Sumer* test your ability to govern a society, allocating resources and developing income, while in outer space, rockets blast off with *Trek* and *Rescue*. For the mercantile group, *Stocks* and *Market*, let you build financial empires while you outwit your computer foe. The classics are here as well: *Nim* and *Othello*. Watch out, the computer plays a wicked game of *Othello*!

Sports buffs are really in their element with two versions each of football and golf. One version is for duffers and arm-chair quarterbacks, while the other is intense head-to-head competition against the computer involving extensive strategic options. The sport of kings is also here. You can pick which thoroughbred you want to win, and then place a friendly wager on the side. The computer will also lay out a rather difficult slalom course and dare you to ski it against a clock.

**Step Right Up.** "Mind-stretching done here," reads the sign above the Source's logic games. Simple warm-up ones

like *Digits*, *Pica*, and *Guess* prepare you for the more difficult ones, like the classic logic story *Farmer, Frogs* and *IQtest* keep you hopping from peg to peg, while *Watchman* marches you around a town trying to find the exact shortest path. *Hangman* is here for all ages to enjoy, as is a really great version of *Mastermind*. There is even a lunar landing simulator that almost requires a NASA backup computer to handle the ever-changing landing parameters. If your brain feels sluggish today, do not try this one.

Arcade games divide into two groups: the casino style and everything else (must be the proximity to Atlantic City). All of the old favorites are here: blackjack, craps, onearm (slot machine), wheel (roulette), poker, Vegas (four dice games), and even coin flipping for those on limited budgets. A stiff game of 500 rummy can be had against the computer as well as top level backgammon. The Source even has the Goren bridge tutor, *Autobridge*, on-line, and tic-tac-toe in Spanish! You can race around in *Dodgem*, practice your artillery accuracy, or wander inside a four-by-four tic-tac-toe cube. And if you ever thought that checkers was a really simple game, you have not played against "The Mean Checker Machine" with five levels of difficulty.

Turn down this alley to the gaming bazaar. Here bio-rhythm charts are custom made, the future foretold with the casting of the *I-Ching*, random Shakespearean sonnets uttered, and calendars printed out for any year after 1852. Listen to random-generated poetry and contemplate the meaning of statistics about single dates while Printwiz is creating a giant poster for you. The last booth offers custom mazes for use in role-playing games — the real strength of databases like the Source.

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it. Now, the greatest, and certainly the longest, adventure game is starting to hit the market—*Time Zone*. Written by Roberta Williams and published by On-Line, it is a hi-res graphic adventure on six double-sided disks and contains forty separate scenarios and more than 1,000 hi-res pictures. This game took more than fourteen months to complete and it has been estimated that it will take people a year to solve due to its extreme complexity.

Watching everyone flounder on Post as they tried to get a handle on the new game (forty separate starting points!), raised an intriguing possibility. What was needed was an organized structure, a skeleton that could be fleshed out by individuals as they solved small portions of the overall game. The Source's Mary Lou Forbes, senior editor, and Pat Trenor, head of user publications, both felt the idea had wide appeal, and it was approved as a Source-supported function on the public section under user publishing. Thus was started the *Vault of Ages*. This is the introduction you see when you gain access to it:

## VAULT OF AGES TIME ZONE REPOSITORY

"Welcome to the Vault of Ages. Here we are coordinating the greatest group effort in adventures solving—the complete mapping of On-Line's *Time Zone*.

"I am the curator of the vault. You are the eighty-fifth intrepid time traveler to seek the knowledge of the vault. Herein we are gathering, verifying, and correlating information about each time zone. Feel free to visit here anytime, but remember that for the vault to fill, we need your contributions of information. Anytime you have new information about mapping, puzzle solutions, traps overcome, items found, s-mail this info to me. After verification, your contributed jigsaw puzzle piece will be added to the vault file, and your name will be entered upon the rolls as a master solver. Now step this way and I will introduce you to the Master Catalog.

"This is the catalog room; select the number next to the location and era you wish to study. Good Hunting—Time Awaits."

(Then follows a list of the forty scenarios.)

**Games Enough, and Time.** There is another project underway that dwarfs this one. The Games Information Exchange is the creation of Maria Price of Los Angeles, California. She and her assistant are donating their time and money to making this a reality. From a lengthy interview:

"The purpose of the Game Information Exchange is eventually to contain a body of information on all Apple computer games, or games that can be played on-line, either play-by-mail like *Flying Buffalos*, or Source-offered. This information will include a brief synopsis (not a review) of each game, verified strategy and playing hints, and a complete solution to each game. After it's on-line and running correctly, expansion to a more magazinelike format could be possible, too. Articles on game-playing, perhaps even reprints from other publications (with permission, naturally), an index of game articles in current computer magazines, et cetera. We will offer to answer questions about gaming in general, or specific questions on a game. The most representative questions and answers will be included in a 'Dear Hawkwind' column."

Price went on to say that "our main hope for this project is to organize and make available as much information about computer games as we can collect, to distribute it to the widest possible audience, and to start a collective exchange of

information between the players themselves. I envision an 'Apple Game Central.'"

This project is similar to writing a massive book and will undoubtedly take several years to achieve full potential. Those close to the project refer to it as the Final Encyclopedia—Computer Games Section, after Gordon Dickson's novel. Whatever its eventual form, the mere fact that it has been conceived and started will doubtless inspire similar projects elsewhere, and the future of computer gaming will be changed.

**Do Not Adjust Your Picture.** Another future change may come in the area of graphics. Today, games on the Source itself do not have hi-res graphics capability, because of the lack of interface between the main-frame and the customer's computer. This has severely limited the games on the Source to text and imitation graphics (using !, -, and other symbols to form walls and floors). The demands of the marketplace are weighted so heavily toward hi-res graphics that longtime text adventure companies, such as Adventure International, are reissuing all their adventures with hi-res. No matter how good the games on the Source are, eventually they will be in small demand in their present form.

A solution may be available shortly. Gamemaster, based in Chicago, is a modern game-playing organization that is highly successful. Recently, after a year and a half on development, they have come up with a working graphics driver for the Apple. This driver is a disk the customer purchases and puts into his Apple. Then when the Gamemaster computer sends down specific information the driver turns on and the correct picture is displayed. If such a revolutionary technique could be adapted to the Source, then the Source's games themselves might become a major force in the microcomputer world. The Source is in its infancy, just three years old.

Why, ten years from now . . .

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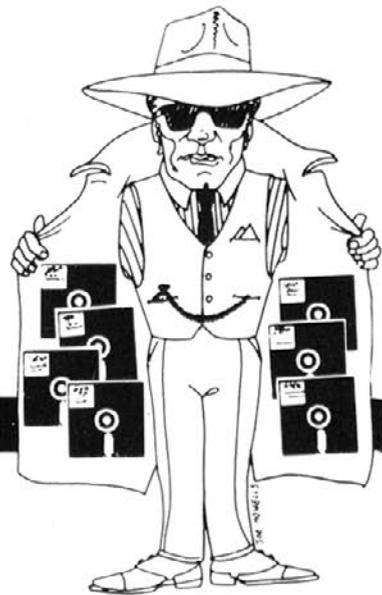
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# The Future in Education:

## A-

by SHERWIN STEFFIN

Thus far in this series of articles, we have identified some characteristics of instructional software that will help you make more-informed purchasing decisions. This time we'll depart from that concern, looking instead at some future trends in educational computing.

Our discussion will focus on three areas—the computer and the learner; the computer and the management of instruction; and the computer as it affects the environment in which learning takes place.

**New Trends in Computing and Learning.** Every day the media and trade journals report on new developments in computing hardware. Some of these new trends are certain to have a powerful impact on the presentation of information to learners. In terms of hardware, two fundamental changes, or evolutions, are occurring almost daily. These are the rapid increase of available memory and the proliferation of new and highly flexible I/O (input/output) capabilities.

Long-time personal computer users will remember the days only a few years ago when 16K of RAM was considered to be more than adequate. Today, various configurations of onboard memory, or offboard additions, make from 256K to one megabyte of memory not uncommon.

Growing memory capability, coupled with increased efficiency of computer operating systems, makes the potential for access to significant databases and complex software an immediate reality. As an example of this, one educational software writer is now designing a dictionary. Such a database makes looking up words, definitions and usages a far easier task, and serves to increase learners' motivation as they work with reading materials. Expanding such a dictionary to a thesaurus, or a dictionary of synonyms and antonyms, provides readers with an outstanding tool. As a prerequisite, such a database must have a substantial amount of memory available.

In the area of I/O, new developments can be expected to occur within a very short time. Flat screen CRT displays are available now, but they are expensive. As this technology progresses, costs can be expected to decrease sharply. In combination with efficient, rechargeable batteries, such displays make the full-capability computer in a briefcase an assured reality.

Light pens and touch sensitive CRT plates are important new additions to user interface with the computer. The video disk as a high-resolution storage medium has both video and computer-generated graphics capability, available to learners in fully interactive configurations. A standardized format for the video disk, consumer recording capabilities to the

disk, and appropriate interface software are the three major developments that must occur before we can take full advantage of this new medium.

As learning theorists and educators gain in their understanding of the microcomputer and its peripherals, we can certainly look forward to enhanced, elegant, and sophisticated software that brings together the knowledge and discipline of the educator with the flexibility and interactivity of the computer.

**The Computer as a Manager of Instruction.** We have seen that educators are becoming increasingly responsible for clerical and reporting systems relative to the management of

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students. As a result, it has become even more difficult for teachers to continue to address thoughtfully the learning needs of each individual student. The computer offers teachers new freedom to evaluate the learner's performance and to prescribe the best suited learning activities with more care and insight while still maintaining the required records.

Today there are a number of grade-book programs available to classroom teachers that enable them to maintain attendance, test, and homework records on each student. Yet such record keeping is in a most crude and formative stage as compared with what may be available not too long from now.

Consider for a moment the possibility of a teacher's being able to monitor directly via the students' interaction with the computer. Assessing diagnostic data for each student's approaches, successes, and failures in problem-solving activities gives the educator an opportunity to prescribe the most fruitful learning situation.

In an increasingly complex society committed to freedom and individual privacy, many will experience anxiety about the potential for intrusiveness into the intellectual processes of students. Careful consideration of ethical issues may be a result of this growing capability for privacy invasion. We will also have to give careful attention to the potential for "mind control" or, to use a less loaded expression, the influencing of attitudes and values of captive learners.

**The Learning Environment.** There can be little doubt that the presence of the computer in today's society is ultimately going to have an impact on where learning occurs. For more than one hundred and fifty years we have perceived the schoolhouse as the center of learning and the teacher's role as broadcaster of instruction. Somewhere in the 1850s, an architect named Quincy (not a relative of the famous coroner)

developed the design that was to become the model of school architecture from then until now. It consisted, in essence, of a square building divided into a number of rectangular classrooms with corridors separating classroom cubicles. The name given to such a joyful design—the Quincy box.

While conducive to the caging and control of large populations of young people, such architecture, in all its variations, leaves much to be desired in terms of fostering intellectual divergence. Not only is such an atmosphere intellectually limiting, but it cannot even be said to be cost-beneficial from the perspective of financial management.

The computer, in all its configurations, makes possible a variety of new interactions between teacher and learner. The most significant of these is that the teacher's role can change from that of a broadcaster of instruction to a manager of instruction. The teacher need not always be physically present in order for learners to learn.

This is not to suggest that interaction of students, both with their peers and with mature, caring adults, is to be forsaken. Rather, it is to suggest that time and space need no longer be the limiting factors for the acquisition of information.

