ARCADIAN

Vol. 5 No. 6 April 4, 1983

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WHAT'S NEW??? Well, we have only heard of one printed item on the Astrocade front, and that was that ITT was interested in the foreign market (i.e., European production and sales). What this directly means for Astrocade and its problems we don't know yet, but any money coming in is obviously of benefit. On the Nitron side, a month ago, Nitron informed their creditors of an inability to pay off debts, but that a plan was in work to locate capital investment. The local paper subsequently indicated that Nitron was planning to pay their smaller creditors at a 25% discount.

ADD-ON NEWS The manufacturers of this device (disassociated from Astrocade) are leery of making any public predictions as to when it will be available, because there have been so many schedule problems before with the various Bally/Astro releases. However, I can report that the language is up and running, and the interface to the keyboard has been enhanced by the use of a microprocessor just for that function. The 59-key keyboard by Oak, by the way, is quite attractive, with an 11-key keypad to the side, and a ten user-definable keys across the top. The design needed to get the keyboard to mate with the motherboard containing the language and memory, and the outer cabinet is just about finished, so that a Spring production still seems feasible.

TREASURE COVE CARTRIDGE is a new game now available. We received one of the first production items last week just in time to display it at the West Coast Computer Faire. It received many positive remarks from non-Arcade owners in the areas of resolution and character action. Designed by Brett Bilbrey of Spectre Systems, it will operate with up to four players. Your joystick controls the swimming movements of the scuba diver as he attempts to retrieve treasure from the sea bottom, without touching one of the many fish and other fauna swimming by, and making his way back to the surface where his ship is located, all within the air quantity given to him. Successful retrieval of four treasures results in another screen, more treasures, higher scores, and of course, more denizens of the deep, over 20 all told. There are 20 screens to swim through. Brett added a TOURNAMENT LEVEL of play (a technique proposed by Dick Houser some time back) which allows players at one location to compete with others, using the same set of game parameters. Also unique in Brett's design is the lack of a menu - the screen shows a highly detailed underwater view of the sunken treasure ship as soon as the cartridge is plugged in; and the musical background is continuous - unless you want to turn it off. I expect others will also utilize these techniques. You should be able to locate the new cartridge at dealers that handle the Esoterica line. If you can't find it there, we will mail order it from here at the price of $30.ppd (plus $1.92 for sales within California).

EXTENDED MEMORY SYSTEM SUPPORT As you work and play with the Blue Ram and Viper Systems, let us know what you discover and develop for them. We will publish material as it arrives for the general education of all extended memory system owners, and we'll also include tutorials in the ARCADIAN as we have in this issue. Most 'things' will work with either version of the Extended Basic, but we need to identify any lack of equality. We are planning a tutorial that will discuss translations for near-term publication.

SUBROUTINE DICTIONARY We are thinking of a document that will contain subroutines taken from the various game cartridges (in machine code) so that one could utilize one or another of them in a program being developed. A sort of cook-book of techniques. If you have any interest in such a project - to use or to contribute ideas, etc., please contact Don Gladden.

TUTORIAL AUTHOR APPEAL Yes, we are in need of authors to write tutorials on the Basic Astrocade unit. Remember, we are paying at the rate of $25 per page for this material. Again, contact Don Gladden if you can help out, and either of us if you have some subject that you would like to have covered.

PROGRAMS NEEDED too, I may as well get my usual pitch in here. We are always in need of programs for the general benefit of everyone. They don't have to be stupendous, just something of general interest. I need a tape and preferably a listing along with it, in case that there is a problem in loading.

PROGRAM CONTEST UPDATE We have not had a contest yet this year due to a couple of technical difficulties that should be cleared up this month, so that there is a good chance that we'll have a contest next month and then probably one every other month to the end of the year. We provide a $100 prize to the winner - all you have to do is submit a tape, listing, instructions, and a statement that the work is a product of yours.

SCHEDULE This issue should get us pretty well back on the monthly schedule, with issues appearing over the first weekend of the month - more or less. While I have a convention to go to at the end of April, hopefully I'll get the paper into print before I leave so that it will be ready for mailing when I return.

MUNCHER BACKLOG REDUCED TO ZERO As of the date of writing, we have delivered all orders for this very popular game. Reports from the field have been all raves. There were two lemons in the first batch sent out, but we are now screening all cartridges to assure that you don't get "garbage" when it is plugged in. While we have a reasonable supply here now, they won't last forever, and I'm debating the economics of another run. Anyway, those of you with the Muncher have a collector's item, you can be assured.

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TRAPSHOOT

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```
1 GOTO 30
2 CY=39;PRINT " PLAYER #",#0,M,"      SHOTS",#3,K;RETURN
3 LINE X,Y,4;LINE X,Y+5,1;LINE X-12,Y+5,1;LINE X,Y+17,1;LINE X-7,Y+17,1;LINE X+2,Y+23,1
4 LINE X+11,Y+17,1;LINE X+4,Y+17,1;LINE X+16,Y+5,1;LINE X+4,Y+5,1;LINE X+4,Y,1;RETURN
5 LINE X,Y,4;LINE X,Y+3,1;LINE X-4,Y+3,1;LINE X,Y+8,1;LINE X-2,Y+8,1;LINE X+1,Y+12,1
6 LINE X+4,Y+8,1;LINE X+2,Y+8,1;LINE X+6,Y+3,1;LINE X+2,Y+3,1;LINE X+2,Y,1;RETURN
7 BC=91;FC=7;NT=5;FOR N=-60TO 70STEP 7;BOX N,0,3,3,1;NEXT N;FOR N=-70TO 55STEP 5
8 GOSUB 9;GOSUB 11;N=N+3;MU="a";GOSUB 12;GOSUB 11;NEXT N;CLEAR ;RETURN
9 LINE N,0,4;LINE N+3,6,1;LINE N+10,10,1;LINE N+15,9,1;LINE N+20,5,1;LINE N+10,0,1;BOX N+5,4,2,2,1
10 LINE N+20,-5,1;LINE N+15,-9,1;LINE N+10,-10,1;LINE N+3,-6,1;LINE N,0,1;RETURN

