



PROGRAMMERS NOTES

These programs have all been written with the idea that the user should be able to change and customize them but should not be required to do so. Therefore, they all run well as written but all come with complete documentation so that you can easily change them. You will get a listing with each program and wherever unusual constructs have been used, you will get an explanation of how they work. When you tire of the original program, you can add a target, change the scoring, change the display, speed it up, make it harder or easier, or even use it as a subroutine in a new program of your own.

## PUT A LITTLE LIFE IN YOUR SYSTEM

There are a lot of LIFE games around but most of them require at least 8K of RAM and most of them scroll the screen to show the next generation. This one will run in 4K and POKEs the new generation up so that you can see the change.

```
100DIMA(705):FORX=1TO8:READM(X):NEXT:C=53504      C=starting point of board
110DATA63,64,65,1,-1,-63,-64,-65
REM for C1, Superboard, and 440 DATA31,32,33,1,=1,-31,-32,-33
310INPUTA$:IFA$<>"DONE"THEN310                  INPUT starting pattern of *s
400FORX=1TO704:IFPEEK(C+X)=42THENGOSUB2000      Find the *s
410NEXT:FORX=1TO704:IFA(X)=3THENPOKEX+C,42     POKE up new *s
420IFA(X)<2ORA(X)>3THENPOKEX+C,32              Blank the dead spots
430A(X)=0:NEXT:GOTO400                          Reset the array. Start next scan
2000FORY=1TO4:IFX<639THENA(X+M(Y))=A(X+M(Y))+1  Add neighbor count to squares-if
2010NEXT:FORY=5TO8:IFX>65THENA(X+M(Y))=       it doesnt take you out of array
A(X+M(Y))+1:
2050NEXT:RETURN
```

To use this program, input any pattern of \*s. To have a blank line input any character. The program will ignore anything but an \*. The array only covers the top half of the screen on a C2 so the array will have to be centered there with inputs. It covers the entire visible screen on a C1 or 440 so it can be set anywhere on those systems. Type in "DONE" when you want to start.

## A LITTLE MORE LIFE?

If you have 8K and want to fill the screen on a C2, you can do so and add a few frills in the process.

You will need lines 110,420,430,2000,2010, and 2050 from the 4K program. Add-

```
100DIMA(1408):FORX=1TO8:READM(X):NEXT:C=53504   Set bigger array and set X as
:X=1                                             counter. C is edge of display area
300INPUTA$(X):IFA$(X)<"DONE"THENX=X+1:GOTO300   DIMA$ if you want more than 10 lines
310FORY=1TO15:?:NEXT:FORY=1TOX-1:?:A$(Y):NEXT  Print pattern on screen
320FORY=1TO15-(X/2):?:NEXT                     Center the pattern
340FORX=1TO192:POKEX+C+1407,161:POKEC-X,161:   Draw a border
NEXT
350FORX=65TO1407:IFPEEK(C+X)=42THENL=X:GOTO    Lines 350-380 find the edge of the
370                                             array. Searching just that area
360NEXT:IFL<1THENL=1                           speeds up the program.
370FORX=1442TOLSTEP-1:IFPEEK(C+X)=42THENU=X:
GOTO390
380NEXT:IFU>1407THENU=1407
390X=INT(G/10):POKE55005,X+48:POKE55006,G-     POKE up generation count
(10*X)+48
400FORX=LTOU:IFPEEK(C+X)=42THENGOSUB2000      Same as 4K but limited to size of
410NEXT:FORX=LTOU:IFA(X)=3THENPOKEX+C,42     display
2020IFX>U-65THENU=X+65:IFU>1408THENU=1408   Update size of display
2030IFX<L+65THENL=X-65:IFL<1THENL=1
```

This program could be changed to fit the 600 board (C1 and Superboard) by changing the DATA line, changing C to 53305, and changing the number 1407 to 1000 everywhere it appears. However, the 4K version runs well on the 600 so I doubt that it would be worth the bother to type in the longer program.

### CHESS FOR OSI

This one offers a full graphics display (We even have a version for systems without graphics chips) and three levels of play. As set up, it requires a video system and it is one of the few programs we sell that is not in BASIC, so specify your system carefully when ordering.

CHESS \$19.95      **\*\*NOTE\*\*** As CHESS did not originate here, we are unable to offer it as part of any package or library.

EUREKA!!!!!!      WE GOT IT!!!!!!      THE ULTIMATE - BATTLEGAME!!!