Interaction, storage, and response make the use of computer terminals located at a distance an insignificant factor in their impact on learners. It's easy to visualize students interacting with the computer at home in order to get certain kinds of information and develop certain kinds of skills. Thereafter, students and teachers would come together for other kinds of activities that are best mediated by human interaction, dialogue, and support. The computer's enormous flexibility enables it to fit into the total learning structure, promising greatly improved efficiency in learning at greatly decreased cost. SL

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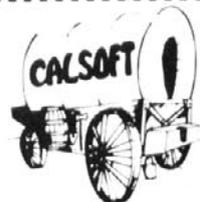
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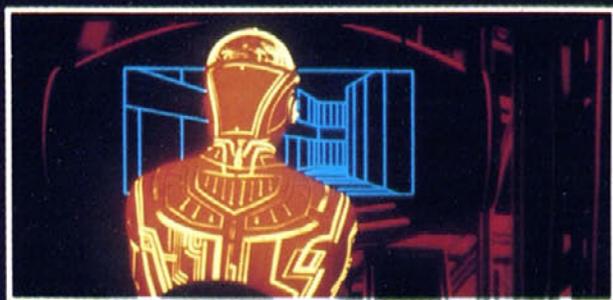
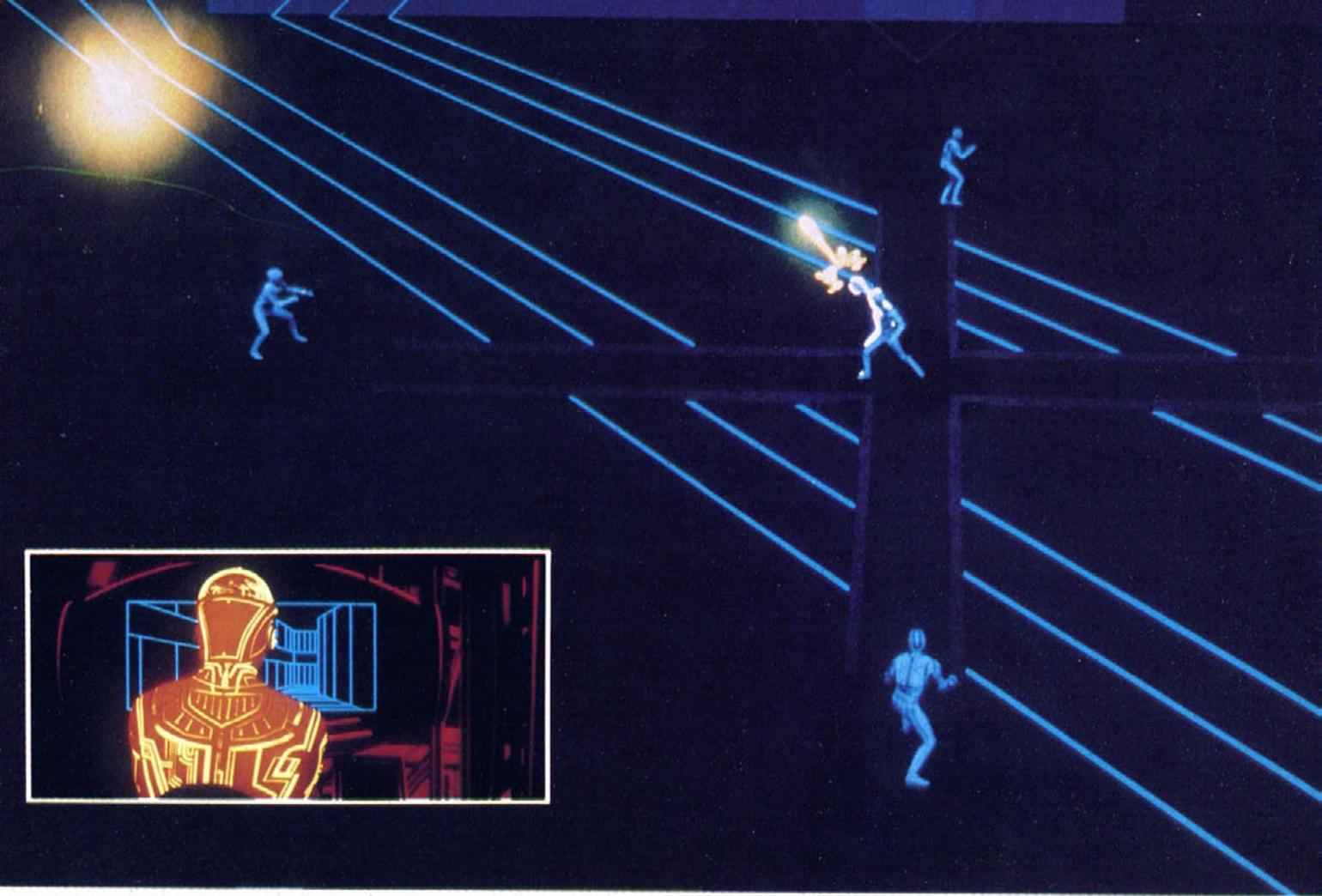
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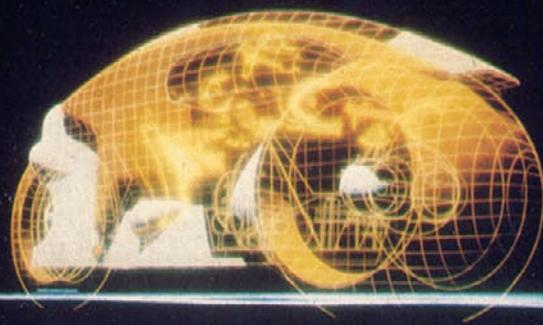
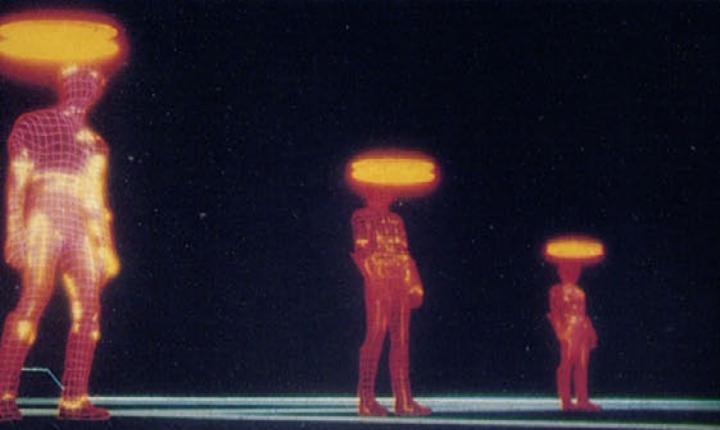
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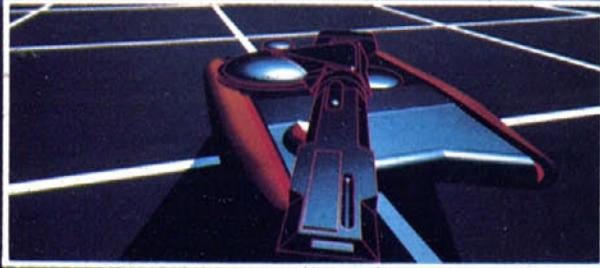


# TRON:

Disney Takes Computer Games to

by ANDREW CHRISTIE





Once upon a time, there was a young programmer who worked for a huge communications conglomerate. These days, he owns his own video game arcade and is the best gamer in town. He is also the author of the wildly successful *Space Paranoids*, and success has brought with it an inevitable problem: he suspects his former boss at the company of piracy.

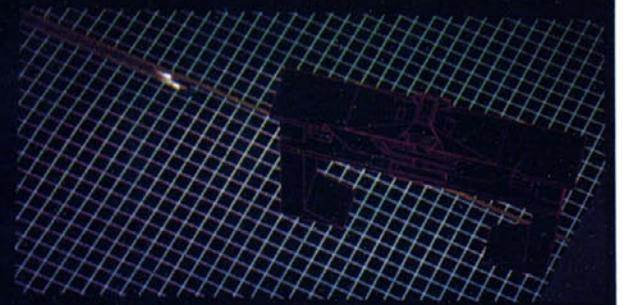
Breaking into the company one night to retrieve evidence of program thefts, the boy genius stumbles across his boss's Master Control Program, which has a knack for patching into others' computers—like the Pentagon's. He is even more surprised when the MCP activates a security laser behind him, which proceeds to disassemble his basic molecular structure and scatter it through several miles of computer circuitry. When he opens his eyes . . . he isn't in Kansas anymore.

**Making the Magic.** The *Tron* trailers are parked three-deep on the lot at Walt Disney Studios. In trailer number 10, an artist is wielding an airbrush over the vector lines of a video game grid scene, adjusting the valves of the air tanks, and swearing into the telephone. Across from him, four ink-and-paint girls, plugged into their Walkmans, are offloading several dozen crates full of the latest character cels, each cel representing one-fourth of one frame of film. The cels are now ready to be photo-rotoscoped, one frame at a time, for backgrounds, special lighting effects, and color.

At the far end of the trailer, Jerry Rees is hunched over his Chromatics Synthavision terminal waiting for transmission of motion tests for the next scene. Larry Elin is on the other end at Mathematics Applications Group Incorporated in New York waiting to send the tests over the modem from a Celco

*Electronic gladiators fight with deadly pellets of light in Tron's video game arena and hunt each other in computer-generated game tanks (left). A police Recognizer (below) watches over a pair of racing lightcycles, vehicles of solid energy created by the spontaneous fusion of three computer warriors (below left).*

# the Outer Limit



CFR 4000. On this day, however, the eastern seaboard is pre-occupied with its worst spring blizzard since 1915 and nothing is going in or out of New York. Patience is a virtue. Patience is all. After ten months in postproduction for *Tron*, patience is a necessity.

No one has been more patient than Steven Lisberger, who got the idea of doing a computer game movie in 1978. As a student at the University of Boston, Lisberger had made the short *Cosmic Cartoon*, a series of camera pans over fantastically beautiful Greek classical and interstellar landscapes, accompanied by Holst's *Planets*. With this animation credit, he and partner Donald Kushner brought their idea for a movie set in a world of computer arcade games to Disney in the summer of 1980.

"It's to Disney's credit that they didn't say, 'Call us when computers can do a dog,'" Lisberger recalls. "We were interested in creating real objects and environments that couldn't

exist in the physical world. That's something computer-generated images can do very well."

*Tron* is the movie that demonstrates definitively what computer-generated imagery can do.

**Grand Illusions.** The film opens with a nighttime aerial panorama of a city. The scene was not shot from the air, nor is the city really a city. Everything—movement, buildings, streets, cars, lights—is solid computer simulation. It is a breathtaking piece of work, recalling, in appearance and effect (aptly enough), Wendy, Michael, and John's first spectacular fly-over of London in *Peter Pan*.

The scene is provided courtesy of Robert Abel and Associates of Los Angeles, who also provided the basis for the digital scene-simulating expertise of special effects co-director Richard Taylor. In his six years with Abel and Associates, Taylor won four Clio awards, the advertising industry's award for excellence in television commercial production. He created all those psychedelic bubble productions for 7-Up and the man walking his pet Levis jeans logo through a fantasy world.

Taylor, now director of the digital scene simulation division at Information International Incorporated (Triple-I) of

Los Angeles, joined Lisberger's team in early 1981, along with *Star Wars* matte painter Harrison Ellenshaw. For *Tron*, he is applying everything he learned about "candy-apple neon" animation in television.

"When we got the go from Disney, we started redesigning all the objects and characters from scratch. In this film, we are using a new technology in a context and to an extent never tried before. What has always been done previously with miniatures or forced perspective, we are doing in computer simulation, creating the images in a composite form."

The job of *Tron's* creative team was to create writer-director Lisberger's "counterfeit reality," visualizing the progress of Flynn, the rash game programmer, through the computer arcade game universe he is blasted into by the Master Control Program; the world and its digital denizens completely dominated by the evil MCP.

Comic artist Jean "Moebius" Giraud, summoned from his windmill in the Pyrenees, came up with the character design concepts for the living programs in the strange new world—Crom, an electronic warrior; Ram, a rebel program; Yori, a simulation program; and *Tron* himself, a security program—

## Micro Movie Madness



On the face of it, *Evilspeak* is the latest cinematic descendant of *Carrie*, this time featuring a hapless young man at a military school, sorely tried by the grim circumstances of existence that are a horror film protagonist's lot, until he gets mad as hell (literally) and decides not to take it anymore.

The big news here is the feature film debut of the Apple computer (uncredited but unmistakable), in a sort of daemon ex machina role. The Apple II has had the most success among the hot young micros in making the transition from home use to Hollywood, beginning last year with a guest shot as a bank robber on the "Simon and Simon" series.

**Felonious Monk.** *Evilspeak* shows some promise in the early going when Clint Howard, all shooting eyebrows and quivering cheeks as Stanley, the pudgy orphan nerd at the military academy, discovers a hidden chamber under the academy's chapel, which turns out to be the semi-final resting place of Esteban, a devil-worshipping monk who fled Spain in the sixteenth century. (This is, evidently, one of the few military academies to have been founded in North America in the fifteen-hundreds.)

Stan finds Esteban's how-to book, and, being a Latin buff and a computer whiz, and also apparently having programmed a complete sixteenth-century Latin vocabulary on a floppy disk, proceeds to translate the Black Mass on the academy's Apple. Then one night, he checks out the computer, one disk drive, and a really enormous monitor, and installs them in Esteban's secret chamber. Needless to say, he finds a considerable bug in the system.

It's too bad the rest of the film didn't take its cue from all these D&D adventure gaming elements (Stanley types: "What do I need for Black Mass?" Apple: "Get—mandrake root—sacrament—human blood . . ."), but from then on, it goes through the numbers of a typical modern-day gross fest from the "I Dismember Mama" school of filmmaking, liberally

laced with passages of extreme boredom. (Cinematic highlight: a conniving secretary who smiled while Stan was spanked by his commanding officer gets hers when a pack of satanic hogs interrupt her shower. "Sorry, ma'am—guess this isn't the little pig's room.")

**Dog Gone.** Stan eventually collects everything he needs, but has trouble getting the blood, and this makes for a good re-creation of a common programmer's and gamer's frustration: Stanley's drunken peer group, having threatened our hero with harm—and his little dog, too—stumble onto his program and sacrifice his puppy on the altar, causing a syntax error: "Human blood." Isn't it always the way?

Throughout these dismal proceedings, the Apple turns in an acting job of typical reliability and efficiency, bringing a refreshing naturalism to its dramatic scenes as a computer possessed. It is often delightfully spontaneous, self-booting extensive improvisational ultra-hi-res graphics routines never before seen on the little screen. And it prompts Stanley for the entire Black Mass in medieval Latin without once requiring him to hit return. A bravura performance.

**A Star Is Booted.** Currently, the Apple is going over its many script offers and not making any immediate commitments.

"There are very few really good acting parts for micros today," said the warmly personal computer, looking beige and rested while relaxing poolside recently at the Beverly Hilton. "I'm waiting for a good character role, something I can really sink my chips into . . . I don't want to just get up there and beep and throw a scare into the kids every time out. It was fun, but I have to be careful—once you get typecast in this town, you're through."

The outspoken 6502 would like to see films depicting computers in everyday activities in all walks of life.

"Hollywood is scared of us. We're still awesome, mysterious; the boogeymachine. Hell, I put in my cards one slot at a time in the morning, boot up, and go to work like anyone else. I'd like to see that kind of realism from Hollywood. When they start making movies about computers as functional, feeling, useful members of society, then we'll know we've been accepted."