11 BOX N+10,0,22,25,2;RETURN
12 LINE N,0,4;LINE N+5,6,1;LINE N+10,8,1;LINE N+15,6,1;LINE N+20,1,1;LINE N+10,0,1;BOX N+5,4,2,2,1
13 LINE N+20,-1,1;LINE N+10,-8,1;LINE N+5,-6,1;LINE N,0,1;RETURN
14 IF M=1B=B+K;D=D+W
15 IF M=2E=E+K;F=F+W
16 IF M=3G=G+K;H=H+W
17 IF M=4I=I+K;J=J+W
18 RETURN
19 IF TR(M)NT=1;MU="_";NT=0;K=K+1;GOSUB 2;GOSUB 21
20 RETURN
21 FOR Q=-34TO 50STEP 4;BOX 0,Q,1,2,1+A;BOX 0,Q-4,1,6,2;GOSUB 22;NEXT Q;RETURN
22 IF N>-3IF N<3IF Q>Y-2A=1;BOX N,Y,8,8,2;W=W+1;GOSUB 24
23 RETURN
24 NT=5;FOR N=1TO 5;MU="4";BC=Nb20;NEXT N;NT=0;BC=7;RETURN
25 CY=15;PRINT "/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\
26 CY=-13;PRINT "\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/\/";RETURN
30 CLEAR ;GOSUB 25;CY=0;INPUT "    NUMBER OF PLAYERS?"L;IF L>4L=4
40 CLEAR ;GOSUB 25;CY=0;INPUT "    NUMBER OF TARGETS?"T;IF T>99T=99
50 CLEAR ;IF RND (5)=3GOSUB 7
60 NT=0;M=1;R=0;K=0;W=0;B=0;E=0;F=0;G=0;H=0;I=0;J=0
70 BC=7;FC=160;X=-31;Y=-26;GOSUB 5;X=-51;Y=-31;GOSUB 5;X=-67;Y=-43;GOSUB 3;X=-36;Y=-44;GOSUB 5
80 X=-18;Y=-38;GOSUB 3;X=21;Y=-26;GOSUB 5;X=6;Y=-32;GOSUB 5;X=65;Y=-29;GOSUB 5;X=37;Y=-37;GOSUB 3;X=57;Y=-42;GOSUB 5
90 GOSUB 2
100 A=0;BOX 0,-40,3,8,1;CY=-39;CX=13;PRINT "PULL
110 IF JX(M)BOX 18,-39,30,11,2;R=R+1;GOTO 140
120 IF R=TbLGOTO 200
130 GOTO 110
140 Y=(RND (5)-2)b10;X=(RND (5)+1)b10;S=RND (4)+1;C=RND (2);IF C=2GOTO 160
150 FOR N=-XTO 70STEP S;GOTO 170
160 FOR N=XTO -70STEP -S
170 BOX N,Y,15,5,2;BOX N,Y,4,4,1+A;GOSUB 19;NEXT N;BOX 70,10,15,50,2;BOX -70,10,15,50,2;GOSUB 14
180 M=M+1;K=0;W=0;IF M>L M=1
190 GOTO 90
200 CLEAR ;FC=200;CY=20;PRINT " PLAYER:  #1  #2  #3  #4
210 PRINT ;PRINT " HITS:",#6,D,#4,F,#4,H,#4,J
220 PRINT ;PRINT " SHOTS:",#5,B,#4,E,#4,G,#4,I
230 PRINT ;PRINT "      USE TR1 TO RUN
240 IF TR(1)GOTO 50
250 GOTO 240
```

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ASCII VALUES

WHAT ARE THEY???
AND USE OF THE 'KP' AND
'TV' FUNCTIONS

IF YOU REMEMBER, WE MENTIONED IN ONE OF OUR PREVIOUS LESSONS THAT OUR COMPUTER ONLY UNDERSTANDS NUMBERS. THEREFORE, SOMEWHERE IN THE SYSTEM SOFTWARE, THERE HAS TO BE A ROUTINE THAT TRANSLATES OR INTERPRETS CERTAIN VALUES INTO THEIR CORRESPONDING LETTERS OR CHARACTERS, OR HE WOULD NOT EVER BE ABLE TO "PRINT" OR DISPLAY THEM. THESE VALUES ARE KNOWN AS "ASCII" VALUES, (AMERICAN STANDARD CODE FOR INFORMATION EXCHANGE), AND ARE PRETTY WELL STANDARD FARE WITH MOST COMPUTERS. WE CAN USE THEM WITH BASIC TOO. READ ON...

KP AND TV

THE "KP" FUNCTION WORKS SOMETHING LIKE "INPUT", EXCEPT THAT IT RETURNS ASCII VALUES INSTEAD OF DIRECT, KEYED IN VALUES. TRY THIS:

```
>10 PRINT KP
>20 RUN
```

RUN THE PROGRAM, THEN HIT THE 'A' KEY. YOU WILL SEE THE VALUE '65' PRINTED. THIS IS THE ASCII VALUE FOR THE LETTER 'A'. YOU CAN USE THIS IF YOU WISH TO FIND THE ASCII VALUE FOR ANY CHARACTER OR COMMAND WORD ON THE KEYPAD, OR YOU CAN REFER TO THE CHART WHICH FOLLOWS THIS LESSON. SIMILAR TO THE "INPUT" COMMAND, WHEN THE COMPUTER SEES A 'KP', HE STOPS EVERYTHING HE'S DOING AND WAITS FOR A KEY TO BE PRESSED. ('GO' IS NOT NEEDED HERE).

THE "TV" FUNCTION IS ALSO USED WITH ASCII VALUES TO DISPLAY THE CHARACTERS.

```
>10 TV=72;TV=69;TV=76;TV=76;TV=79;TV=13
```

WHAT WE DID HERE IS TAKE THE CHARACTERS' ASCII VALUES IN THE WORD, THEN DISPLAYED THEM ONE AT A TIME USING "TV=", THEN ADDED A CARRIAGE RETURN (13) AT THE END. YOU MAY WONDER WHY WE WOULD USE THIS METHOD INSTEAD OF JUST USING THE "PRINT" COMMAND. WELL, THERE ARE MANY USES FOR THIS METHOD, AND WE'LL GET INTO SOME OF THEM IN A LATER TUTORIAL. FOR NOW, TRY THESE EXAMPLES TO GET THE IDEA OF WHAT IS HAPPENING:

```
>10 PRINT "WHAT IS YOUR NAME?
>20 A=KP;TV=A;B=KP;TV=B;C=KP;TV=C;D=KP;TV=D;
TV=13
>30 PRINT "HI THERE ",;TV=A;TV=B;TV=C;TV=D;
PRINT "!!!
```