### TEN TANK BLITZ

This is a video based board type game for people who like games like Risk and Blitzkrieg, but who want real time action and who do not want to have to move a hundred or so pieces every turn. In this game, each side maneuvers and fights five tanks across a battlefield that changes every game. There are eight types of battlefields built in and the program is designed to easily accept changes in kill and win conditions. It runs in real time, offers fairly complex strategy and runs in 4K with 14 bytes left over.

TEN TANK BLITZ \$9.95

### STARFIGHTER

This is one of our best games and it will run on any video based OSI system. It is a real time space war game. You pilot a cruiser on a mission where you will face up to ten alien vessels. You have a variety of weapons with different characteristics.

STARFIGHTER features a full visual display of the alien (even if you have an alphabetic only system) and working instrumentation. Your speed, range, weapons status and damage status are displayed continuously. As with all of our games, it is written in BASIC so that you can make changes to fit your own tastes. When you get so that you can beat the basic game, a one line change will increase the difficulty level.

Due to the complexity of the display, it comes in three different versions.

STARFIGHTER 540      (C2-4P and other 540 video board systems)  
STARFIGHTER 600      (C1 and Superboard)  
STARFIGHTER Alphabetics (540 only)      \$5.95

### SEAWOLFE

Move over Arcades - Here we come!! This SEAWOLFE game will run on any polled keyboard OSI and features multiple torpedoes, floating mines, exploding ships and lots of fun. It does require a graphics chip.

SEAWOLFE      \$5.95

### BREAKTHRU

A fast pinball-like game with quick action and a lot of scoring possibilities. It combines the best of PONG and PINBALL. It comes with two different skill levels programmed in (you can add more), and an option for adding bumpers wherever you want them. It requires a graphics chip as written but can easily be modified to run on an alphabetic system. It comes ready to play with either keyboard controls or joystick.

BREAKTHRU \$5.95

### BOMBER

I just rewrote this and it came out great. It includes dogfights with oncoming aircraft and bombing of moving targets that come in ever changing patterns. There is also a simpler version for alphabetic only systems.

BOMBER G (Graphics) \$5.95  
BOMBER A (Alphabetic)

### CONCENTRATION

This one will run on any video based system - but it is the most fun with a graphics chip. The computer will hide symbols behind doors in a 6x6 grid. Match them up and you get a point and another turn. Watch out for little kids. Some of them have great short term memories and often beat embarrassed adults. Great for the entire family.

CONCENTRATION \$4.95

### USEFUL SUBROUTINE ENTRY POINTS

A274	warm start for BASIC
BD11	cold start for BASIC
BF2D	CRT simulator - prints char in A register to screen offset by cursor (200 HEX)
FD00	input char from keyboard, result in A
FCB1	output 1 byte from A to cassette
FE00	entry to monitor, clears screen, resets ACIA
FE0C	entry to monitor, bypasses stack initialization
FE43	entry to address mode of monitor
FE80	input ASCII char from cassette, result in A, 7 bit cleared
FE93	convert ASCII hex to binary, result in A, -80 if bad
FF69	BASIC output to cassette routine, outputs one char to cassette, displays on screen, outputs 10 nuls if carriage return character

TANK FOR TWO

This one features a lot of action. Each player drives a tank that is equipped with three launch racks and steerable missiles. Use the keyboard or order our plans for the \$10.30 Joystick conversion.

TANK FOR TWO      \$5.95 each  
TANK J

FIGHTER PILOT

You've seen this one in the arcades, too. Enemy fighters appear in your cross hairs and try not to get shot. This one has ten levels of difficulty and an automatic fire option. It comes set up for either keyboard or Joystick.

FIGHTER PILOT      \$5.95

KILLERBOT

This is a classic from the old machine code days. You have to cross a courtyard full of killer robots and charged guard posts. If you can get the robots to run into each other or a charged post, they self-destruct. This version offers 20 levels of difficulty, uses keyboard or Joystick, and offers a lot of real time excitement.

KILLERBOT          \$5.95

BARRIERBALL

An excellent rendition of a game that used to be available only in arcades. Another fast real time game. Players attempt to trap each other with build-as-you-go barriers. It has good graphics, several skill levels, and plays with either keyboard controls or joysticks.