Additionally, the micro of the hour has hinted that it might be interested in a more humorous configuration of script than what it's been seeing.

"Computing is easy. Comedy is hard." ■

*Evilspeak*, by Joseph Garofalo and Eric Weston, Leisure Investment Company. Low budget.

to whom Flynn, a User, is a savior dropped down from heaven to deliver them all from the MCP.

The realization of the computer environments—an I/O tower where programs once could contact their creators until the MCP shut it down, the Sea of Simulation, the video game grid, et al—was overseen by Taylor from the background drawings of Peter Lloyd, a high-tech commercial artist. Futurist industrial designer Syd Mead came up with the police Recognizers, light cycles, game tanks, and other modes of transportation.

**Working It Out.** Communication between the artist/designer group and the programmer/technician group was initially difficult, with each group possessing the age-old wariness toward the other; the problem compounded at first by the necessity of filming a completed scene at MAGI, shipping it to Burbank for corrections or approval, then shipping it back again to be redone until it was satisfactory. Life became much easier with the installation of the Chromatics terminals at each end, and as each group came to understand the way the other operated.

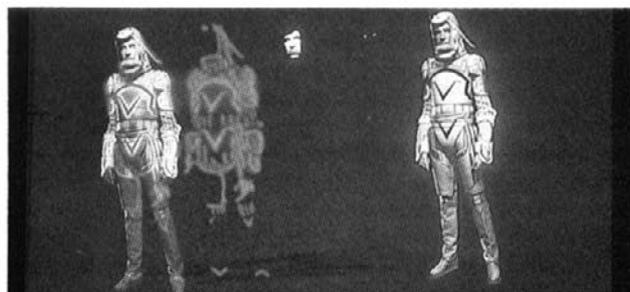
With the terminals in place, the storyboard designs for the vehicular animation that was MAGI's specialty in the film could be transmitted to New York for the programmers to plot in three views, using combinatorial geometry, on a forty-inch by sixty-inch Taylos encoding tablet, then making flow charts for the speed of moving objects and the angle and degree of the camera path. The results could be transmitted to Disney for all necessary corrections in pacing, staging, and animation, and approval by computer-image choreographers Jerry Rees and Bill Kroyer. The finished sequence, executed in MAGI's high-speed raster graphics, could then be committed to film on a PFR recorder.

Fitting the characters into the film was the job of Richard Taylor's Triple-I in Culver City. The actors, wearing white costumes and performing in front of a set that usually consisted of nothing more than a black backdrop, were originally filmed in 70mm black and white. Each frame of film then had to be blown up for the production of cels, four per frame. Cel painters would then create four holdout mattes, one for the character's face, another for his costume, then one for his eyes and teeth, and a fourth for the glowing circuitry of his costume, created in post-production. In the photo-rotoscoping process, controlled by Triple-I's Foonley F-1 computer, four camera passes were made for each group of cels in order to produce a continuous-tone positive transparency, the finished character image to be composited with the computer-generated background graphics.

"It's like painting with light and putting together the pieces of a puzzle," says Taylor. To emphasize that the action in the film is taking place in a world-within-a-world, the backlighting that he perfected for 7-Up is here the sole light source for the microverse of *Tron*; there is none of the reflected light that is used in all other films, and by which we see the so-called real world. Everything here seems to glow dimly from within. The cumulative effect is oppressive and foreboding and may give *Tron* a reputation as the first computer *film noir*.

**The Human Factor.** Elsewhere in the cinematic canon, along with its obvious nodding acquaintance with *The Wizard of Oz*, the movie features David Warner—in the dual role of Sark, the MCP's villainous toady, and Dillinger, the corporate software pirate—creating a virtual sequel to his character The Evil One from *Time Bandits*—longing for the advantages of computer technology in the promotion of general wickedness. ("Digital read-outs! Direct trunk dialing! I must know all!")

Jeff Bridges, as Flynn, is in the classic mold of the scruffy, laid-back, modern movie hero, and is himself an inveterate



Four holdout mattes with portions of a character figure blacked out by cel painters, leaving other areas exposed for varying gradations in light and color made on four separate camera passes. Four cels are required for each frame; 1,240 frames for one minute of film, with frame-by-frame calculations courtesy of the Foonley F-1.

gamer, with a video arcade game in his living room.

"These games have a life of their own," he comments. "When you play, you're actually competing against the people who programmed them. And that's what *Tron* is about—our beings, our intelligence, are found in computer programs. It's like the world inside computers is a mirror image of ours."

**A Dream Is a Wish Your Heart Makes.** At the studio, in screening room 12 of the animation building, they are about to screen the daily rushes. Everyone on the lot knows it, and everyone who can make the time is bopping over to the third floor—past the strains of "Dance of the Hours" from across the hall where they are testing the new digital prints of *Fantasia*—and slipping in through the door.

They have all been here many times before; many come nearly every day, viewing substantially the same scene through the course of a week, with alterations perhaps only in exposure, color, or image density. In the back, Richard Taylor stands by the control console. He will be here till five o'clock to handle any problems that come up, then go home for dinner, then back to Triple-I in Culver City where he may stay until two in the morning to supervise the effects work for tomorrow's rushes. He's here to do his job; he has a theory as to why everyone else is here.

"We never get tired of looking at these images. I think it's because the mind is able to perceive perfection."

(When MAGI and Triple-I started work, the resolution of the graphics was so high that the most sophisticated film stock in the world could not pick up all the details in the images, so the effects team took out some program lines. The image on the film loses nothing, still having all the film can take, but to realize its full potential on screen, computer graphics technology must wait for film technology to catch up.)

For Walt Disney Productions itself, this could be the Big One. Can the anthropomorphic skills that made the world share in the joys, terrors, frustrations, and triumphs of a mouse, a duck, and a flying elephant do it again with living computer programs?

"We're taking a risk with this film," says Lisberger; "but that's what got Disney rolling in the first place. They broke with convention."

If we all clap our hands and believe in computers, *Tron* may prove the salvation of the endangered species of film animation, seeing a unique art form safely into the twenty-first century.

By then, the computer could probably do a dog. **SL**

With thanks to the immensely capable and extremely patient Hilary Clark of the Disney organization.

# Apple II Graphics: Mooving into Animation

by KEN WILLIAMS

Welcome to part five of our series on graphics for the Apple II computer. In this article, we'll examine animation techniques. To do this, we'll use Applesoft and shape tables.

We won't get into much detail here about how to create shape tables since many people already own shape table generation programs and because using shape tables is an extremely poor method of animation. So before we get started, read the section on shape tables (Chapter 9, especially pages 92-96) in your *Applesoft Reference Manual*. In future articles, we'll learn about much faster methods.

Before you can begin animating, you need something to animate. From Applesoft enter the following sequence of commands:

```
CALL -151
4000:04 01 0A 00 00 00 00 00
4008:00 00 92 92 92 09 0D 4D
4010:49 09 DD 4D 49 D8 DB DB
4018:DF DB DB FB 48 0D 0D 0D
4020:0D 0D 4D 49 09 D8 DB DB
4028:1F 1F 1F 1F 1F 1F 48 0D
4030:0D 0D 0D 0D 4D 49 09 DB
4038:1B 1F 1F 1F 1F 1F 1F 1F
4040:1F 68 0D 0D 0D 0D 0D 0D
4048:0D 0D 0D 18 FF 1F FF DB
4050:DB DB 1B 48 49 49 49 49
4058:0D 0D 0D D8 DF FB DB DB
4060:DB DB 00
3DOG
BSAVE HIRES COW,A$4000,L$63
```

In order to prove that we successfully created our shape let's try to draw it.

To do this enter the following commands into Applesoft from the ] prompt:

```
BLOAD HIRES COW
POKE 232,0
POKE 233,64
HGR (If you don't see your cursor, press return
until it appears)
SCALE = 1
HCOLOR = 7
DRAW 1 AT 9,10
```

A hi-res cow should have appeared in the upper left corner of the screen. This particular cow was borrowed from the popular arcade game *Crop Duster* (Slipshod Software). We'll use this cow as our object for practicing animation. In future articles, we'll also look at how the tremendous 3-D effect given to the female chickens in this game was produced.

Before continuing, let's look at how we were able to draw our cow on the hi-res screen. Locations 232 and 233 (\$E8 and \$E9) contain the address of the shape table used by Apple-

soft's *draw* and *xdraw* commands. We *poked* the shape for our hi-res cow into memory starting at \$4000.

The Apple typically stores addresses in memory with the bytes reversed, such that \$4000 would be stored as \$00 followed by \$40. *Poke* 232,0 stores the low byte and *poke* 232,64 stores the high byte (remember that hexadecimal \$40 is a decimal 64). We then turn on hi-res graphics (*hgr*). Now we tell Applesoft to print our shape at size 1, meaning the same size at which it was created (*scale* = 1). Next we must tell Applesoft what color to draw our shape in (*hcolor* = 7). Lastly, we actually draw the shape (*draw* 1 at 9,10).

**When Does White = Orange?** According to page 89 of your Applesoft manual our statement (*hcolor* = 7) sets the color of things drawn to white2. However, if you review the last article in this series, you'll recall that white can only occur when two dots in a row are turned on. A shape table definition simply identifies which dots are to be set to the current color and what the high bit of each byte in which a dot is affected should be set to. For instance, as long as our hi-res cow is still on the screen let's try removing it:

```
HCOLOR = 0
DRAW 1 AT 9,10
```

should erase the cow. To draw it in blue rather than orange we enter:

```
HCOLOR = 7
DRAW 1 AT 10,10
```

**Making the Cow Move—Slowly.** To do some animation, enter the following commands. These commands presume you still have a blue hi-res cow on the screen.

```
HCOLOR = 0
DRAW 1 AT 10,10
HCOLOR = 7
DRAW 1 AT 12,10
HCOLOR = 0
DRAW 1 AT 12,10
HCOLOR = 7
DRAW 1 AT 14,10
HCOLOR = 0
DRAW 1 AT 14,10
HCOLOR = 7
DRAW 1 AT 16,10
```

**There's Gotta Be a Better Way.** In case you didn't notice, this form of animation is a bit cumbersome. Did you wonder why the x coordinate was incremented by two each time we drew the cow rather than by 1? The reason is that it had to be done this way in order to stick to a blue cow. Any cow drawn on an odd x coordinate would have been orange.

Now let's try it like this:

```

NEW
10 HGR
20 POKE 232,0
30 POKE 233,64
35 SCALE = 1
40 X=0
45 HCOLOR = 7
50 DRAW 1 AT X,10
60 HCOLOR = 0
70 DRAW 1 AT X,10
80 X=X+2
90 IF X > 255 THEN GOTO 40
100 GOTO 45

```

Now run the program (you'll have to press reset to stop it). If you'd prefer an orange cow, simply *init* x to 1 on line 40 and run the program again. Or, to see a blue and orange cow, change line 80 to read  $X = X + 1$ . The cow appears to be flickering.

A large portion of the time involved in writing any animated program is spent trying to decrease flicker. One way to decrease flicker in this program is to lengthen the time your cow is on the screen in relation to the time it is gone. For instance run the program with a delay loop at line 55:

```
55 (FOR J = 0 TO 40:NEXT J).
```

The longer the delay, the smoother the motion. In an actual game, rather than using a delay loop, this is when you'd do your calculations of where to next move your cow.

**Getting Exclusive.** Let's say you're working on a game that requires your hi-res cow to pass in front of a tree. Think for a moment about what would happen if you did your animation the way we did it earlier.

First you would draw a cow in front of the tree. Then you would change the color to black and try to undraw the cow. Oops! You now have a black cow standing in front of your tree. What you really wanted to have happen was for the background to be restored to what it looked like prior to the drawing of the cow.

Unfortunately, we're not aware of any set of animation routines currently on the market that recalls what was on the screen prior to drawing an object.

The challenge, then, becomes finding an acceptable alternative that allows you to draw and then undraw things regardless of what's already on the screen. A trick of the hardware allows us to do just this—reliably. It's called *exclusive or*.

**A Little Boolean Math.** Sounds scary huh? Don't worry; it's not so bad. Study the chart below:

	1	0
1	0	1
0	1	0

This chart tells us the result of using exclusive or (EOR) on any binary number with another binary number. For instance it says 1 EORed with 1 results in 0. 1 EOR 0 = 1. 0 EOR 1 = 1. And 0 EOR 0 = 0.

You're probably wondering what this has to do with computer graphics. It turns out that this technique allows us to draw our hi-res cow in front of trees, clouds, other cows, and anything else we choose. A simpler way of looking at the table is to notice that if we think of the 0 and 1 on the left of the chart as being dots to be plotted from our shape, and of the 0 and 1 on the top of the chart as dots on the screen, an amazing thing happens. For any 1 dot in our shape, the screen dot is inverted. For any 0 dot, the screen dot is left alone.

Using exclusive or in putting a shape onto the hi-res

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screen causes any dot that would normally be drawn to be inverted instead. Dots that would not normally be affected are left untampered with. It turns out that Apple caught on to this effect and provided us a simple command to exclusive or with. It's called `xdraw`. Let's experiment with the following (presuming you still have your hi-res cow in memory):

```
HGR (press return until you see your cursor again)
HCOLOR = 7
XDRAW 1 AT 9,10
XDRAW 1 AT 9,10
```

You should have seen the cow appear, then disappear. This is because the first `xdraw` caused the dots in your black screen to invert producing the cow. The second `xdraw` also caused inversion, but only of the dots comprising our cow. Of course, inverting an on dot produces an off dot.