```
>10 FOR A=32TO 119
>20 TV=A
>30 NEXT A
```

```
>10 PRINT "CHARACTER? ";
>20 K=KP;TV=K;PRINT
>30 PRINT "THE ASCII VALUE IS ",#1,K
>40 RUN
```

ASCII VALUE CHART

GO=13	/=47	@=64	Q=81	x =98
ERASE=31	0=48	A=65	R=82	+ =99
SPACE=32	1=49	B=66	S=83	LIST=104
!=33	2=50	C=67	T=84	CLEAR=105
"=34	3=51	D=68	U=85	RUN=106
#=35	4=52	E=69	V=86	NEXT=107
$=36	5=53	F=70	W=87	LINE=108
%=37	6=54	G=71	X=88	IF=109
&=38	7=55	H=72	Y=89	GOTO=110
'=39	8=56	I=73	Z=90	GOSUB=111
(=40	9=57	J=74	[=91	RETURN=112
)=41	:=58	K=75	\=92	BOX=113
*=42	;=59	L=76	]=93	FOR=114
+=43	<=60	M=77	↑=94	INPUT=115
,=44	==61	N=78	←=95	PRINT=116
-=45	>=62	O=79	↓=96	STEP=117
.=46	?=63	P=80	→=97	RND=118
				TO=119

VALUES 100-103 PRODUCE WEIRD-LOOKING CHARACTERS THAT DON'T REALLY MEAN ANYTHING, BUT CAN BE USED IN A PROGRAM IF YOU WANT. ALL OTHER VALUES UP TO 256 ARE UNRECOGNIZED AND WILL PRODUCE A QUESTION MARK.

TWO-LETTER VARIABLES

IN OUR SECOND LESSON, (VOL. 5 NO. 2), WE DISCUSSED WHAT A "VARIABLE" IS USED FOR. IN OUR EXAMPLES SO FAR, MOST OF THE VARIABLES THAT WE HAVE USED HAVE BEEN "ONE-LETTER" VARIABLES. (A THRU Z). AGAIN, TO REFRESH OUR MEMORY, THESE ARE USED SIMPLY AS LOCATIONS TO STORE AND CHANGE VALUES. "TWO-LETTER" VARIABLES ARE DIFFERENT. EACH TWO-LETTER VARIABLE HAS IT'S OWN SPECIAL FUNCTION. IN OTHER WORDS, WE DO NOT USUALLY 'STORE' A VALUE INSIDE THEM, (ALTHOUGH IT CAN BE DONE UNDER SOME CIRCUMSTANCES), BUT WE 'SET' THEM TO A VALUE NEEDED FOR THEIR SPECIFIC PURPOSE. 'CX' AND 'CY' ARE EXAMPLES OF TWO-LETTER VARIABLES THAT WE HAVE ALREADY USED. HERE IS A LIST OF ALL THE TWO-LETTER VARIABLES USED IN ASTRO BASIC ALONG WITH THEIR FUNCTIONS. (EXCEPT THE 'MUSIC PROCESSOR' VARIABLES WHICH WILL BE DISCUSSED IN A FUTURE ARTICLE).
(NOTE-"DEFAULT VALUE" IS THE VALUE SET TO THE VARIABLE BY THE COMPUTER UPON HITTING 'RESET').

DEFAULT VALUE — VAR.

-77 — CX-(CURSOR 'X' POSITION)
TELLS COMPUTER WHERE TO PLACE CURSOR TO START PRINTING HORIZONTITALLY. (-80 TO 79).

32 — CY-(CURSOR 'Y' POSITION)
TELLS COMPUTER WHERE TO PLACE CURSOR TO START PRINTING VERTICALLY. (-44 TO 43). (SEE TUTORIAL #1-VOL. 5 NO. 1 FOR EXAMPLES OF USE).

2 — NT-(NOTE TIME)
SETS LENGTH OF TIME, (IN SIXTIETHS OF A SECOND), THAT EACH TONE WILL SOUND WHEN "PRINTING" TO THE SCREEN, OR USING THE 'MU' COMMAND. "NT=0" WILL TURN SOUND OFF

TRY THIS:

```
>10 INPUT NT
>20 PRINT "THIS IS NT=",#1,NT
>30 RUN
```

7 BC-(BACKGROUND COLOR)
ALLOWS YOU TO SET THE SCREEN BACKGROUND TO ANY OF 256 COLORS. (0-255).
0 FC-(FOREGROUND COLOR)
ALLOWS YOU TO SET THE SCREEN FOREGROUND TO ANY OF 256 COLORS. (0-255)

```
>10 INPUT BC,FC
>20 RUN
```

0 SM-(SCROLL MODE)
THIS FUNCTION CONTROLS HOW THE SCREEN WILL SCROLL WHILE PRINTING. THERE ARE FIVE DIFFERENT VALUES WE CAN SET IT TO. (0-4). THEY WORK AS FOLLOWS:
SM=0 NORMAL SCROLLING.
SM=1 WILL FILL THE SCREEN, THEN WHEN CY=-40 WILL SUPPRESS SCROLLING, AND CONTINUE PRINTING ON THE LAST LINE. (HOLDS CY AT -40).
SM=2 SIMILAR TO SM=1, EXCEPT CLEARS BOTTOM LINE AFTER IT IS FULL OF TEXT.
SM=3 FILLS SCREEN, THEN CLEARS SCREEN AND FILLS IT AGAIN, ETC.
SM=4 SAME AS SM=3, EXCEPT AFTER SCREEN IS FULL, WAITS FOR YOU TO PRESS ANY KEY, THEN CLEARS SCREEN AND PRINTS THE NEXT "PAGE".

THE BEST WAY TO EXPERIMENT WITH "SM" IS TO ENTER A FAIRLY LONG PROGRAM, THEN 'LIST' IT USING DIFFERENT SM VALUES.

0 RM-(REMAINDER)
THIS VARIABLE HOLDS THE REMAINDER OF THE LAST DIVISION PROBLEM THE COMPUTER PERFORMED. (USEFUL FOR WORKING OUT DECIMAL MATH ROUTINES).
0 XY-(LINE X,Y COORDINATES)
HOLDS X AND Y POSITION NEEDED FOR THE "LINE" COMMAND. (WILL BE COVERED MORE IN A FUTURE TUTORIAL).

THERE ARE ALSO SOME "TWO-LETTER" FUNCTIONS THAT ARE NOT REALLY VARIABLES, BUT "INPUT-OUTPUT" FUNCTIONS. (WE CANNOT 'STORE' A VALUE IN THEM). HERE THEY ARE:
(NOTE-TO 'READ' SOMETHING MEANS TO FIND OUT THE VALUE STORED THERE. (E.G."PRINT BC"). TO "WRITE" MEANS TO SET IT. (E.G. "BC=80").

READ ONLY:
SZ-(SIZE)
HOLDS NUMBER OF BYTES LEFT AVAILABLE FOR OUR BASIC PROGRAM.
PX-(PIXEL)
USED TO DETERMINE WHETHER AN INDIVIDUAL PIXEL IS 'ON' (FC) OR 'OFF' (BC). SEE VOL. 5 PAGE 57.
JX-(JOYSTICK X POSITION)
USED TO READ JOYSTICK LEFT-RIGHT STATUS. IF JOYSTICK #1 IS IN LEFT POSITION, JX(1)=-1 CENTER-JX(1)=0 RIGHT-JX(1)=1.
JY-(JOYSTICK Y POSITION)
USED TO READ JOYSTICK UP-DOWN STATUS. JOYSTICK #2 FORWARD (UP)-JY(2)=1 CENTER-JY(2)=0 BACKWARD (DOWN)-JY(2)=-1

READ ONLY: (CONT.)
TR-(TRIGGER)
USED TO READ TRIGGER STATUS. TRIGGER #1 PULLED: TR(1)=1. NOT PULLED: TR(1)=0.
KN-(KNOB)
USED TO CHECK POSITION OF KNOBS. WILL RETURN A VALUE OF -128 (COUNTER-CLOCKWISE) TO 127 (CLOCKWISE). EXAMPLE: KN(3)=0...KNOB #3 IN CENTER POSITION.
KP-(KEYPAD)
SIMILAR TO THE "INPUT" FUNCTION, EXCEPT RETURNS ASCII VALUE OF WHATEVER CHARACTER IS PRESSED.

WRITE ONLY:
TV-(DISPLAY ON TV)
USED TO DISPLAY CHARACTERS BY USING THEIR ASCII VALUES.
MU-(MUSIC)
IMMEDIATELY PLAYS A NOTE EQUAL TO THE ASCII VALUE IT IS SET TO. (SAME NOTE THAT WOULD SOUND IF YOU PRESSED THE CHARACTER).

HERE IS A SHORT BEGINNING TO A GAME PROGRAM THAT WE WILL BE USING IN OUR NEXT FEW TUTORIALS TO APPLY SOME OF THE THINGS WE HAVE LEARNED. KEY IT IN, AND SAVE IT ON TAPE. IF YOU HAVE ANY SUGGESTIONS ON WHAT TO ADD, OR HOW TO IMPROVE IT, SEND THEM IN!!! WE'LL ALL WRITE THIS ONE TOGETHER. YOU DON'T HAVE TO KNOW HOW TO CHANGE IT, JUST SEND IDEAS ON WHAT TO ADD/CHANGE, ETC. YOU CONTROL THE SMALL DASH (UP AND DOWN) WHILE IT IS MOVING ACROSS THE SCREEN FROM LEFT TO RIGHT. TRY TO HIT AS MANY OF THE BOXES AS YOU CAN USING JY(1). DESCRIPTION OF THE PROGRAM AND WHAT IT IS DOING FOLLOWS.