BARRIERBALL      \$5.95

\*\*\*\*\*JOYSTICK PLANS\*\*\*\*\*JOYSTICK PLANS\*\*\*\*\*JOYSTICK PLANS\*\*\*\*\*

You can buy joysticks locally (just about anywhere in the U.S.) and install them in about an hour on any polled keyboard OSI system. The total cost is about \$10.30 per joystick. We will show you how.

JOYSTICK PLANS      \$3.00

**\*\*NOTE\*\*** The plans are not available without at least one Joystick program and are free if you purchase our Joystick Package (TANK J, BARRIERBALL, FIGHTER PILOT and KILLERBOT) for \$19.95, or if you purchase either LIBRARY.

## SLASHBALL

This is an old computer standby, but until recently you could only get it if you programmed in machine language. The computer displays a playing field with a target in the center and serves a ball for you. Two controls will enter different slashes in front of the ball as it moves. The ball bounces off the barriers in a naturalistic way. Your object is to hit the target in the center. The slashes stay to help (or hinder) the next player. The last player to score wins. Requires both practiced reflexes and quick thinking. It is a fast real time video game that can be increased in difficulty as you learn to play it. It comes set up for graphics chip, but a two line change will change it over to alphabetic systems.

SLASHBALL           \$4.95

## HANDY LOCATIONS

### PAGE 0 USAGE

0000           JMP to warm start in BASIC (4C/74/A2)  
00FB           cassette/keyboard flag for monitor  
00FC           data temporary hold for monitor  
00FE-00FF      address temporary hold for monitor

### PAGE 1

0100-0141     stack  
0130           NMI vector - NMI interrupt causes a jump to this point  
01C0           IRQ vector

### PAGE 2

0200           cursor position  
0203           load flag  
0205           save flag  
0206           CRT simulator baud rate - varies from 0 fast to FF slow  
0212           Control-C flag  
0218           input vector FFBA  
021A           output vector FF69  
021C           Control C check vector FF9B  
021E           load vector FF8B  
0220           save vector FF96  
0222-02FA     unused

### PAGE 3 and up to end of RAM is BASIC workspace

A000-BFFF     BASIC in ROM  
D000-D3FF     Video refresh memory  
DF00           polled keyboard  
F000-F001     Cassette port 6850  
F800-FFFF     Monitor EPROM  
FC00           Floppy bootstrap  
FD00           Keyboard input routine  
FE00           Monitor  
FF00           BASIC I/O support

### BATTLEFLEET

This is a sophisticated game of battleship. You fight against the computer. It will hide four - two dimensional ships with three possible shapes in a 15x15 grid. You fire six shots at a time and the system will tell you how many hits you got. Unfortunately, it won't tell you which ones hit or which ships you hit on, so finding the ships becomes a real thinkers game of topography. It displays the grid and all past volleys on each turn.

BATTLEFLEET \$4.95

### MASTERMIND and GLEEP

This is a two-for-one package. "Find the Gleep" for the kids and our own version of MASTERMIND for Daddy. In GLEEP, the computer hides a Gleep in a 10x10 grid and then gives the kids hints on how to find it. Grid and the coordinates chosen are displayed each time. Mastermind is a real thinker's game - guaranteed to cause fights among the spectators. Everyone seems to know what to guess next - except the player.

MASTERMIND/GLEEP \$4.95

### MATH PRACTICE

Designed to provide electronic flashcards for the writer's children, this program automatically adjusts to the age level of the child. Provides practice in the basic skills of addition, subtraction, multiplication, and division. For younger children, the division section features a remainder; for older ones, the problems read out in decimals. It will repeat a problem up to five times if it is answered wrong, provides encouraging remarks using the child's name, and keeps score of right answers. Good for boosting grades.

MATH \$4.95

### TANKKANNA

This one looks easy, but it isn't. You race a tank around a twisting course. It takes coordination and timing to keep from crashing into the walls. Score is the number of successful laps completed. It uses keyboard or Joystick and offers 10 levels of difficulty. Because of the complex playing field, it comes in separate versions for C1 and C2.

TANKKANNA 540 \$4.95  
TANKKANNA 600 (C1 and Superboard)

### MORE USEFUL SUBROUTINE ENTRY POINTS

FF00	Reset entry point
FF8B	Load flag routine
FF96	Save flag routine
FF9B	Control-C routine
FFBA	BASIC input routine

### GOBBLER

This package contains three programs, all based on a common "eater" construct. The little fellow moves more or less at random, but can only go into areas he hasn't seen before. We gave him a little memory to help him out of the blind spots and came up with the darnedest intelligent looking construct.