Let's see what would happen if our hi-res cow were to stand in front of a cloud.

```
HGR
HCOLOR = 7
FOR X = 0 TO 100:FOR Y = 0 TO 100:HPLLOT X,Y:
NEXT:NEXT
XDRAW 1 AT 9,10
```

Aha! We have a hi-res cow on a white background, just as we expected. A cow half on and off a cloud will appear to be two different colors (try it!). However, most games are set up so this is the exception rather than the rule. In general, if your

cow is running and happens to pass in front of a cloud or tree, the slight color distortion that results is highly preferable to losing your background or your cow.

Now that we have our cow moving, let's put him under the control of a joystick (or paddles if that's what you have).

```
NEW
10 HGR
20 HCOLOR = 7
30 X=PDL(0):Y=PDL(1)
40 IF Y > 140 THEN Y=140 :REM HANDLE OFF BOTTOM OF
    SCREEN
50 XDRAW 1 AT X,Y
60 NX=PDL(0):NY=PDL(1) :REM READING PADDLES
    PROVIDES OUR DELAY LOOP
70 XDRAW 1 AT X,Y
80 X=NX:Y=NY
90 GOTO 40
```

Now run the program.

Two things would greatly improve this program: first, only drawing the shape on even or odd x coordinates (to make the color of our cow consistent); and second, not erasing the cow if its position is unchanged. Experiment with this program. It's a good place to start trying to cure flicker.

**Wrapping Up.** Our next lesson will begin to address *byte-move animation* and how to create byte shapes. This is the technique typically used by professional programmers for high-speed animation. In lessons ahead, we'll look at new techniques for decreasing flicker and discuss such topics as collision detection. SL

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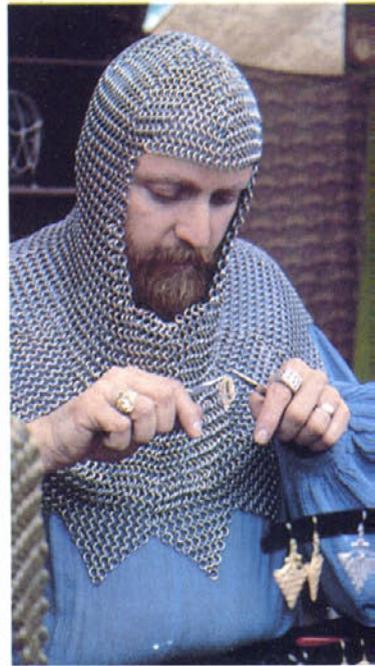
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# All the World's a Game

## A Renaissance of Role Playing

by MELISSA MILICH





"What meanest thou . . . Compewters?" Alys Styx, the fish merchant for the Shire looked puzzled. "I do know what computation is. I have perform'd it in my work. But com. . .pewters? Magic you say! I do think it tis the devil's handiwork."

Good Mistress Brune, housekeeper of Lord Brilly, had never heard of them either. "Could it be an abacus of which thou speakest? You say, Master Shakespeare may use a computah to write his plays?"

Good Mistress Brune put her hands on her wide hips and swung her bum-roll around. "Surprises me little, the trash he puts out."

We've been transported to a sixteenth century English village via the Renaissance Pleasure Faire, a semiannual event in California and easily the biggest role-playing game in the world. The Renaissance Faire was started twenty years ago in the backyard of a teacher who loved history, and this year more than fifteen thousand people a day are expected to join in the pageantry, revelry, and the riotous vulgarity of the Elizabethan Age being re-created the weekends of May 1 through June 6 in Agoura, California.

It's now sponsored by the Living History Centre, an educational and cultural California foundation, with the help of more than three thousand workers, entertainers, and volunteers. To bring the fairgoers successfully back through time 450 years and ensure maximum culture shock, all those involved have dedicated months beforehand to learning the accent, making costumes, and creating characters that would fit in well with the country village the Renaissance Faire depicts; they must also be able to interact and improvise as well as Mistress Brune and Alys Styx—who are in real life Hilary Ayer and Carolyn Schultz.

Visitors can also become totally immersed in the festivities by joining in the Maypole dance, trying to Soak a Bloke or Drench a Wench, cheering for the favored knight in the Tournament of Horses, or partaking (with gusto) of Cornish pasties, roasted fowl, and fine, fat ribs. Count on being accosted by the hawkers and the mongers and the curious peasantry. The only way you might feel out of place at the Renaissance Faire is if you started using twentieth century buzzwords like *computers* to the simple sixteenth century folk. Maybe.

A trumpet fanfare suddenly bursts forth from the marketplace. Fuss, hubbub, general commotion; and a pale-complexioned woman in rich velvet robes strewn with jewels—Queen Elizabeth, no less—rides through the village atop the royal sedan chair carried on the shoulders of six pokerfaced servants.

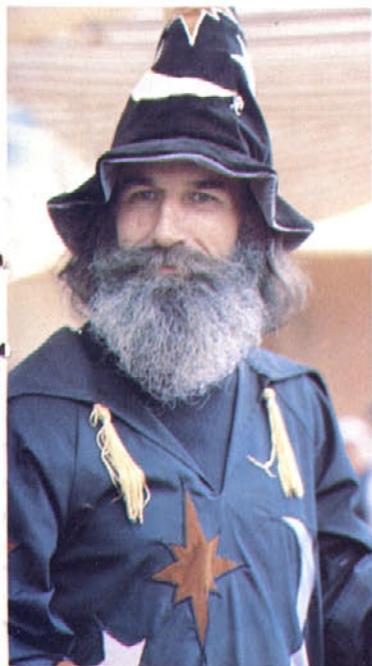
"God save the Queen!! Huzzah! Huzzah!" the crowd cheers jubilantly and her majesty waves regally in reply. This Queen Elizabeth has never heard of Charles and Diana; she keeps court with the likes of Sir Francis Drake, Sir Walter Raleigh, the Earl of Leicester, and William Shakespeare, who are, yes, there among the crowd bowing respectfully.

"Aye, she is a woman as I aspire to be!" chirps a ragged peasant girl pulling the tatters of her dress into a deep curtsy as the parade goes by.

Good Queen Bess. She ended a war with France, placed a bankrupt treasury on solid financial ground, reestablished the Anglican Church, and commanded the finest navy of its time.

During the day at the Renaissance Faire she is a brilliant politician and the darling of her people; at night, when the red wig, pancake makeup, and the jewels come off, Queen Elizabeth I turns into Luisa Puig, a computer operator on a Lexitron 1303 with the Southern California Rapid Transit District.

Anachronistically for certain, the most common profes-



sion among those participating in the fair seems to be some type of work with computers.

"It makes sense," says Puig. "Cobol, Basic. Those are languages. Here at the fair we have to speak another language, too—Elizabethan English. We're used to the challenge."

Puig has reigned over the fair as Queen Elizabeth for the past three years, and even some of her close friends say they "get the chills" as soon as her makeup goes on. Her costume, including the steel corset she is bound into and all the jewels hanging around her neck, weighs about fifty pounds.

Although the positions for royalty and gentry are few and Renaissance Faire actors must work their way up through the ranks to become one of these coveted characters, anyone can volunteer to be one of the peasants in the Renaissance village.

But before you decide to run out to Sears and buy your peasant clothes, be forewarned: newcomers must attend special workshops held each weekend during the month prior to the fair. This means plenty of rehearsals, fulfilling Centre requirements, and, for those of you who thought they were ancient history (at least in your own life), report cards issued during the workshops.

**School Days.** Still, the dropout rate is very low, since this Renaissance curriculum is one of the very best in the twentieth century. Two language courses are required: Elizabethan I, which includes the basic rounds, grammar, and vocabulary of Elizabethan English (this can be taken twice to fill the requirement); and/or Elizabethan II, which will strengthen grammar and help you gain a repertoire of Elizabethan compliments, curses, and bawdy comebacks.

Three other requirements must earn satisfactory grades on the report cards: orientation (offered only in the mornings) informs you as to the ins and outs of functioning as a Renaissance Faire performer as well as giving a good insight into the

village of Chipping-Under-Oakwood and its varied inhabitants; stage and street techniques explains and demonstrates to fair participants such terms as *focus*, *energy*, *upstage*, and *downstage*; and improvisation/encounters demonstrates how to create an improvised dramatic encounter, "using energy, research, and nimble wits."

Courses not required but highly recommended include advanced improvisation and audience encounter. They are designed to get everyone into the swing of the sixteenth century, and teach fair participants how to interact realistically with their fellow Elizabethans as well as with a twentieth cen-



tury audience who might try to stump them with twentieth century questions.

Puig (Queen Elizabeth, remember?), who is a professional actress as well as computer operator, knows exactly how Her Majesty would respond if someone asked her about microcomputers.

"The first thing she would have asked is how much does it cost and what does it do. She was a very executive woman.

"If someone could prove that computers would be much more cost effective for the royal scribes and mathematicians, she would have wanted at least three—two for the palace and one for Lord Burley, the treasurer," according to Puig. "Elizabeth would have done just fine in a corporate job in this century."

Hilary Ayer (Good Mistress Brune), who leads several workshops, says she is as well-versed in the social history of the times as any university professor could hope to be. "I know what these people ate for breakfast, what kind of underwear they wore, and why they went to church. It's important to have this background knowledge to play a character convincingly."

One other area in which newcomers must receive a passing mark on their fair report card is costuming. Whether it's tatters or laces they wear, it must look authentic. Clothes were designed back then for status only and not for bodily comfort. Corsets made of wood and bone were the worst part. Men, take note: they weren't only for women; upper-class males were bound into corsets as soon as they got out of swaddling clothes.

The Renaissance Faire stresses accuracy—as much as can be transported sensibly from twentieth century southern California to the sixteenth century Chipping-Under-Oakwood. "We put all the realism in without any of the bloodshed," says Carroll Adams, who has been involved with the Renaissance Faire for several years.

"People who participate usually are the kind that don't get intimidated or embarrassed too easily."

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their neighbors, Renaissance scholars will tell you, Elizabethans also loved to hurl insults and think up terrible things to call each other. Workshop leaders will teach their students the finer points of insulting, bickering, and out-and-out brawl. And sometimes, as those who have attended many, many fairs remember with relish, the "fighting" among the actors gets so realistic that the audience will forget this game is just a game and actually step in and try to break up the ruckus.

"This whole idea of complete role playing is sometimes a little intimidating," says Tracey Daughenbaugh, a ninth grader who is spending her first year involved in the fair as a village peasant.

"I like being a peasant," she admits. "I think we have a lot more fun. I just hope I don't say something at the wrong time and get slapped by the royalty."

Phyllis Patterson, who created the fair from its very beginnings believes it is much more fun to carry a theme wholly and totally than only to carry it out halfway. More than six thousand people trampled through her backyard during that first fair in 1963—a slight indication that "living history," which puts an emphasis on the lives of individual people, might be a more appealing concept than the usual political history full of dates, battles, and laws.

"History is, after all, just the story of the people who lived before us," she says.

Patterson, whose background includes teaching art, history, and drama, first devised the fair as a background for a children's theater production. In the sixties, the fair evolved into a love celebration for the flower children; as the years passed, it gradually turned into the historical celebration for serious history buffs and role-playing enthusiasts it has become today.

"This is a great way of teaching. It works." Other periods in history could be re-created as well as the sixteenth century, but Patterson's partial to the English Renaissance.

"One woman ruled that entire country for nearly fifty years by herself. Can you imagine Nixon ruling this country for fifty years? Or Carter? No one could have done the job of Elizabeth."

It was the best of times, it was the worst of times. The world was in transition. The Protestant Reformation had split the unity of European Christendom. The word of God was now open to debate and it was acceptable for the mind of man to dwell on material concerns rather than those of the world beyond. Society was in ferment. Life was nasty, brutish, and short. People worked hard and they had to play hard.

The influence of the church forbade most game playing except at specific times of celebration. Then, usually in the spring and before the harvest, celebrations, games, and rituals to drive out the evil spirits and welcome the good ones were practically required.

"This was an extremely differential society," explains Bill Taylor, who plays Sir Francis Bacon at the Renaissance Faire. "If a branch died on a tree, I could probably give you a hundred scientific reasons in this day and age why that happened. But the Elizabethans would have said a witch had touched it."

Most of the games, he says, had a mystical significance attached to them. They were essentially a symbolic appeasement of these spirits.

"In the affairs of men, only the gods and angels have the right to be spectators," says Taylor quoting the real Sir Francis Bacon.

"You gambled because it was almost part of your religion to gamble," Taylor continues. "But you couldn't win too much or people would say you had sold your soul to the devil. Then you would have a whole slough of problems to deal with."

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There are plenty of games to test your mettle at the Renaissance Faire, including one new this year called "Peg-goting the Toad." Although a live frog was used in the sixteenth century, in the Renaissance Faire version of this game, a stuffed frog is placed on a board. The player bangs the board with a mallet, shooting the stuffed frog toward a large pond twenty feet away. Those who land their frog on a lilly pad in the pond win a prize. Losers win a rubber wart which, according to custom, must be worn either on their cheek or nose for the rest of the day.

There are a number of other games and activities, much less risky than having to wear a wart for the rest of the day—slaying a dragon, dunking a monk, and climbing rope ladders.

Equestrians (accomplished ones only, please) can enter the Tournament of Horses where they can try Tilting at Quaintains, a ring-spearing event which was used to train knights for the joust; and Hedge Hog, played with long bats and a large leather ball, much like today's polo.