```
>10 B=100
>20 CLEAR
>30 FOR A=1TO B
>40 BOX RND (150)-75,RND (80)-40,3,3,1
>50 NEXT A
>60 FOR X=-78TO 78
>70 Y=Y+JY(1)
>80 IF PX(X+1,Y)BOX X+2,Y,3,5,2
>90 BOX C,D,2,1,2
>100 BOX X,Y,2,1,1
>110 C=X:D=Y
>120 NEXT X
>130 B=B÷2
>140 GOTO 20
```

LINE #10-INITIALIZES 'B' TO 100, WHICH IS HOW MANY BOXES WE WANT ON THE SCREEN TO START.
LINE #20-CLEARS THE SCREEN.
LINES #30-50-SETS UP A COUNTER LOOP, DRAWS "B" (NUMBER) 3 BY 3 BOXES IN RANDOM POSITIONS ON THE SCREEN. (100 TO START).
LINE #60-STARTS X COORDINATE (FOR OUR MOVING DASH) AT -78. (LEFT SIDE OF SCREEN). WILL CONTINUE TO 78. (RIGHT SIDE OF SCREEN).
LINE #70-SETS Y COORDINATE TO WHATEVER IT WAS PREVIOUSLY PLUS ONE IF JY(1)=1 (FORWARD) OR MINUS ONE IF JY(1)=-1. (PULLED BACK). (ADDING A NEGATIVE ONE IS THE SAME AS SUBTRACTING ONE). NO CHANGE IF JY(1)=0. (CENTER POSITION).

LINE #80-CHECKS TO SEE IF A PIXEL IS "ON", (FC), DIRECTLY IN FRONT OF YOUR DASH. (X+1). IF SO, BOX HAS BEEN HIT, ERASE IT WITH A NUMBER "2", (BC) BOX 3 BY 5. (COVERS ANY OF THREE POSSIBLE 'HIT' POSITIONS).
LINE #90-ERASES THE OLD DASH.
LINE #100-DRAWS THE NEW DASH.
LINE #110-REMEMBERS POSITION OF NEW DASH SO IT CAN BE ERASED NEXT TIME AROUND.
LINE #120-KEEP GOING UNTIL YOU REACH RIGHT SIDE OF SCREEN. (WHEN 'X' IS GREATER THAN(>) 78).
LINES #130-140-DIVIDE 'B' BY TWO, (CUT NO. OF BOXES IN HALF), AND RESTART.

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##

QUESTIONS FROM READERS

HAS ANYONE COME UP WITH AN EXTENSION CORD FOR THE ASTROCADE HAND CONTROLS?

THE "WICO" EXTENSION CORD MADE FOR THE ATARI SYSTEM WILL ALSO WORK PERFECTLY WITH THE ASTROCADE. IT IS A 12 FOOT EXTENSION, AND IS AVAILABLE AT MOST VIDEO STORES OR FROM HOME ARCADE ELECTRONICS IN EL MONTE, CA FOR $9.95 POSTPAID.

WHEN A MACHINE-LANGUAGE PROGRAM/ROUTINE IS USED IN A BASIC PROGRAM, AND NUMBERS ARE POKED IN, (A=20200:GOSUB C, ETC.), WHAT DO THESE NUMBERS MEAN? HOW DO YOU ARRIVE AT THEM?

THIS IS A FREQUENTLY-ASKED QUESTION. UNFORTUNATELY, IT IS NOT AN EASY ONE TO ANSWER. WHAT THE NUMBERS MEAN ARE MACHINE-CODE INSTRUCTIONS AND DATA PUT INTO A FORMAT SO THAT OUR COMPUTER CAN UNDERSTAND THEM. HOW THEY ARE ARRIVED AT IS SOMETHING WE WILL BE COVERING IN A TUTORIAL IN THE VERY NEAR FUTURE, SO BE PATIENT AND BEAR WITH US!!!

WHY WON'T THE ASTRO-BASIC WORK WITH DECIMALS LIKE SO MANY OTHER COMPUTER SYSTEMS WILL?

YOU HAVE TO REMEMBER THAT THE ASTROCADE WAS DESIGNED TO BE A GAME-PLAYING COMPUTER, SO EVERY EFFORT WAS PUT FORTH TO MAKE IT EASY TO PROGRAM GRAPHICS, SOUND EFFECTS, COLORS, ETC. DECIMAL MATH, IN MOST CASES, ACTUALLY MAKES THIS HARDER TO DO, SO INTEGER, (NON-DECIMAL), MATH ROUTINES BECAME THE WAY TO GO WITH OUR BASIC. THOUGH IT MAY SEEM IMPOSSIBLE TO USE DECIMAL MATH WITH OUR COMPUTER, THIS IS NOT THE CASE, FOR EVEN THOUGH HE ONLY TELLS US THE ROUNDED OFF VALUES, HE DOES SAVE ALL REMAINDERS OF DIVISION PROBLEMS, SO THAT DECIMAL MATH ROUTINES CAN BE DONE WITH A BIT OF HEAD-SCRATCHING.

HOW ABOUT SOME ARTICLES/TUTORIALS ON BLUE RAM/VIPER EXTENDED BASIC?

STARTING WITH THIS ISSUE, THAT'S JUST WHAT YOU'LL SEE. WE HAVE NOW HAD ENOUGH INTEREST SHOWN TO INCLUDE AN "EXTENDED BASIC" CORNER IN EACH ARCADIAN.

WHICH ROM DO I HAVE? can be answered by another method recently submitted by Bert Holmes after reading of the problems that Craig Anderson discussed on page 49. Bert's idea is to have the computer display the contents of memory where the words GAME OVER are imbedded in the ROM. The first byte is either at location 3159 or at 3164, and the words take up 9 spaces, so Bert asks the computer to print out its memory contents from 3159 to (3164 + 9) to cover either case, as:

```
10  FOR A= 3159 TO 3172
20  TV = % (A)
30  NEXT A
```

In explanation, Line 10 starts the FOR-NEXT loop at the first location, to end at the last location. Line 20 directs the computer to print the contents of the memory space addressed by Line 10; while Line 30 increments the program by 1 (STEP 1 is implied) and goes back to Line 10 with the new value of A.

What you should see is either:

GAME?OVER?;? ? if you have the 3159 board, or

?? ??GAME?OVER if you have the 3164 board.

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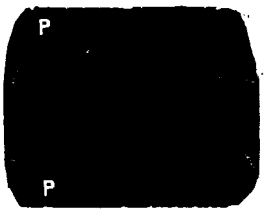

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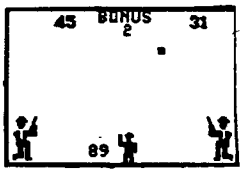

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ARCADIAN

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```
10 @(3)=8;@(7)=-40
20 CLEAR ;PRINT ;PRINT "  NEW DECK";FOR V=0TO 400;NEXT V;R=52;FOR Z=0TO 51;*(Z)=
Z;NEXT Z
30 CLEAR
40 FOR Z=0TO 4STEP 4;FOR Y=ZTO Z+2;@(Y)=0;NEXT Y;NEXT Z
50 J=0;GOSUB H;J=4;GOSUB H;J=0;GOSUB H;J=4;GOSUB H
60 IF @(0)=21GOTO 460
70 IF @(4)=21T=1;GOSUB 210;T=0;GOTO 310
80 Y=JX(P);IF Y=0GOTO 80
90 IF Y=-1GOTO 210
100 J=0;GOSUB H
110 IF @(J)>21GOTO 310
115 IF @(1)=5GOTO 460
120 IF @(J)=21IF @(J+2)=0GOTO 210
130 GOTO 80
210 J=4;A=-76;B=-40;GOSUB 520;S=M;V=N;GOSUB 530;GOSUB 100b(6+S)
212 IF TRETURN
220 IF @(J)>16GOTO 240
230 GOSUB H;GOTO 220
240 IF @(J)>21GOTO 410
250 IF @(0)>@(4)GOTO 410
310 I="D";GOTO 470
410 I=49;GOTO 470
460 I=50
470 CX=-77;CY=0;GOSUB 492
475 IF &(P+15)=0GOTO 475
480 IF R>16GOTO 30
490 GOTO 20
492 IF I="D"PRINT " I WIN";RETURN
494 PRINT " YOU WIN",;IF I=50PRINT " DOUBLE!"
496 RETURN
510 FOR D=A+3TO A+19STEP 4;LINE D,B+32,0;LINE D,B,1;NEXT D
515 FOR E=BTO B+6STEP 2;LINE A,E,0;LINE A+23,E+24,1;NEXT E;RETURN
520 BOX A+12,B+16,28,36,1;BOX A+12,B+16,24,32,2;RETURN
530 CY=B+27;CX=A+5;TV=*(V+56);RETURN
600 D=A+6;E=B+10;GOSUB 680;D=D+12;GOSUB 680;D=D-6;E=E+6;GOSUB 680
610 BOX A+12,B+7,2,8,1;BOX A+12,B+3,6,2,1;RETURN
680 BOX D,E,6,6,1;BOX D,E,10,2,1;BOX D,E,2,10,1;RETURN
700 FOR D=A+11TO A+12;GOSUB 780;NEXT D;RETURN  BOX A+12,B+12,8,9,1;RETURN
780 LINE D,B+20,0;LINE D-8,B+12,1;LINE D,B+4,1;LINE D+8,B+12,1;LINE D,B+20,1;RET
URN
800 D=A+4;FOR F=7TO -7STEP -14;FOR E=B+13TO B+14;LINE D,E,0;LINE D+F,E-7,1;NEXT
E;D=A+19;NEXT F
820 FOR D=A+8TO A+15STEP 7;BOX D,B+18,5,1,1;BOX D,B+19,3,1,1;NEXT D
840 FOR E=B+15TO B+16;LINE A+4,E,0;LINE A+7,E+3,1;NEXT E
850 FOR E=B+18TO B+19;LINE A+16,E,0;LINE A+19,E-3,1;NEXT E
855 BOX A+12,B+17,4,1,1
856 BOX A+12,B+16,2,1,1
860 RETURN
900 D=A+19;FOR F=-7TO 7STEP 14;FOR E=B+9TO B+12;LINE D,E,0;LINE D+F,E+7,1;NEXT E
;D=A+4;NEXT F
910 D=A+12;E=B+10
920 BOX D,E,14,6,1;BOX D,E,12,8,1;BOX D,E,10,10,1;BOX D,E+3,8,6,1;BOX D,B+4,4,3,
3;BOX D,B+5,2,2,1
930 BOX D,B+3,6,2,1;RETURN
```

BLACKJACK

Dick Harris
1424 S.W. Montgomery #104
Portland, OR 97201

Player's cards at top
Joystick → R = Hit
← L = Stand
Dealer takes push
Pays double for Blackjack,
or 5 and under

```
1010 Z=RND (R)-1;C=*(Z);R=R-1;*(Z)=*(R);S=Cc13;V=RM
1020 A=32b@(J+1)-76;B=@(J+3)
1030 GOSUB 520;IF JIF @(5)=0M=S;N=V;GOSUB 510;GOTO 1050
1040 GOSUB 530;GOSUB 100b(6+S)
1050 @(J+1)=@(J+1)+1
1110 IF V=12IF @(J)<11@(J)=@(J)+11;@(J+2)=1;RETURN
1120 IF V=12@(J)=@(J)+1;RETURN
1130 IF V<9@(J)=@(J)+2+V
1140 IF V>8@(J)=@(J)+10
1150 IF @(J)>21IF @(J+2)@(J+2)=0;@(J)=@(J)-10
1160 RETURN
```


USE THE FOLLOWING ROUTINE TO CHECK THE VALUES OF ALL TWO-LETTER VARIABLES IN YOUR PROGRAM AT ANY TIME. CALL IT WITH: "GOTO 30000".

```
30000 CLEAR ;PRINT ;FOR XY=20002TO 20052STEP
      2;CX=-70+((XY>20018)+(XY>20036))*52;CY
      =CY+((XY=20020)+(XY=20038))X72
30010 TV=(XY-20000)÷2+64;PRINT #0,"=",%(XY);
      NEXT XY;CY=-40
```

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TITLE PAGE INSTRUCTIONS

EVER GET READY TO :PRINT A PROGRAM TO TAPE AND WONDER HOW THE "PROS" GET THE TITLE PAGE TO STAY WITHOUT THE ":PRINT" SHOWING ON THE SCREEN WHILE THE PROGRAM LOADS? IT'S REALLY VERY SIMPLE. WHEN YOUR PROGRAM IS READY TO TAPE, KEY IN THE FOLLOWING:
CLEAR ;CY=-40;SM=2 (GO)
THEN YOU CAN KEY IN COMMANDS TO PRINT YOUR TITLE, INSTRUCTIONS, ETC. BY ADDING 'CY=-40' TO THE END OF EACH COMMAND. WHEN YOUR SCREEN LOOKS THE WAY YOU WANT IT, (IGNORE THE BOTTOM LINE...IT WILL BE ERASED), GET YOUR RECORDER MOVING, KEY IN: SM=0;:PRINT AND HIT 'GO'. THE LAST COMMAND WILL DISAPPEAR, THE SCREEN WILL STILL BE THERE, SM WILL BE RESET TO ZERO, AND IT WILL ALL BE ON TAPE. EXAMPLE:

```
CLEAR ;CY=-40;SM=2 (GO)
CY=10;CX=-24;PRINT "CHECKERS";CY=-40 (GO)
CY=0;CX=-33;PRINT "BY JOE BLOW";CY=-40 (GO)
SM=0;:PRINT  (GO WHEN TAPE IS MOVING).
```

HERE IS A PROGRAM YOU CAN USE TO TYPE TITLES, INSTRUCTIONS, ETC. ON YOUR 'TITLE PAGE' AND EACH LINE WILL AUTOMATICALLY BE CENTERED ON THE SCREEN FOR A NICE PROFESSIONAL LOOK. (NOTE: THIS PROGRAM NEEDS 224 BYTES TO FUNCTION AND USES VARIABLES Y THRU Z AND @(0)-@(25) SO IF YOU NEED PRESET VALUES IN ANY OF THESE LOCATIONS FOR YOUR ORIGINAL PROGRAM, BE SURE AND RESET THEM AFTER USING THE ROUTINE.