Version one draws electronic Rorschacks for you. Version two is "Mongol Hordes". These nasty fellows have most of the same characteristics of the eater, but they follow orders most (or at least some) of the time. Version three is a BARRIERBALL like game for one player.

GOBBLER \$4.95

### BIORHYTHM

Accurately lists out the three basic biorhythms for any given timespan. Automatically calculates leap years. Simply input birthdate and dates to be charted.

BIORHYTHM \$3.95

### BOWLING

This is a game for 1 to 8 players. It's not standard bowling (there are 15 pins and 5 balls per frame) but it is fun and even young kids can play it because there is only one control. An enjoyable one to share with the family.

BOWLING 540 \$3.95  
BOWLING 600

### DEMONSTRATOR

Originally designed to show off dealers systems, it does a pretty good job of showing your system to your friends. It demonstrates the OSI's fast graphics, polled keyboard capabilities, and string handling abilities. It even contains a little bowling game and a simple "gobbler". It packs a lot of programming into 4K. Unfortunately, it is available only for 540.

DEMONSTRATOR \$5.95

All of the programs in this catalog, except CHESS and AUTO LOADER, are in BASIC, and all run in 4K.

All of the programs are original. You won't find them in books of games or old issues of BYTE. A few of them replay old themes from machine code days, but those have been rewritten from scratch to run well in BASIC and on OSI computers.

## UTILITIES

### LINE RENUMBERER

This valuable little program lets you program like a professional - or at least makes your listing look that way. It renumbers BASIC programs so that all the line numbers are in even multiples of ten. (no more 20, 26, 28, 34, 99, etc.) It even renumbers the GOTO, THEN, and GOSUB statements.

LINE RENUBEREER \$4.95

### VARIABLE TABLE MAKER

This program tells you which variables you have yoused and which lines each appears in. Handy tool for debugging long programs. Can be co-resident with RENUMBERER.

VARIABLE TABLE MAKER \$4.95

### SEARCH

Similar to the VARIABLE TABLE MAKER, but is shorter, requires less memory, and is a little handier. It will search a BASIC program for a single variable name, statement or line number. (i.e., you can search for "GOSUB1400") and will list out the line numbers it appears in. A very handy utility.

SEARCH \$4.95

### SUPER UTILITY PACK

Three utilities in one package. (LINE RENUMBERER, VARIABLE TABLE MAKER, and SEARCH), all co-resident. Programs to help you write and document programs.

SUPER UTILITY PACK \$12.95

### AUTO LOADER

This is a machine code tape that allows you to generate self loading machine code tapes. A corrected and improved version of OSI's Autoload system, this one allows you to load a main program and then automatically add a page one segment (for tables and similar stuff). For BASIC in ROM systems only. Specify system.

AUTO LOADER \$4.95

\*\*\*NEW\*\*\*

DATA SHEETS

\*\*\*NEW\*\*\*

GRAPHICS INSTRUCTIONS Nine pages on how to add Klingon-killing type graphics to your programs. Detailed instructions on how to poke ships, torpedoes, or scores onto your screen, move them around, and detect when you hit something.

\$1.95

HOW TO READ A LINE OF MICROSOFT Ever wonder what those funny numbers in the program storage memory meant? This explains how MICROSOFT stores the program. Allows you to play with neat programming ideas like a RENUMBERER.

\$1.00

600 BAUD CASSETTE/PRINTER INTERFACE CONVERSION FOR THE C1-P  
2 sheets \$1.00

JOYSTICK INSTRUCTIONS (see description on p#5) \$3.00

### PRINTER POKES

There are two handy locations you should know if you are trying to use a fast cassette interface or a printer with a slow carriage return. In either case it is sometimes handy to put out more nulls than the ten that BASIC allows. The null number is stored in 13. By POKEing the number of nulls you want into 13 you can get up to 255 nulls.

Location 518 is the baud rate simulator. Its end effect is to put an interval between printed characters. It can help if your printer has handshake problems or if you just want to slow down the print for emphasis. POKEing a number into 518 gives you the interval.

### A PARTICULARLY HANDY SUBROUTINE

BF2D is a real time saver if you are writing machine code. It is a subroutine that prints a character from the accumulator to the screen offset by the value stored in 200 (hex). It also increments the cursor and can process a carriage return so a lot of your work is done for you.

(From: James Cameron  
Providence, R.I.)