For more phlegmatic folk, there are skilled craftspeople to watch as they demonstrate the ancient skills of lace making, cloth weaving, and candle making. Live theater is performed throughout the day, and there are Maypole ceremonies and country dances to join. And some people come to the fair just to eat.

"We re-create the best parts of the sixteenth century," notes Patterson. "The town I created has three thousand people in it who are ready to help others in need—whether it's assembling a costume or just getting more people on your side of the rope during a tug-of-war.

"I wouldn't want to be living in that time—I'd miss my washing machine and dishwasher. But I think there's a lot we can learn from the simple ways and pleasures of people back then. Ideally, we need a balance in our life between machines, human contact, and art and literature." **SL**

*The Renaissance Pleasure Faire will be held weekends, May 1 through June 6 (including Memorial Day) at the Paramount Ranch in Agoura, California. Costumes are not required for visitors, but they add to the fun. The disabled/disadvantaged are welcomed to the Renaissance Faire through a "Special Invited Guest" program. A limited number of free admissions and guided tours (one hundred a day) are available through pre-arrangement. Volunteer interpreters are also on hand to "sign" certain shows for the hearing-impaired. General Renaissance Faire information may be obtained by calling (213) 851-7354. The Renaissance Pleasure Faire to celebrate the harvest will be held in northern California this August.*

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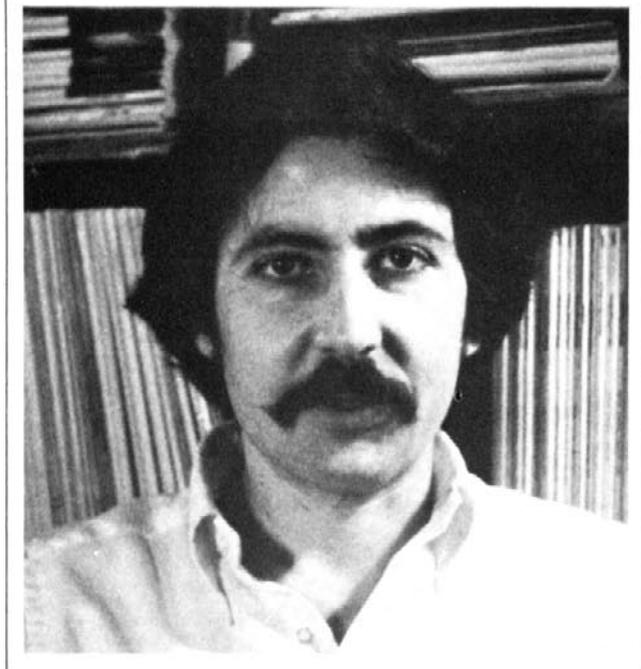
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# New Players

## RIVERBANK SOFTWARE



From "My Dangerous Things," to be sung to the tune of "My Favorite Things," with apologies to Rodgers and Hammerstein.

*Nuclear fallout and mass trepidation,  
Giant reactors that leak radiation,  
Cold war and nuke war and all that they bring,  
These are a few of the dangerous things.*

*When the core melts,  
When the bomb blows,  
Instead of feeling sad,  
I simply start programming my Apple II,  
And then I don't feel so bad.*

Richard Orban is not a politician, radical activist, or peace demonstrator; he's just a good programmer who's trying to educate the public through his computer strategy games. When Orban wrote *Three Mile Island* in 1979, he wasn't for or against the nuclear industry—his main goal was getting a better understanding of how it worked. Playing the game gives people an overview of the system, including the built-in safeguards, Orban says, and allows individuals to come to their own conclusions about nuclear energy.

Another project, *Cold War*, which is still in the works, is giving Orban the opportunity to research the defense industry. *Cold War* will be a computer game simulation, with the player controlling sixty-four espionage satellites. Players will have a simulated view of what the satellites are capable of doing and whether all the warheads are necessary.

Orban started his own company, Riverbank Software, barely a year ago to give himself complete control over his products. He and his wife Jennifer Bodine run the business out of their 960-square-foot home overlooking the Choptank River in Denton, Maryland.

Until *Cold War* hits the market, Riverbank's only product is *Gran Prix*, an arcade game that simulates five hi-res race car

driving circuits in five countries. *Three Mile Island* was written for Muse Software while Orban was still an independent contractor.

Even though *Gran Prix* doesn't exactly fit in the social consciousness-raising genre of *Three Mile Island* and *Cold War*, it has its own hair-raising features. And although it might carry some kind of moral lesson about the hazards of reckless driving as you go crashing into a wall, Orban says he wrote *Gran Prix* merely to bring in capital for his new company.

The income from *Gran Prix* gives Orban freedom to spend the time needed on his special research projects, like *Cold War*. He sees the role of the programmer much in the same role as a rock musician or other artist who has a statement to make.

"Programming is a different type of media, a different way of presenting your viewpoint. I see these simulations as ways of people understanding what's going on in the world."

Orban says he doesn't like to label himself as being against nuclear power but, after writing *Three Mile Island*, he admits he's leaning in that direction. Orban is now curious to see what effect *Cold War* will have on his politics when all the research for the game is completed.

"I want to look at defense in general and see whether it makes sense. I didn't want to bias people with *Three Mile Island*, I just wanted to make them knowledgeable about reactors—and their potential.

"Computers are a way of giving people this knowledge—and power."

Orban earned the bachelor of science degree at MIT in electrical engineering, specializing in artificial intelligence. After he graduated in 1970, he held a variety of positions including one on the faculty of the computer science department at Stanford University. Then with an independent company, Orban's programming was also contracted out to various individuals and companies including NASA. During that time, most of his work was done on mainframes.

He was introduced to an Apple in February of 1979 and had purchased one by April of that year "when I was down to my last penny," he recalls. Riverbank Software was started in May of 1981 when Orban decided he didn't want to struggle any longer as an independent contractor. One thing that rock musicians have that programmers don't, according to Orban, is true creative freedom. Musicians can just sit down at their instrument, flip on a tape recorder, and create.

The process for creating a program is not as interactive, since programming involves considerably more paperwork during the writing stage, Orban explains. Programmers need more tools that would enhance the fluidity of the process and a system that would take care of all the details to allow, says Orban, "stream of consciousness programming."

*Three Mile Island* was an extremely wordy program (130 pages of commands), and Orban had to write a much more powerful assembler to handle the extra length. He has also written a disk operating system and graphics utilities package to handle his special programming needs. At the moment, Orban says he is not pursuing the marketing of these programs, since Riverbank is still too small to handle the customer support that would be needed if these were available on the mass market. But he may consider letting another software distributor handle those programs.

Besides tackling world problems and programmers' problems, Orban also has some other very important things on the agenda for the future. He and Jennifer are expecting their first child this coming August.

"It's been a real nice experience to be able to work out of my home," Orban says. "Best yet, I'll be here to help watch the baby."

## VOYAGER SOFTWARE



The crew of Voyager Software, from left to right; front row—Marcello Belloli, John Cormack, Sean Gilman; back row—Gilman Louie, Jack Rogers, Gregg Omi, Chris Frazier.

Voyager Software was formed in the classic mold of American enterprise.

John Cormack was running QED Systems, a San Francisco programming house for minicomputers, when he bought a TRS-80 model 1 and acquired a taste for micro programming and strategy simulation games.

"The smaller machines were just easier and more enjoyable to use," Cormack remembers, "and as far as going into business for yourself, the prospect of simply buying a machine, sitting down, and programming a game is irresistible."

In January 1981 a friend suggested that Cormack, forty, contact Gilman Louie, twenty-one, who was programming *Battle Trek* for the TRS-80. The two men got together and founded Voyager, bringing in Gregg Omi and Chris Frazier a few months later. They premiered Louie's *Battle Trek* at the West Coast Computer Faire in March of that year. Bob Leff of Softsel also attended the fair and, suitably impressed by what he saw, signed the fledgling company to a one-year exclusive distribution contract.

A small company dedicated to "developing games with more substance and playing time than the arcades," Voyager finds that that adds up to a lot of development time, with long stretches between new releases, and no multiple releases to better the chances for one or two successes in a bunch to make up for the rest. The TRS-80 *Battle Trek* sold no more than four hundred copies, which Cormack attributes to poor packaging and a limited market for TRS-80 logic simulations. The company switched to the Apple market for Louie's programming masterpiece, *Starship Commander*, a minutely detailed galactic war game, but has come up against marketing and promotion problems there as well.

"When you're a small company with one or two products, you tend to get lost with a big distributor," notes Cormack, who allowed his contract with Softsel to lapse May 1. In addition, he feels the Apple game scene has become, to a large extent, dominated by the "big, established companies with more money; it's hard to get recognition."

Cormack is forging ahead with an Atari graphics and sound version of *Battle Trek* and is working with Chris Frazier on two other war simulations for the Atari. Jack Rogers is preparing a game for the IBM Personal Computer for release sometime in the next two months.

Cormack's main hopes for the future of his company, however, are pinned on the Commodore, "a nice little inexpensive machine," for which Voyager's newest programmers, Marcello Belloli (age seventeen) and Sean Gilman are writing the company's first home-arcade game. "It's a new market," says Cormack, "hopefully one easier to break into."

The Commodore has renewed Cormack's original enthusiasm for microcomputer game programming. If the winds blow favorably and enough people spot the little company plowing through the crowded seas, Voyager may find its safe port at last.

SL

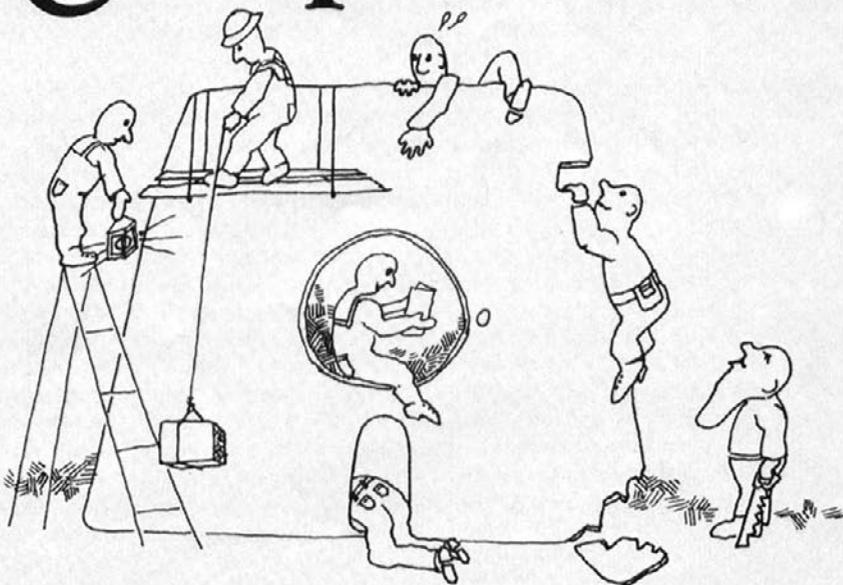
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# Gameline

from page 17

tion of the principles of deductive reasoning. Some of the puzzles are astounding in their ingenuity; watch for a doorless bank vault that you must figure out how to enter. Very few will be able to solve it without assistance or at least extremely careful scrutiny of the clues and of the workings of the bank. Some may even stumble into the vault, but true gratification will be achieved by those who solve the puzzle by themselves. The solution is completely logical, but no one ever said logic was easy. As in *Zork I*, keys to solving many of the puzzles are not in the same room as the puzzles themselves and solutions may require combinations of objects or knowledge gained from your travels. Pay careful attention to possible relationships between the objects and creatures you encounter and the puzzles you will have to solve. Very seldom will brute force prove useful; for the most part you will have to rely on your gray matter to provide the solutions.

*Zork II* is an adventure fit for master adventurers; those of you who are new to adventuring may find the game more of a challenge than you bargained for. Though it is not impossible, with some perseverance, for a novice to master *Zork II*.

A few more technical notes: *Zork II*, like its predecessor, has an extensive vocabulary (some five hundred to six hundred words) and has a superior command parse. You will not find yourself limited to simple one or two word commands; *Zork II* allows you to use complete sentences. The *Zork II* instruction manual is very complete and well written.

As a matter of fact, *Zork* is such a popular game that a *Zork* user group has been formed. They offer various *Zork* paraphernalia, including very handsome maps that enhance playing both games. You can contact the group at Zork Users Group, Box 20933, Milwaukee, WI 53220.

*Zork II* is recommended to any novice or master adventurer who wants a feeling of satisfaction upon completion of a well-thought-out and imaginative adventure. And, once you've finished, you'll be hard put to wait for *Zork III*. [M] Apple II, Apple III (emulation mode), Atari 400 or 800, IBMpc, NEC, 8-inch CPM; 32K, disk. \$39.95 from Infocom, 6 Faneuil Hall Marketplace, Boston MA 02109; (617) 492-1031.

## Computer Foosball

By Keithen.

Whatever happened to foosball, that wonderfully ingenious hockey game once found in local pool halls and barrooms? It became a victim of computer technology. Foosball was yanked from smoky, dimly lit drinking and gaming halls to make room for flashing and beeping video games.

The video generation may have heard rumors of this primitive hockey game in which two or more players turn and slide several parallel sticks that run through holes in the sides of a rectangular box. The object: to swing little men, who are attached to the sticks, so that they knock a small plastic ball around the arena and into the opponent's goal.

For diehard foosballers who may have fallen into despair over the apparent demise of their game, there's good news: Foosball is back. It's not the three-dimensional game, but it's an amazing video simulation. Although the video game differs from the original in some minor aspects, the animation is remarkably accurate.