STEP #1-WITH YOUR PROGRAM IN MEMORY, MAKE SURE SZ>223. IF IT IS SMALLER, TAKE A FEW LINES OUT. (WRITE THEM DOWN FIRST SO YOU CAN ADD THEM AGAIN LATER).
STEP #2-ADD THE 'TITLE' PROGRAM TO YOUR PROGRAM. (BE SURE AND USE THESE LINE NUMBERS).

```
>20000 CLEAR ;SM=2;Y=40;CY=-Y;Z=Z+2
>20001 X=1;W=0
>20002 Y=KP;TY=Y;IF Y=13GOTO Z+3
>20003 IF Y=31TY=32;TY=Y;W=W-1;X=X+3;GOTO Z
>20004 @(W)=Y;X=X-3;W=W+1;GOTO Z
>20005 CX=X;CY=Y;FOR Y=0TO W-1;TY=@(Y);
       NEXT Y;CX=-77;CY=-40;Y=Y-8;GOTO Z-1
```

STEP #3-CHECK SZ AGAIN. YOU SHOULD HAVE AT LEAST 52 BYTES LEFT.
STEP #4-KEY IN: Z=20000;GOTO Z AND THE ROUTINE WILL RUN. NOW, TYPE IN YOUR INSTRUCTIONS, TITLE, ETC., BEING CAREFUL NOT TO EXCEED 26 CHARACTERS BEFORE ENTERING EACH LINE. (GO). 'ERASE' MAY BE USED. THE COMPUTER WILL AUTOMATICALLY CENTER EACH LINE AS IT IS PRINTED ON THE SCREEN.
STEP #5-WHEN YOU ARE DONE, PRESS 'HALT', TAKE LINES 20000-20005 OUT, PUT ANY PROGRAM LINES BACK IN THAT YOU TOOK OUT EARLIER, SET VARIABLES Y-Z AND @(0)-@(25) (IF NECESSARY), THEN DUMP TO TAPE WITH: SM=0;:PRINT

TO SAVE THIS ROUTINE ON TAPE, KEY IT IN ALL BY ITSELF, (NOT ON THE END OF ANOTHER PROGRAM), AND PRINT SZ. IT SHOULD BE EXACTLY 1628. (172 BYTES). IF IT ISN'T, GO BACK AND CHECK FOR MISTAKES. THEN DUMP WITH:
:PRINT %(-24576),86 (ONLY TAKES A FEW SECONDS). THEN TO LOAD IT TO AN EXISTING PROGRAM:
Z=20000;:INPUT %(%(Z)-4);%(Z)=%(Z)+172
THIS WILL ADD THE ROUTINE TO THE END OF YOUR CURRENT PROGRAM IN MEMORY, THEN RESET THE END-OF-PROGRAM COUNTER TO THE PROPER VALUE. MAKE SURE THERE ARE NO LINE NUMBERS ABOVE 19999 IN YOUR ORIGINAL PROGRAM.

****

PAWS...(PAUSE)

ON-BOARD SUBROUTINE #81 (PAWS) IS A NIFTY LITTLE ROUTINE THAT IS VERY EASY TO USE IN A BASIC PROGRAM. MOST PROGRAMS USE A "TIME DELAY" (PAUSE) FOR-NEXT LOOP SOMEWHERE OR OTHER TO LET THE USER VIEW SCORES, READ INSTRUCTIONS OR SOMETHING. WELL, WE CAN DO THE SAME THING WITH THE "PAWS" ROUTINE. AND IT ONLY USES 4 BYTES OF MACHINE CODE, AND 5 BYTES IN YOUR BASIC PROGRAM (IF YOU HAVE A VARIABLE AVAILABLE) TO 'CALL' IT. YOU CAN STORE THE MACHINE CODE ANYWHERE YOU WISH THAT WON'T BE WIPED OUT. (BEGINNING OF THE STACK--20258 IS USUALLY GOOD). HERE IS THE LISTING:

	DEC.	HEX		
%(20258)=	255	FF	RST 38H	SYSSUK
%(20259)=	81	51	DEFB	PAWS
%(20260)=	240	F0	DEFB	4 SEC. DELAY
%(20261)=	201	C9	RET	RETURN

THAT'S ALL THERE IS TO IT!!! THE VALUE AT %(20260) CAN BE CHANGED TO SUIT YOUR NEEDS FROM 0-255 WHERE A VALUE OF 60 GIVES A ONE-SECOND PAUSE, 120 A TWO-SECOND PAUSE, ETC. IF YOU WANT TO CHANGE THIS VALUE INSIDE YOUR BASIC PROGRAM, CHANGE %(20261) TO ZERO AND ADD %(20262)=201. THEN YOU CAN CHANGE BY SIMPLY ENTERING %(20260)=N WITHOUT AFFECTING THE FOLLOWING BYTE. USE "CALL20258" IN YOUR PROGRAM WHENEVER YOU WANT THE PAUSE. IF YOU WANT A LONGER PAUSE THAN 4 1/4 SEC., (MAXIMUM FOR THIS ROUTINE), SIMPLY 'CALL' IT MORE THAN ONCE.

<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>O<>

MICHIGAN ASTROBUGS TAPE #1

TWELVE ORIGINAL PROGRAMS WITH INSTRUCTIONS ON TAPE ALONG WITH MEMBERSHIP IN THE ASTROBUGS, ONLY $9.50 POSTPAID.
(NOT BAD WHEN YOU CONSIDER PRICE IS $10.00 FOR THE TAPE ALONE TO NON-MEMBERS.)

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ARCADIAN

Vol. 5 No. 6

April 4, 1983

"BASICALLY RAMBLING ON!"
BY KEN LILL

A SERIES OF ARTICLES DESIGNED AS AN AID TO "BLUE RAM" EXPANSION UNIT OWNERS. ALTHOUGH MOST PORTIONS OF THIS COLUMN CAN BE APPLIED TO "VIPERSOFT BASIC", SOME MAY HAVE INFORMATION PERTAINING ONLY TO THE "BLUE RAM EXTENDED BASIC".

SAVING A 'SAFE' AREA FOR 'POKES'!

HAVE YOU TRIED 'POKING' IN A LARGE "SNAP", OR A LONG SERIES OF DATA VALUES AT THE END OF YOUR PROGRAM ONLY TO FIND THEM GONE WHEN YOU 'CALLED' THEM UP? THE PROBLEM IS THAT THE ADDRESSES AFTER YOUR PROGRAM ARE LIKE THE '@()' ARRAY. THEY CAN BE CRUSHED AS YOU MODIFY YOUR PROGRAM! THERE ARE SEVERAL WAYS TO AVOID THIS. ONE WAY IS FOR THE OWNERS OF 16 & 32K UNITS TO WRITE THEIR PROGRAMS IN THE "UPPER" OR "LOWER" SECTION, AND STORE THE DATA IN THE OTHER WITH "POKES". TO "POKE" SIMPLY MEANS TO INSERT THE DATA INTO A GIVEN ADDRESS IN RAM.