\*\*\*\*\*SPECIAL DEALS\*\*\*\*\*

JOYSTICK PACKAGE

This one contains KILLERBOT, TANK J, BARRIERBALL, FIGHTER PILOT, and the plans for the joystick conversion. Normal cost - \$26.80

PACKAGE PRICE - \$19.95

BATTLEPAK

For the battlebuff, this package contains STARFIGHTER, BATTLEFLEET, SEAWOLFE, and BOMBER. Normal cost \$21.80

PACKAGE PRICE - \$15.95

THINKER'SPAK

For mental exercise. Contains BATTLEFLEET (our toughest mind twister), MASTERMIND/GLEEP and CONCENTRATION. Normal cost \$14.95

PACKAGE PRICE - \$11.95

THE BUDGET LIBRARY

STARFIGHTER  
SEAWOLFE  
TANK FOR TWO  
FIGHTER PILOT  
BREAKTHRU  
BATTLEFLEET  
CONCENTRATION

SLASHBALL  
KILLERBOT  
BIORHYTHM  
MATH  
BOMBER  
BARRIERBALL  
GOBLER

MASTERMIND  
GLEEP  
TANKKANNA  
BOWLING  
LINE RENUMBERER  
THE JOYSTICK PLANS

All comes on one tape. I must point out that this is a tape to tape copy and may have a few errors. The last batch I checked out averaged two per tape - not many, but they were annoying. If you will do a lot of back and forth winding, save me money on tape and time on copying, I'll give you a real deal!!! \*\*\*NOTE\*\*\* the BUDGET LIBRARY has the same documentation as the regular library.

PACKAGE PRICE \$49.95 (or about \$2.62 per program - less if you consider that Gobbler contains three versions and that FIGHTER PILOT, BREAKTHRU, KILLERBOT, BARRIERBALL and TANKKANNA also contain Joystick versions. You couldn't buy magazine and type in general purpose programs for that price.)

THE LIBRARY

Contains everything in the BUDGET LIBRARY plus the SUPER UTILITY PACK (three programs in place of the RENUMBERER) and TEN TANK BLITZ. All (except two for one deals) come on separate tapes. Regular prices total \$111.05

PACKAGE PRICE \$74.95

\*\*\*\*\*GOOD NEWS If you have purchased programs from our ads, we will discount your package \$3.00 for each program you have already ordered.

BAD NEWS\*\*\*\*\* No discounts on Library Deals. One enterprising fellow ordered a \$49.95 Library, added a 50¢ catalog and asked for a 10% discount. No can do!!!

### HOW THEY COME

Except for the BUDGET LIBRARY, each program is made on an OSI system set for 300 Baud  $\pm .02\%$ . We use Panasonic recorders on which we have verified standard speed and head alignment. Each program is copied twice on different recorders - just to make real sure it will load. Programs ordered individually come one to a cassette, except for two for the price of one packages which come two to a cassette.

The Master for the BUDGET LIBRARY is made on this equipment and then copied professionally.

Anyone who has a cassette interface set reasonably close to 300 Baud and a tape recorder with a tone control will be able to load these programs. We guarantee it.!

### FAME AND FORTUNE

How about a little fame and fortune? This offer will get you as little as any. Send us a new Poke or Subroutine in ROM location for OSI equipment and we will send you a free program of your choice or discount a package the value of one program and put your name in our next catalog. Unfortunately CHESS is not included in the offer.

### STUFF AND SUCH

We try to deliver the very best product we possibly can - but we're only human and sometimes mistakes occur.

For example, we found out last week that we had inadvertently left a line of instructions out of the AUTO LOADER documentation. Without this line the program was impossible to run. We had shipped it out that way for almost two months before anyone wrote to complain about it. Once we realized the mistake we were able to send corrected documentation to everyone who had purchased the program.

But we're puzzled... Maybe people expect "shlock" software, but we don't want to sell it. If you have trouble with one of our products, let us know - and let us know exactly what its doing - in the case of tapes, its preferable to send it back so we can take a look at it on our systems. We'll do our best to fix it, but first we have to know about it.

(Positive feedback is also accepted!!)

SCHNIEDERSTUFF (NAMED FOR THE AUTHOR)

TEENAGE DRIVER

In this tasteless game, you drive around a parking lot attempting to hit as many pedestrians as possible. It's good for working off frustrations after the long drive home.