Video foosball can be played with one, two, or four players. In the 2-player version, each player uses a paddle to maneuver four parallel rows of little men, including a goalie. The rows of men move from side to side, and swing forward,

so that they can kick or block the ball. The little men can also kick backward slightly. The paddle moves the rows of men simultaneously. In the original game, of course, each row moved independent of the others.

The video action starts when one of the players serves the ball. As in the original, the pace often becomes frenetic: The ball zooms, wobbles, and careens around the arena. Until players develop skill and timing, much of the scoring will result from the ball accidentally bouncing into the goals. There will be lots of swinging and missing, with the ball scooting under the little men. After some practice, however, a player will be able to pass the ball, stop the ball in order to line up a shot, and even put spin on a shot, making it difficult for an opponent to block. Original foosballers may have a small edge in shooting and blocking shots.

In the original foosball, it wasn't unusual for one or more of the little men to be missing from a game, having been broken off in previous battles. This would call for some improvising on the part of the players. Of course, the video game precludes that possibility. Maybe one day video foosball will fill the void in barrooms and pool halls left by the original's removal. For now, the return of foosball can at least be appreciated by Apple owners. [M]

Apple II, Apple II Plus, 48K, disk. \$29.95 from Sirius Software, 10364 Rockingham Drive, Sacramento, CA 95827; (916) 366-1195.

## Microwave

By Jay P. Zimmermann and James L. Nitchals.

One of the more innovative variations of the popular eat-the-dots games is *Microwave*, featuring an ostensibly harmless teddy bear that you maneuver through a series of complex mazes. The object: to pick up merchandise, to avoid exploding grenades, and to dodge a gang of bizarre-looking aliens, so that you can proceed to the next maze.

Instead of eating dots, the bear collects hammers, wrenches, calculators (he's the best salvage man in the galaxy) and a variety of other items scattered around the mazes. As the bear runs over the objects, they disappear. The game starts with the fugitive easily outrunning the pursuers. By the second maze, however, the antagonists are traveling equally fast. Maneuvering the bear through *Microwave's* intricate mazes is what really makes the game challenging. As many as four aliens are in pursuit, planting grenades in the path the bear must take to pick up paraphernalia.

Unlike other games of this genre, there are no power dots to enable the fugitive to eat the attackers. But, as you speed the bear through the mazes, you can kill or repel pursuing aliens by dropping a microwave dish, which generates a lethal microwave behind the bear. The bear can take refuge in the microwave, but it soon evaporates and more aliens invade the maze.

You can lose any of the bear's three lives by running over a grenade that's flashing or by bumping into an attacker. Loitering in a microwave can also be fatal. When you've retrieved all the items in a maze, arrows will direct you to the exit. Going through the exit will take you to the next maze, where you'll find more tools and other objects to collect.

The bear can also pick up power packs, which enable you to drop more microwave dishes. Employing your microwaves wisely is the key to staying alive. If you squander your microwaves, you may find yourself defenseless, as the relentless aliens close in, leaving you no exit.

*Microwave* is a challenging game, requiring quick reactions and tricky maneuvering. If you've become bored with the more traditional games of this genre, this may be just what you're looking for. [M]

Apple II, Apple II Plus, Apple III (emulation mode); 48K, disk. \$34.95 from Cavalier Computer, Box 2032, Del Mar, CA 92014; 714-755-8143.

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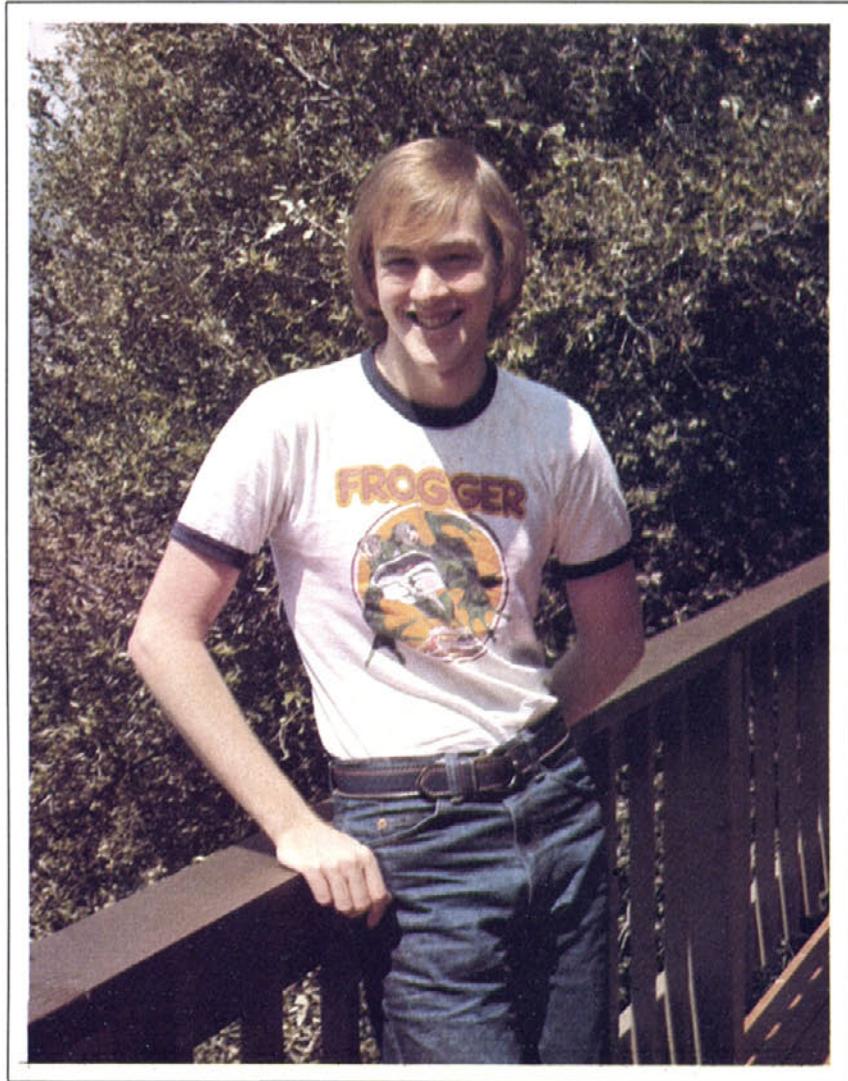
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# John Harris:



## Independently Atarian

It's difficult to determine who was luckier when Ken Williams ran into John Harris at the Sixth Annual West Coast Computer Faire in early April 1981.

Williams and On-Line Systems found an Atari programmer who would write one of their biggest moneymakers to

date—*Jawbreaker*. On the other hand, nineteen-year-old Harris landed a great programming job when he wasn't even looking for one.

"I hadn't gotten any other offers so I went with On-Line. It's been a good thing so far and I'm quite happy."

by DAVID HUNTER

Now twenty, Harris certainly is in the thick of things. A thick forest if nothing else.

Harris resides in Oakhurst, California, which is a little past Coarsegold on Highway 41, just before the southern approach to Yosemite National Park. To the east is Sierra National Forest; Shuteye Peak rises 8,351 feet above sea level within spitting distance of Oakhurst.

**Treasure of the Sierra Nevada.** In these sublime surroundings, Harris works at home programming games. A little more than a year ago, Harris was living unsuspectingly in his home town of San Diego, starting college.

"I attended San Diego State for about a year, planning on a major in electrical engineering. Then I met Ken and quit school to go to work for him."

Before college, in San Diego, Harris spent much of his time during high school "playing with little circuits" and delving into the world of electronics.

Toward the end of high school, Harris was introduced to microcomputers through friends. One friend had an Apple and another had an Atari. Harris tried both and found microcomputers "real interesting."

**Decision Before Dawn.** When it came time to get one of his own, Harris spent a good amount of time shopping around for the right computer.

"Though I almost got a Pet, I chose an Atari because of the full screen editing feature and the fact that it is easier to use than other small computers."

With a strong interest in electronics, Harris set out to become a programmer. He started in Basic and gradually worked up to machine language interrupts and beyond.

Once he knew something about the machine, Harris set about forming a San Diego area Atari user group.

"I formed the group to give people a place to learn how to use the computer. In those days Atari didn't tell you anything. There was no documentation and that made it very tough to learn programming."

It was at a meeting of the user group that Harris introduced his first game, *Battle Warp*. Written totally in Basic, *Battle Warp* was a fun project for Harris and he didn't really expect to make money from it.

"A man came up to me in the meeting and asked if I had any plans for marketing the game. When I said I didn't he offered to market it with his company, West Coast Software. I've lost track of him now; it was only a one-person company with three games."

Harris served as president of the San Diego Atari user group until he left to work at On-Line.

"User groups are usually a pretty local thing. Even so, the San Diego group has now gotten too big in my opinion. I always wanted a small type of thing, fifteen or twenty members, where each person gets individual attention."

With the help of a friend, Harris got a job at Gamma Scientific doing Z-80 machine language programming. Reasonably content, Harris was not really looking for what he found at last year's West Coast Computer Faire.

"The real reason I was in San Francisco was to attend a seminar for learning to program the Atari. The fair just happened to be at the same time.

"I started talking with Ken Williams after coming upon him by chance. He asked me if I knew how to program and I said yes. Then he invited me to come work at On-Line."

**Dots All Folks!** Although *Jawbreaker* was originally Harris's idea, he got a lot of suggestions from various people, particularly John Williams. Harris began writing the game in spring 1981 and it went through several changes before hitting the market in summer.

"The first version I wrote was way too much like *Pac-Man*.

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In those days I didn't know anything about copyright infringements and didn't know I was doing something wrong. Ken Williams knew he couldn't release the game in that version and asked me to change it some.

"A month later I had a newer version that was not quite so much like *Pac-Man*." This new version still ran into problems with Atari, who claims copyright ownership of *Pac-Man*. Atari lost an attempt in court to bring an injunction against distribution of the game, but Harris is still concerned about the whole problem of copyrights and recent developments indicate he isn't the only one.

"Companies certainly have the right to try to protect ideas. It's a difficult situation, because the law only protects graphics."

Midway, the original manufacturer of *Pac-Man*, has now threatened On-Line with legal action if the game remains on the shelf. At press time, no reliable information was available on the possibly sour future of *Jawbreaker*.

**The Original Sin.** Harris would like to get away from taking someone else's idea and changing it to make a different version of the same basic thing.

His next assignment was an original idea of Ken Williams's which Harris started in November 1981. *Mouskattack* was finished early this year for Atari and was promptly translated for the Apple.

Not nearly as successful as *Jawbreaker*, *Mouskattack* is like other games that seem to get lost in the flood. The game market for the Atari and the Apple is now so huge that some pretty good games never quite get the attention they deserve.

Advertising and marketing have a great deal to do with this, but Harris, as an author, has very little input in these areas.

"I prefer to let the people who more or less know what they're doing handle that."

Nonetheless, Harris has a minor complaint about the lag in time that sometimes occurs between the delivery of a finished product and the shipping of that product. A case in point is Harris's version of *Jawbreaker* for Atari cassette, which he delivered ready to go two months before it shipped.

"This was probably because On-Line had never done a cassette product before."

**Coming Soon.** Another quirk in the whole business of marketing a product that mystifies Harris is the practice of advertising something months after it's available. Harris would like to see program and advertising ready at the same time.

Games and game playing are a great deal of Harris's life, but he has hopes of trying other kinds of programming sometime in the future.

"I might try some utility packages for the Atari, particularly a good assembler. There are ones out there that have good points and bad points, but nothing really great.

"Still, I don't think I would enjoy writing utility programs as much as I enjoy programming games. I'm fanatic about it from start to finish."

Harris plans to stick with the Atari for the moment, though this may change in the future.

"The graphics and sound for the Atari are much better than the Apple. It has a lot more capabilities for games.

"The new Commodore is a good machine, though, and I would like to do some games on that computer."

Harris's most pressing task at the moment is to translate the popular arcade game *Frogger* for the Atari. This time, On-Line went to the owner of the copyright, Gremlin/Sega, and legally obtained permission to market *Frogger* for the Apple and Atari.

"The graphics in a game are usually the easiest thing to do. *Frogger's* graphics took me three or four days. It's the content and logic of a game that takes much longer to get right."

**Get a Load of Those Gams.** The Atari version of *Frogger* is just about done and Olaf Lubeck is working on a version for the Apple. Harris generally tries to stay away from translating games from computer to computer, though he can when he has to.

Harris has two other immediate tasks ahead of him at this point. First he is adapting *Jawbreaker*, if all goes well, for the Atari VCS cartridges and then he'll be adapting *Frogger* for the new Commodore.

After that, maybe he'll have the chance to work on an idea for an eight-direction scrolling shoot-'em-up arcade game for the Atari that he's had to keep on the back burner.

What does Harris do for fun and recreation when he is not slaving over a keyboard? He plays games of the noncomputer variety.

"In *Hunt*, you go around with dart guns and shoot each other according to certain rules. I also like war game simulations, though none of the games I play would be good for computers."

**Going with the Flow.** Harris is doing all right for being only twenty years old. He works at his home full-time and plans to keep with games as long as the demand continues.

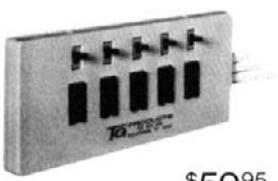
"Working at home is just great. I have a lot of freedom to go anywhere, anytime. This way I can program when the mood strikes me and I have the freedom to flow with what my mind wants to do."

Young and innocent, Harris has a long road ahead of him. So far, he has made all the right moves and there's no reason to doubt that he'll be a programming talent to be reckoned with in the days to come.