ANOTHER WAY TO SAVE SMALL QUANTITIES OF DATA OR SMALL "SNAPS" IS TO RESERVE SPACE IN A LINE NUMBER EQUIVILANT TO THE NUMBER OF BYTES NEEDED FOR THAT 'POKE'. AN EASY WAY TO COUNT HOW MANY BYTES YOU ARE RESERVING IS LIKE THIS:

```
>100 A234567890123456789012345678901234 ETC.
```

BY USING A LETTER AS THE FIRST SAVED DIGIT, THE COMPUTER DOES NOT THINK YOU ARE TRYING TO ENTER A LINE NUMBER WITH 37 DIGITS!!! NOW, START WITH 2, AND WORK UP TO THE 0. THIS GIVES YOU 10 BYTES, FOLLOWED BY 10 MORE EACH TIME YOU GO FROM 1 TO 0. SO NOW, ALL YOU HAVE TO DO IS COUNT ZEROES, MULTIPLY BY TEN, THEN ADD THE LAST DIGIT KEYED IN AND YOU HAVE THE TOTAL BYTES RESERVED. SIMPLE!

TO SNAP INTO THIS LINE CAN BE DIRECT NOW, ONLY IF THERE ARE NOT ANY "!0D" VALUES, (13 DECIMAL) IN ANY BYTE. TO CHECK FOR THIS, SET NB=16, SNAP YOUR PICTURE INTO THE @() ARRAY, AND USE THIS DIRECT COMMAND:

```
CT=49;CLEAR ;FOR A=0TO NNNNSTEP 2;
PRINT #5,@(A),;NEXT A
```

WHERE NNNN IS EQUAL TO THE LAST NUMBER USED FOR THE SNAP INFORMATION. CT CAN BE DIFFERENT IF YOU DON'T WANT TO LOSE SOMETHING ALREADY ON THE SCREEN. (IN WHICH CASE DELETE THE "CLEAR" ALSO). IF ANY BYTE SAYS 0D OR SIMPLY D WITH NOTHING PRECEDING IT, YOU CANNOT POKE THIS SNAP INTO A LINE NUMBER. THE COMPUTER SEES THE 13 AS A "GO", AND THEN PLACES THE REST OF THE DATA RIGHT OVER THE NEXT LINE NUMBER AND ITS DATA!! EITHER CHANGE THE SNAPS POSITION OR REDESIGN THE SNAP TO PUT IT INTO A LINE. OTHERWISE IT WILL HAVE TO GO INTO THE @() ARRAY, OR POKE IT INTO ANOTHER SAFE AREA. THE SAME IS TRUE WHEN POKING DATA FOR ANY OTHER REASON.

IF NONE OF THE BYTES HAVE !0D (13) IN THEM, ALL YOU NEED TO DO IS:

```
CLEAR ;SHOW 0,0,0,@(0);SNAP 0,0,W,H,>100
```

(W=WIDTH OF SNAP H=HEIGHT OF SNAP).
NOW THE SNAP CAN BE CALLED LIKE THIS:

```
SHOW X,Y,M,>100
```

WHERE X & Y ARE THE POSITION COORDINATES, M IS THE "SHOW MODE", AND THE ">" FOLLOWED BY THE LINE NUMBER IS THE LOCATION OF THE SNAP.

NOW FOR THE DILEMMA I WAS IN. I HAD USED UP THE LOWER SECTION, MY PROGRAM WAS LONGER THAN 3100 BYTES SO I COULDN'T RE-LOCATE EVERYTHING, AND I HAD A VERY LARGE "SNAP" LEFT TO DO! IF I WAS TO POKE IT INTO AN ADDRESS OR USE THE @() ARRAY, IT WAS GOING TO GET LOST WHILE I FINISHED MY PROGRAM. I DID NOT WANT TO 'RPL' A COUPLE OF THOUSAND BYTES INTO A LINE NUMBER, (THAT WOULD TAKE FOREVER EVEN USING THE "REPEAT" KEY ON THE BLUE RAM KEYBOARD), SO HERE'S HOW I SOLVED THE PROBLEM: FIRST I MOVED THE "END OF PROGRAM AREA" VECTOR. (NOT THE SAME AS "END OF PROGRAM COUNTER) THIS IS NORMALLY SET TO !6C1E WHEN IN THE '4K' AREA. IT'S ADDRESS IS %(!6FFE). FOR 16 AND 32K UNITS THIS IS SET TO THE VALUES !A072 OR !E072, RESPECTIVLY DURING YOUR "INSTALL" PROGRAM. THIS VECTOR IS WHERE YOU TELL THE BASIC WHERE THE END OF ALLOTED SPACE FOR YOUR PROGRAM SHOULD FALL. ANY DATA STORED AFTER %(!6FFE) IS NOT AFFECTED BY PROGRAM LENGTH, AS IT IS NOT IN THE PROGRAM AREA ALLOTED. ALSO, ANYTHING PRIOR TO THE "START OF PROGRAM" VECTOR, (%(!6FFC)), IS NOT AFFECTED EITHER. FOR NOW WE'LL WORK WITH %(!6FFE). I CHANGED %(!6FFE) TO !8FFE WHICH IS ONE "WORD" (TWO BYTES) BEFORE MY STARTING ADDRESS USED. (!9000). REMEMBER TO STAY AT LEAST TWO BYTES (1 WORD) AWAY FROM THE STARTING ADDRESS! NEXT, I CHANGED MY FIRST LINE IN MY PROGRAM TO SAY: %(!6FFE)=!8FFE; ETC. THIS LETS ME CHANGE THE PROGRAM AROUND EVERY TIME I INPUT IT FROM TAPE. NOW COMES THE TRICKY PART! FOR SAVING.

FIRST I ENTER: %(!6FFE)=!A072 (FOR 16K), THEN HIT 'GO'. THEN AND ONLY THEN COULD I "GOTO 25000" AND LOAD THIS ON TAPE! THIS LETS THE DATA STORED FROM !9000 ON TO BE INCLUDED AS PART OF THE PROGRAM AREA, SO THAT THE FORMULA USING (NN-SZ)÷2 INCLUDED IN YOUR DUMP ROUTINE AT LINE #25000 WILL BE DUMPED WITH THE REST OF THE PROGRAM MATERIAL I KNOW THIS MAY SOUND CONFUSING, BUT IT DOES WORK. ONE NOTE OF CAUTION: DON'T PLACE THE COMMAND %(!6FFE)=!A072 (OR !E072) INTO LINE 25000, AS THIS DOESN'T ALWAYS WORK TO SAVE !9000 AND ABOVE. I'M NOT EXACTLY SURE WHY, BUT I HAVE NOTED A COMPLETE WIPE-OUT OF ALL DATA FROM !9000 ON!

WHEN IN DOUBT SET %(!6FFE) TO YOUR MAX NUMBER AND RE-SHOW %(!9000) BEFORE SAYING "GOTO 25000". CHANCES ARE IT IS STILL THERE AND YOU WILL HAVE NO PROBLEM GETTING LINE 25000 TO WORK.