\$4.95

BATTLEGROUND

In this new game, you drive a tank trying to blow up two enemy bunkers. The problem is to get by the mines, barriers, houses, and trees without losing your entire tank force.

\$4.95

POKER ROUTINE MAKER

This one could use a better name. This program, written in BASIC, helps in writing USR routines by translating an already written machine code program into taped series of DATA statements numbered at your choice of locations. It also generates the statements to poke the data into the proper location and poke the starting vectors into locations 11, & 12.

\$3.95

SCHNIEDERPAK

Both of Schnieder's game programs (BATTLEGROUND and TEENAGE DRIVER) in one package.

\$7.95

MASTERMIND II (Mark Wixom)

A mind twisting version of MASTERMIND that offers enhanced graphics, six levels of difficulty and play that is virtually (numbers instead of colors) identical to the original game. Warning: this one can be habit forming.

\$4.95

As this page indicates, we do accept programs from outside sources. They must be original, on tape, and well enough documented that I can tell how to use them. Unlike some software houses, we don't promise unseen Millions, but the commissions on a game could pay for a new printer - and utilities do even better. Also, we normally evaluate a program within two weeks and get it into production in 6-8 weeks.

SEMI-FAST SCREEN CLEAR (WITHOUT THE USR FUNCTION)

I hate to be bothered with the USR screen clear - I can't remember it off hand and hate to look it up. Besides, it takes too much memory. This one is fast, clears the whole screen in 2.16 seconds, and easy to use.

100 FORX 1T029:?:NEXT

(C2)

110 FORX 55168T055295:  
POKEX,32:NEXT

(C1)

110 FORX 54147T054275:(54307 on  
some monitors)POKEX,32:NEXT

### PRINT AT STATEMENT

OSI has a great BASIC but the lack of a PRINT AT command makes it difficult to print scores and names and similar items where you want them on the screen. You usually end up with a long series of POKE statements and you have to divide the score up into individual digits to do even that. There is a simple solution. Add this subroutine to your program-

```
5000FOR Y=1 TO LEN(D$):POKE D+Y,ASC(MID$(D$,Y,1)):NEXT Y:RETURN
```

To POKE up any name, word, or even sentence on the screen simply set the name equal to D\$ and make D=equal the starting address on the screen. i.e.

```
3000D$="WINNER IS":D=54040:GOSUB 5000
```

Scores should be done just a little differently. You start at the second digit because the BASIC thinks the sign is the first digit in the string and can set you over one space from where you planned. You may also want to blank the digit after the string to allow for the possibility that the score may decrease (say from three to two digits). To use it you set the score equal to D\$ and the final product looks like this-

```
3000D$=STR$(SCORE):D=54040:GOSUB 5000
```

```
5000FOR Y=2 TO LEN(D$):POKE D+Y,ASC(MID$(D$,Y,1)):NEXT Y
```

```
5010POKEY,32:RETURN
```

### SOME POKES YOU SHOULD KNOW

To aid in reading you may want to set the line length down to 32 on a C2 or to 23 on a C1. Unfortunately, if you set them down when you start up the system you will be unable to make tapes. Fortunately, the line length is stored in location 15. You can reset line length by executing 100POKE15,32 (or any other number down to as little as one) and then reset with 200POKE15,72 to record the program.

If you find it annoying to reserve space for user programs when you fire up the system (I always forget to do it when I am using the rapid screen clear) you can set the memory space by POKEing the high order digit (in HEX) into location 134 and the low order digit into 133. For instance, the line 100POKE134,14 will reserve space for the screen clear without resetting the system.

You can even make self starting BASIC programs if you are willing to do a few additional moments work when you make the tape. The flag for LOAD is in location 515. A 1 POKEd into that location turns off the load mode. Therefore, to make a self start tape-as soon as the program finishes reading out to the tape and while the system is still in SAVE mode, type in POKE515,1:RUN

That command will record on the tape and start the program automatically when it finishes loading.

SAVE can be turned off in a similar manner by POKEing a 0 into location 517

### EASY KEY DETECTION

If you are doing a one player game, you can detect the control keys without either POKEing the keyboard or turning off the CONTROL C scan. The values for the shifts, rept, control, and esc keys are recorded continuously in location 57100. i.e. If you push the right shift, a 3 always appears in 57100. To see how it works try this program

```
10PRINTPEEK(57100):GOTO10
```

Then push the control keys one at a time. It is simple, fast, and allows you to keep the CONTROL C function to break the program..