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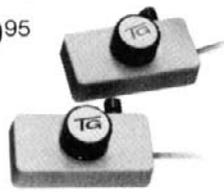
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# Cannonball

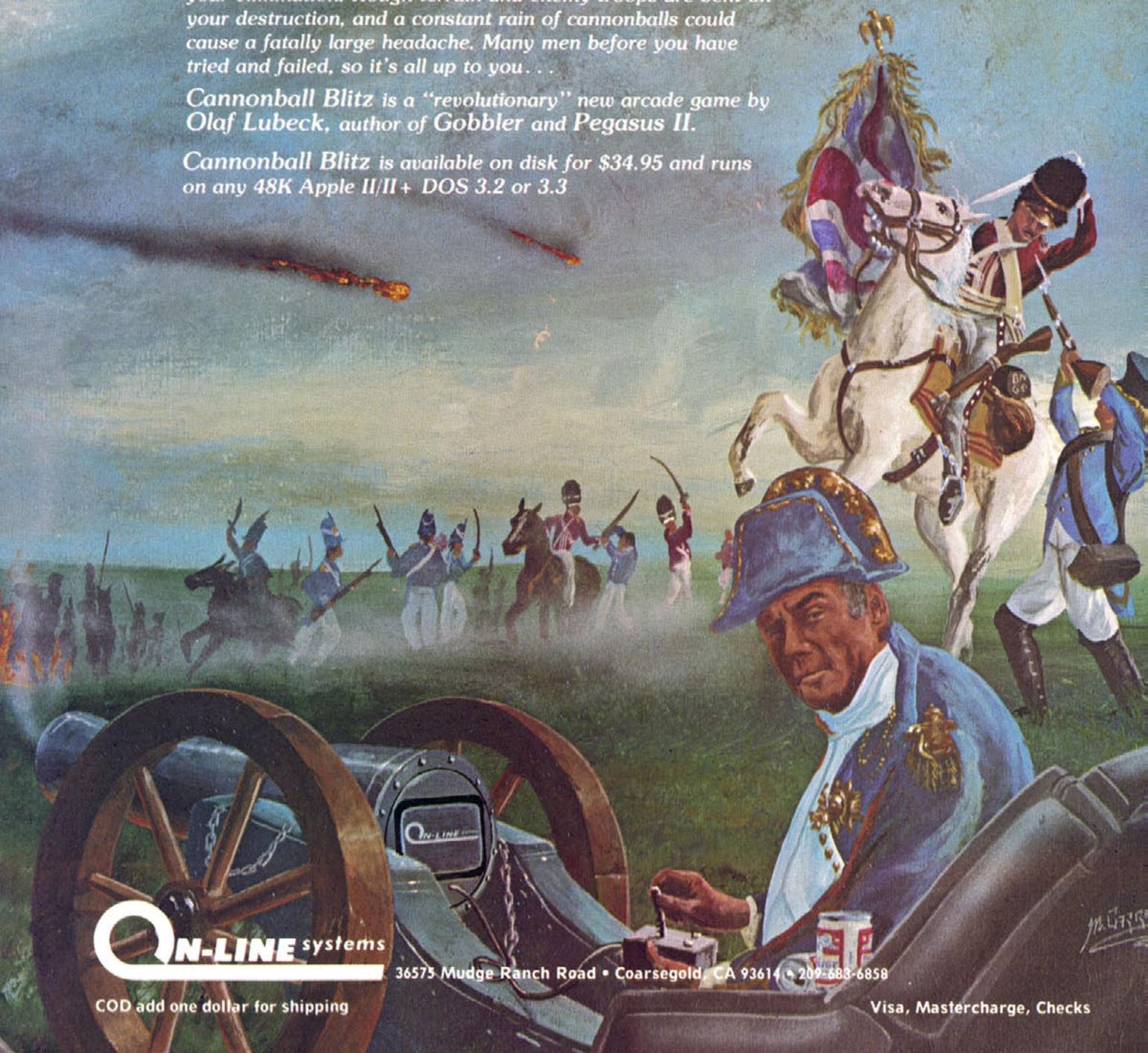


By Olaf Lubeck

Cannonball Castle, fortress of the enemy redcoats, sits high atop Nutcracker Hill. It is your mission, as a rebel soldier, to climb Nutcracker Hill and destroy the castle. Not so fast though—there are many traps and obstacles designed solely for your elimination. Rough terrain and enemy troops are bent on your destruction, and a constant rain of cannonballs could cause a fatally large headache. Many men before you have tried and failed, so it's all up to you. . .

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# Gang Up on Your Computer: A Call for Teamwork in Game Playing

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by PHILLIP GOOD

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"Friendship before competition," say the Chinese.

But you needn't travel to China to find that philosophy at work. The concept of friendship before competition also is embraced by couples (married and unmarried), students of Aikido, fathers and daughters, mothers and sons, and friends.

Yet, despite the immense popularity of team sports—volleyball, basketball, hockey, baseball, slow pitch and fast pitch, few computer games are set up to allow families and friends to work together. In this article, we'll tell you about the few notable exceptions and show you how, occasionally, you can turn a competitive game into a cooperative one.

One of the first and most successful of the cooperative computer games is *Star Thief* for the Apple II from Cavalier Computer (Del Mar, CA). An interesting and unusual arcade game in its own right, *Star Thief* can be played with game paddles or from the keyboard (which makes it playable on an Apple III). Its kaleidoscopic hi-res graphics are best seen on a full-color display.

In *Star Thief*, you play the role of a guard assigned to defend the last remaining powerpods (whatever they are) in space. Star thieves launch attacks from every direction to steal the pods. You fight back by shooting at or ramming the thieves' ships. If you stop a thief as he is escaping with a powerpod, the pod remains where the thief's ship dragged it. The thieves, incidentally, often work cooperatively: they arrive in pairs, one moving purposefully toward you, guns blaz-

ing, while the other makes directly for the pods.

One by one your pods are either stolen or scattered toward the edges of the screen. To protect them, you must patrol a wider and wider territory. Your laser beam lashes out again and again. Though hard pressed, you ram the enemy only as a last resort. The enemy will be destroyed, but your own craft will be disabled as well, leaving the pods unprotected for several seconds.

Suddenly, a thief's laser beam catches you unawares. You disappear from the screen momentarily; by the time you reappear, another powerpod has been borne away. As the last pod vanishes, the screen comes alive with a dozen screaming enemy ships. You continue to shoot and accumulate points until you are destroyed, this time finally and fatally.

Having a friend helps. A friend can deflect an attack on the left or launch a counterattack on the right. Two of you working in harmony can inflict more than twice the number of enemy casualties as one working alone.

**Family Pride.** Any eight-year-old who has beaten her dad in an arcade game knows, somewhere deep inside that her dad was holding back. But when the two of them hold off the aliens together, no second thoughts offset deep family pride. Other fathers confess: "I can't keep up with my sixteen-year-old's reflexes, no way. But with me keeping the thieves off his back while he clears the screen, there's no father/son combination on the block that can beat us."

Call it friendship, call it teamwork, call it a mutual admiration society. There is something special about a cooperative game.

**Three- and Four-Player Games.** Though there are four slots for joysticks on the Atari computer, few games take advantage of all of them. An exception is *Hockey*, a cooperative game from Gamma Software (Los Angeles, CA).

*Hockey* is similar in some ways to *Foosball*, a very popular table-top multiplayer game now available on the Apple, from Sirius Software (Sacramento, CA). Each team has three linesmen plus a goalie. One of the three linesmen is controlled directly by the player, the other two are computer simulations. On defense, all three linesmen are equally devastating. On offense, only the linesman controlled by the player can shoot and score.

*Hockey* has two-, three-, and four-player variations. In the two-player game, each player controls the goalie as well as the linesmen. While the linesmen roam the ice, the goalie is confined to the nets. In a three- or four-player family game, it's natural to put very young players on nets, where a simple back-and-forth motion on the joystick can control the goalie. The game may be handicapped by switching stronger and weaker players in and out of nets, or by pitting two players against one in a three player variation. Just as in real life, teamwork can prevail against the best efforts of even a superstar.

**Pieces of Stars.** An arcade game that already has its own superstars is *Asteroids* from Atari (Sunnyvale, CA). When Atari revised the computer version of its game recently, it included two-, three-, and four-player cooperative options among the more than one hundred twenty-eight game variants. Cooperative *Asteroids* is ideal in any situation where there is a wide range of skills among the participants. In the excitement of exploding asteroids, every team member is left feeling he has made a contribution to the total scoring effort.

In case you were on board the space shuttle or a resident of the Little Prince's asteroid these past four years while *Asteroids* spread across the surface of our planet, here's how the game is played.

You select from options for sequential, competitive, or cooperative play, shields or no shields, immunity from other player's lasers or no immunity, and a closed or continuous universe. Large globular asteroids appear on the screen. You shoot them to gain points, and they fragment into smaller asteroids. You shoot these fragments, and they burst into still smaller pieces. If you collide with an asteroid with your shields off, you die.

From time to time, alien space ships invade the asteroid realm, shooting as they go. You must shoot these ships before they shoot you. There are several options. In the continuous-universe option, laser beams, ships, asteroids, and players that go off one edge of the screen reappear, disconcertingly, at the opposite pole. In the closed-universe option, ships and asteroids bounce back from the edges—the effect is definitely claustrophobic. Other options include hyperspace with random reentry and flip-over, an instant 180-degree change in direction.

In every previous version, each game of *Asteroids* supplies exactly three ships to the human side. Lose them all and the game is over. Still, one-player arcade games have lasted five days or more with participants working in shifts. In the cooperative, home-computer version of *Asteroids*, each player continues to be supplied with ships as long as any one player has one of the original three ships remaining. A cooperative game of *Asteroids* could potentially last indefinitely.

**Against the American Grain.** Surprisingly, cooperative computer games are the exception rather than the rule. Most

computer games pit brother against brother, force against force.

*Super Bustout* from Radio Shack is one of the few games for the TRS 80 color computer that can be played in as little as 4K RAM. Little more than a two-player variant of *Pong*—but who says tennis doubles can't be fun?

James Nitchals, who wrote *Star Thief*, had no intention of breaking fresh ground when he created *Star Thief's* two-person cooperative variant. "It was just easier to set the scores that way," he explained. Despite its attractive visuals, unique features, and cooperative nature, the game has not caught on. Nitchals says, "We're not planning any more cooperative games. The public just is not interested."

Similar sentiments have been expressed by other software developers, two-star generals, and Richard Milhous Nixon. But don't let that stop you. You can make a cooperative game out of almost any multiplayer game where the players are on the game board simultaneously. Here's how: Add scores instead of comparing them. Play cooperatively instead of competitively.

An example is *Ghost Hunter*, the two-person eating game from Arcades Plus (Santa Barbara, CA). Its rules say, "Try to trap your opponent, so that he will be eaten by the ghosts." Instead, try avoiding trapping your partner. Develop a team strategy with the object being to keep each other out of trouble."

Healthy competition—that great American pastime—won't be replaced overnight by cooperative computer gaming. Finding the few games that promote team togetherness is a choice. Adapting available multiplayer games to friendlier formats is the challenge. ■

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Game/Publisher	Score	Player
ABM, Muse	92,500	Peter Sivo, Saratoga, CA
Alien Ambush, Peter Fokos	5,180	Frank McCoy, Poway, CA
Alien Rain, Broderbund	358,810	Pat Gerrard, Carlsbad, CA
Alien Typhoon, Broderbund	629,700	Matthew George, Tallahassee, FL
Apple Panic (Apple), Broderbund	512,860	Chris Horpy, Westminster, CA
Apple Panic (Atari), Broderbund	*32,560	David Dantonio, Citrus Heights, CA
Apple-oids, California Pacific	57,040	David Duplantis, Bloomington, IN
Asteroid Field, Cavalier	623,000	Jeff Feldman, Miami Beach, FL
Asteroids, Atari	318,940	Marc Palmer, Downey, CA
Asteroids, Adventure Int'l.	584,160	Jason Meggs, Rochester, NY
Asteroids, California Pacific	7,852	Jim Potthoff, Wayne, IN
Autobahn, Sirius	1,500 Miles	Jason Greenberg, Highland Park, CA
Beer Run, Sirius	3,001	Ben Chen, San Mateo, CA
Bezman, Bez	*65,757	Al Tommervik, North Hollywood, CA
Blister Ball, Creative Computing	7,164 (2 player)	Kerry Shetline, Neil Radick, Morristown, NJ
Borg, Sirius	8,400	Randi J. Rost, Davis, CA
Bug Attack, Cavalier	140,000	David Porter, Hillsdale, IN
Caverns of Mars, APX	298,650	David Kitaguchi, Wheaton, MD
Ceiling Zero, Turnkey	8,740	Ed Boyton, Eugene, OR
Centipede, Atari	77,802	Dave McGaw, Albany, CA
County Fair, DataMost	*1,836	Nancy McCoy, Poway, CA
Cricketeer, The Software Farm	41,210	Rod Nelsen, Program Author
Crop Duster, Slipshod	14,375	Victor De Grande, Staten Island, NY
Crossfire, On-Line	*563,470	Robert Mann, Hollywood, CA
David's Midnight Magic, Broderbund	*1,158,600	Terry Sullivan, Agoura, CA
Death Star, California Pacific	*1,361	Marc Tanenbaum, San Jose, CA
Dog Fight, Microlab	2,210	Lloyd Stahlbush, Cranston, RI
Eastern Front, Atari	*173	Bill Hoscheit, Saint Charles, IL
Eliminator, Adventure Int'l.	54,450	Tim Sproul, Palatine, IL
Epoch, Sirius	206,040	Sandy Marks, Houston, TX
Falcons, Piccadilly	212,000	Jeff Feldman, Miami Beach, FL
Firebird, Gebelli	244,350	Jack Herrick, Palo Alto, CA
Galactic Chase, Spectrum Computer	34,660	David Kitaguchi, Wheaton, MD
Galactic Empire, Broderbund	3,217	Jeff Parrish, Overland Park, KS

# HIGH SCORES

Next high-score deadline: midnight, June 22.