KEN LILL
6608 S. CAMPBELL
CHICAGO, ILL 60629

WHAT WOULD YOU LIKE TO SEE COVERED IN THE "EXTENDED BASIC CORNER?" DROP US A LETTER AND LET US KNOW.

```
 5 CLEAR ;&(9)=-1;N=3;S=0;L=3;P=7;R=1
 7 I=250;GOSUB 700
10 GOSUB 200;BOX 0,-4,160,80,2;GOSUB 1000;T=26;U=5
50 GOSUB 250;M=N
80 X=(RND (50)-25)b2;Y=(RND (10))b2;BOX X,Y,10,5,3
90 U=U-1;IF U<1U=4;T=T-2;IF T=8GOSUB 3500
95 IF T=0GOTO 4000
100 E=0;F=0;IF TR(1)GOTO 300
105 J=JX(1)b3;K=JY(1)b2;IF ABS(X+J)>70J=0
120 IF K+Y>22K=0
130 IF K+Y<-24K=0
140 BOX X,Y,10,5,3;X=X+J;Y=Y+K;BOX X,Y,10,5,3
150 IF RND (9)>PGOSUB 400
160 IF FGOTO 2000
170 IF M=0GOTO 5000
190 GOTO 90
200 VA=9;VB=9;FOR A=176TO 20STEP -2;&(10)=A;TA=A;TB=A+1;NEXT A;`;GOTO 700
250 VA=9;VB=9;FOR A=20TO 176STEP 2;&(10)=A;TA=A;TB=A+1;NEXT A;`;RETURN
300 VA=9;TA=200;LINE X,Y,4;G=JX(1)b20;LINE X+G,-38,3
310 FOR A=1TO N
320 IF (X+G)*(A)-3)b(X+G<*(A)+3)GOSUB 500
325 NEXT A
330 IF E=1 E=0;GOTO 390
380 LINE X,Y,4;LINE X+G,-38,3
390 `;GOTO 105
400 IF M=0RETURN
401 IF M=1V=Q;GOTO 405
403 V=*(RND (N));IF V=-99RETURN
405 VA=9;TA=33;VB=9;TB=34;W=-32
410 LINE V,W,4;J=V+(RND (3)-2)b20;LINE J,Y,3
420 IF (J>X-5)b(J<X+5)F=1;RETURN
480 LINE V,W,4;LINE J,Y,3;`;RETURN
500 FOR Z=1TO 13STEP 2;TA=TA+9;BOX *(A),-38,Z,Z,3;NEXT Z
520 IF F=0LINE X,Y,4;LINE X+G,-38,3
530 BOX *(A),-38,14,13,2;`;M=M-1;S=S+R;GOSUB 700
550 *(A)=-99;IF M=1GOSUB 900
590 A=N+1;E=1;`;RETURN
700 CY=39;CX=-63;PRINT "SCORE:",#5,S,"0",
710 PRINT "  LIVES:",#2,L,
720 IF S>=I I=I+250;GOTO 800
730 BC=125;RETURN
800 L=L+1;`;VA=15;GOSUB 700
810 FOR C=1TO 99;TA=RND (99);&(9)=50;&(9)=-1;NEXT C;`;RETURN
900 FOR Z=1TO N;IF *(Z)#-99Q=*(Z)
910 NEXT Z
920 FOR Z=1TO N;*(Z)=Q;NEXT Z;RETURN
1000 GOSUB 10000;B=1
1005 FOR A=-50TO 50STEP Z
1010 BOX A,-40,5,8,1;BOX A,-38,1,11,1
1090 *(B)=A;B=B+1;NEXT A;RETURN
2000 BOX X,Y,10,5,3;F=0;VA=9;VB=9;TA=9;TB=8
2010 FOR A=Y-2TO -40STEP -2;BOX X,A,10,5,3;BOX X,A,10,5,3
2020 X=X+JX(1)b2;BC=RND (256);TA=TA+1;TB=TB+1;NEXT A
2025 FOR A=1TO N;IF X>*(A)-4IF X<*(A)+4F=1;GOSUB 500
2026 NEXT A
```

LAZER BLAZER

By ROBERT ROSENHOUSE
Box 702
Plainfield, NJ 07061-0702

Lazer Blazer is a game of skill. The object is to destroy each of the lazer outposts before being hit yourself. The game uses joystick one. To move your spaceship, move the joystick in that direction. To fire straight down, pull the trigger. To fire at an angle, pull the trigger AND move the joystick at the same time. The first round consists of three bases. When you destroy all of them, you will recieve bonus points, and will go on to the next round. If you take too long to complete a round, you will hear a warning sound. After the warning sound, you will only have a few seconds with which to hit the remaining base(s). Each game consists of three turns, with a bonus turn awarded at each interval of 2,500 points.

The graphics in this game are simple 'BOX' graphics. A version of this game complete with machine language graphics is available from SUPER SOFTWARE for only $6.00.

GOOD LUCK!!!

```
2030 VB=0;NM=1;NV=200;CY=30;CX=-27;PRINT ' GOTCHA!!
2040 FOR A=1TO 50;TA=RND (200);BC=RND (256);NEXT A
2100 `;L=L-1;GOSUB 700;IF L<1GOTO 2900
2110 IF M=0GOTO 5005
2120 GOTO 10
2900 CY=0;CX=-24;PRINT 'GAME OVER
3000 IF &(23)RUN
3010 GOTO 3000
3500 `;FOR U=1TO 3;VA=15;TA=50;FOR O=1TO 50;NEXT O;`;NEXT U
3510 BC=103;RETURN
4000 FOR Z=1TO N;IF *(Z)=-99GOTO 4090
4010 VA=9;TA=33;VB=9;TB=34;LINE *(Z),-32,4;LINE X,Y,3
4020 `
4090 NEXT Z;GOTO 2000
5000 CY=24;CX=-30;PRINT 'BONUS:',#3,T,'0!
5003 S=S+T;GOSUB 700
5005 R=R+1;IF R>5R=5
5010 N=N+1;IF N>10N=10
5020 IF N>5P=6
5030 IF N>8P=4
5080 GOTO 10
10000 Z=100c(N-1);RETURN
```

Hit GO to play again

SUPER SOFTWARE, BOX 702, PLAINFIELD, NJ 07061-0702

NEW PROGRAMS FOR YOUR ASTROCADE!

Tape 21 - Cash-N-Carry- This is the fastest chase game yet! You are a smart consumer trying to make ends meet. You earn your money, and wait for the bank to open. The real challenge comes when 'Mr. Inflation' starts to go after your money. Run to the bank, the door is open! Only $12.00

Tape 22 - Circuit- Finally, a maze game with brains! In some other maze games, you know how the predator gets 'stuck' in corners. SUPER SOFTWARE brings you the most intellegent maze game to date. You are an electron winding your way through a printed circuit board. You are being chased by sparks, which have the ability to jump. Can you evade the sparks and make a complete trip around the board? Only $12.00 - Shocking!

SUPER SOFTWARE Announces Software For The Blue Ram!

Tape BR 1 - Lazer Blazer- With the added memory of the Blue Ram, SUPER SOFTWARE has created a really SUPER version of the game published in the Arcadian. Among the other features included is a docking sequence. The lazer bases even move. At last, true animation in BASIC. ONLY $18.00 - It's a Blast!

Tape BR 2 - Cone-Man- You are an empty ice cream cone. Scoops of ice cream are falling fast. Catch them in the cone for points. Miss, and 'Pink-man' appears to gobble the fallen scoop. Build a milk shake for bonus points. This is one game that cannot be licked! Only $18.00!

PLEASE WRITE FOR OUR FREE CATALOG!

104

The ARCADIAN

Robert Fabris, diver
3626 Morrie Drive
San Jose, CA 95127-9990

The SOURCE TCD 959