## Highlines

High scores: many are called; few are chosen. What is the story of the individual efforts—the blood, sweat, and tears that go into the simple procession of names and numbers at left? This behind-the-scenes drama will be the subject of Highlines—the fleeting triumphs, the near-misses, the personal bests. There are a million stories in the big city, and we get all of them.

The topic on everyone's mind since the installation of the asterisk has been verification—how do you get it? There are several ways. Most people try to print out the score from the screen, like **Yung-Chi Chu**, before giving up and simply having a witness verify the fact (in Yung-Chi's case, friend John Cooper attesting to a score of 30,855 on *Outpost*). If the disk is protected, you're not going to be doing any printouts. If it's unprotected, your chances are going to vary from printer to printer. Many can't dump graphics; those that can have varying capabilities and

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Galaxy Gates, Magnasoft	65,050	David Ginsburg, Troy, NY
Galaxy Wars, Broderbund	47,450	Vince Capocci, Canton, OH
Gamma Goblins, Sirius	16,640	Bob Farr, Trenton, NJ
Genetic Drift, Broderbund	94,920	F. Woodrow Harris, Emporia, VA
Ghost Hunter, Arcades Plus	78,860	Steve Tretick, Wheaton, MD
Gobbler, On-Line	*286,965	Jason Meggs, Rochester, NY
Golden Mountain, Broderbund	152,200	Fay Popejoy, Burbank, CA
Gorgon, Sirius	*67,900	Norman Fong, San Francisco, CA
Hadron, Sirius	256,170	Steve Mundy, Ballwin, MO
Head-On, California Pacific	234,580	Steve Cloutier, East Greenwich, RI
Horizon V, Gebelli	46,100	Norman Fong, San Francisco, CA
Intruder Alert, DynaComp	3,215	Roger Christman, Ypsilanti, MI
Jawbreaker (Apple), On-Line	153,580	Mark Besse, Worcester, MA
Jawbreaker (Atari), On-Line	73,220	Mark O'Green, Mesa, AZ
Krazy Shootout, K-Byte	29,890	David Kitaguchi, Wheaton, MD
Match Racers, Gebelli	4,692.3 Miles	Bill Hoscheit, Saint Charles, IL
Meteoroids (Asteroids) in Space, Quality	555,335	Robert Pettit, Pittsburgh, PA
Microwave, Cavalier	12,550	Rick Frey, Newport Beach, CA
Minotaur, Sirius	50,198	John Hanson, Piedmont, CA
Missile Command, Atari	1,002,480	Ed Mixon, Ypsilanti, MI
Missile Defense, On-Line	368,796	Dennis Quinn, Inglewood, CA
Mission Escape, CE Software	*3,161	Steve Allen, Des Moines, IA
Morloc's Tower, Automated Simulations	14,317	Michael Hartwig, Lamoni, IA
Mouskattack (Atari), On-Line	*72,440	A. J. Benway, Westport, CT
Neutrons, Dakin5 (Level-10)	*681,500	Norman Fong, San Francisco, CA
Norad, Southwestern Data	*6,720	Jon David Nitto, Binghamton, NY
Olympic Decathlon, Microsoft	11,145	Rick Frey, Newport Beach, CA
Orbitron, Sirius	*142,000	Norman Fong, San Francisco, CA
Outpost, Sirius	*30,855	Yung-Chi Chu, Flint, MI
Pegasus II, On-Line	76,230	Lindsey Johnson, West Hartford, CT
Phantoms Five, Sirius	42,670	Steve Rothenberg, Mayfield Heights, OH
Photar, Softape	169,140	Norman Fong, San Francisco, CA
Planetoids, Adventure Int'l.	322,460	Jon Beggs, Colorado Springs, CO
Pulsar II, Sirius	55,086	Michael Yang, Williamsville, NY
Raiders of the Lost Ring, Cavalier	52,560	David Cadmus, Peoria, IL
Raster Blaster, BudgeCo	6,834,795	Steve Cloutier, East Greenwich, RI
Red Alert, Broderbund	*82,800	Michael Yang, Parma, OH
Rings of Saturn, Dakin5 (Level-10)	725,724	Dan Minardi, Program Author
Rocket Command, Programma	641,212	Neal Achterhof, San Antonio, TX
Ruski Duck, Gebelli	25,495	Frank McCoy, Poway, CA
Sabotage, On-Line	241,000	Norman Fong, San Francisco, CA
Snack Attack, DataMost	86,431	Steve Cloutier, East Greenwich, RI
Snake Byte, Sirius	16,576	Tom Almroth III, Huntington Beach, CA
Sneakers, Sirius	*253,600 Level 86	Larry Cohen, Shrewsbury, NJ
Space Eggs, Sirius	110,434	Dan Cohen, Aston, PA
Space Quarks, Broderbund	38,400	Eric Sussman, Studio City, CA
Space Warrior, Broderbund	*8,590	Pam Nitto, Binghamton, NY
Star Blazer, Broderbund	44,441	William Tung, Towson, MD
Star Dance, USA	99,990	Randi J. Rost, Davis, CA
Star Thief, Cavalier	*2,638	Dick Nitto, Binghamton, NY
Suicide, Piccadilly	15,200	Jason Greenberg, Highland Park, IL
Super Invader, Creative Computing	15,420 (2 player)	Dan Bernard and Ben Chen, San Mateo, CA
Swashbuckler, DataMost	*42,450	Dick Nitto, Binghamton, NY
Tail Gunner, California Pacific	99,675	Steve Rothenberg, Mayfield Heights, OH
Taxman, Hal Labs	406	Brian Fargo, Newport Beach, CA
Thief, DataMost	*20,189	Charles Campbell, San Jose, CA
Threshold, On-Line	323,100	Andy Benson, Sugarland, TX
Torax, Creative Computing	11,500	Roby Warmington, Laguna Beach, CA
Track Attack, Broderbund	688,200	William Fitzhugh, Manchaca, TX
Tranquility Base, California Pacific	*34,780	D. Archibald, Minneapolis, MN
Tsunami, Creative Computing	*34,780	Buell Hollister IV, Shelbourne, UT
Twerps, Sirius	48,286	Brian C. Donnelly, Ipswich, MA
Wormwall, Sirius	*1,540	Kerry Shetline, Morrystown, NJ
Zero Gravity Pinball, Avant-Garde	12,336	Dick Nitto, Binghamton, NY
	*6,250	Dennis Heaton, Adak Island, AK
	106,860	Don Jones, Eugene, OR
	6,600	

# HIGH SCORES

Next high-score deadline:  
midnight, June 22.

## Highlines

commands, which means you may have to read the manual, which means finding an engineer with some free time. Good luck.

As we say, there are several ways to grab the brass asterisk. The parents of **Ed Whalley** stayed up until eleven o'clock on the night of April 14 last to watch their son rack up 283,500 points in *Gobbler*. Their attempt to print out his feat from the screen was unsuccessful, but their mutual witnessing and obvious concern was sufficient verification of a valiant effort. In stark contrast, **George DeLaMater** managed 40,530 on *Pegasus II*, but his mom, the only other person at home, wasn't interested, so George can only give his word of honor—which is accepted among gentlepersons, but, had his score been a record, still not verification. Parents take heed.

**Adam Lee Jung** reports 75,805 on *Jawbreaker*, but, like too many others, tragically fails to state whether it was Apple or Atari. If it was the latter, Adam had a high score. Don't let this happen to you: always specify. **Douglas Hall's** 5,108 on *Track Attack* surpassed the March issue record but was submitted on April Fool's Day. We're not that dumb, Doug. **Victor De Grande's** remarkable achievement on *Crop Duster* is currently awaiting final verification, upon which pends Victor's award of a special scroll, to be presented at Slipshod's quarterly stockholder's awards ceremony.

The indefatigable **Mike O'Brien** continued to top himself in *Snake Byte*, his equally energetic father Jack videotaping the action for proof positive of his 235,960. His previous high came with maps of twenty-seven levels, perfectly acceptable verification. All such efforts were for naught, however, before the relentless onslaught of the victorious **Larry Cohen**, who also managed to take a perfectly legible and aesthetically pleasing photograph of the screen—what's the secret, Larry?

**Keith Pearson** blew away his kindergarten class with 2,588 on *Beer Run*; he will be of drinking age in eleven years or so. **Steven P. Mundy**, this month's big winner for *Hadron*, notes that he "could have scored more" but just quit because he was "getting tired of playing for two hours." The great ones always make it look effortless. All due congratulations to **Robert Mann** for his *Crossfire* record, beating out our illustrious publisher and game author **Jay Sullivan**.

**Bill Hoscheit's** first-time *Match Racers* high was achieved in seven hours, thirteen minutes, with a dinner break at the three-hour mark, and a break after five and a half hours to dry his hands. Mr. C.C. discovered a nifty way to keep totaling up points in *Genetic Drift* in absolute safety without ever going to the next level. He's afraid he's cheating, however. Nonsense, C.C. Take any loopholes you can find—you deserve them.

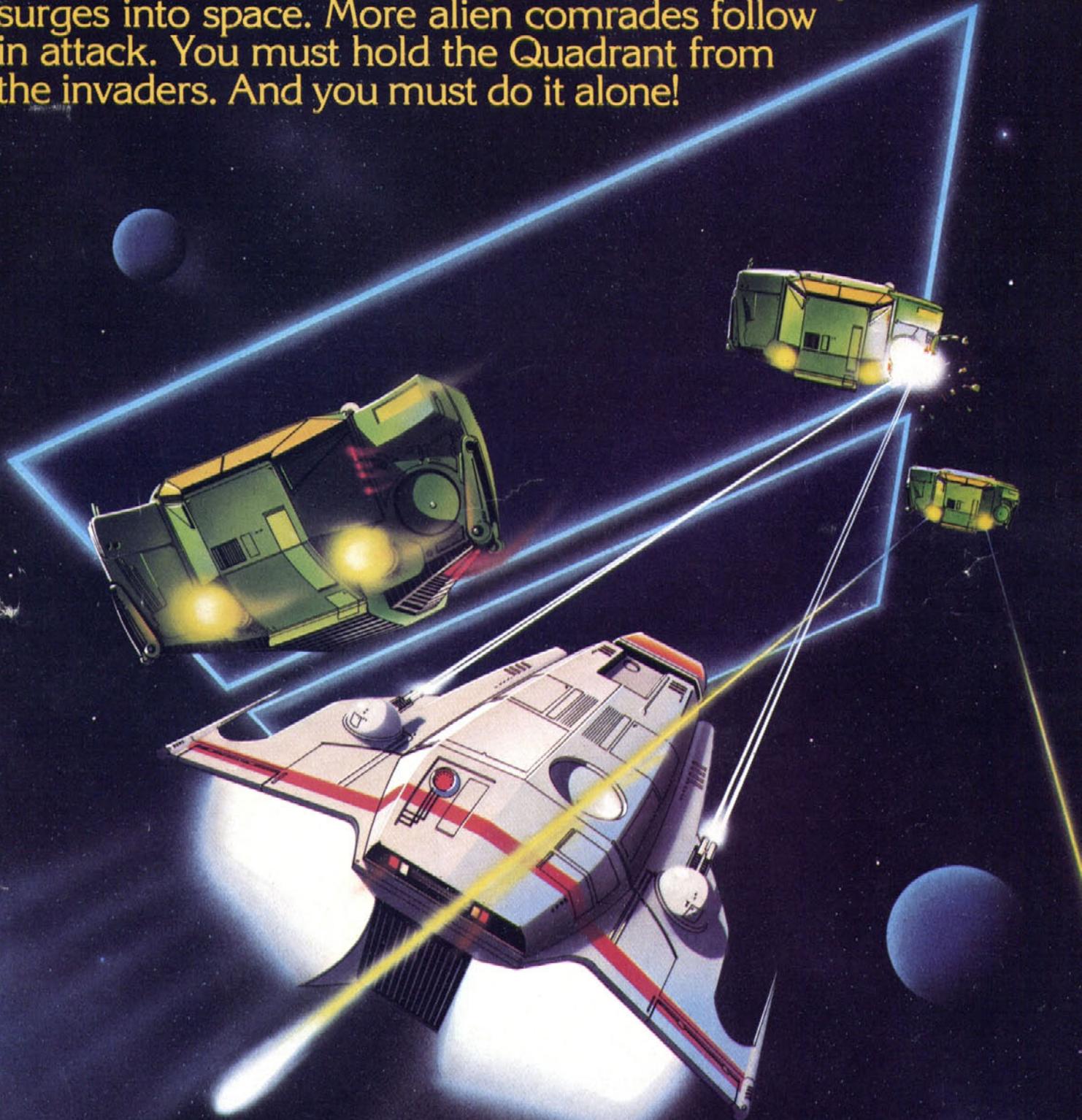
Finally, we received the ultimate, incontestable verification: the man who called us from a phone booth to tell us he scored 18,000 on *Microwave* but hung up before we could get his name. There is true sincerity. Whoever you are, sir, we believe you.

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