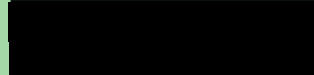


# DREAMER N9 12

## AUG '81.

N.S.W. 6800 USERS GROUP,



G'S BIKE.

G HAD A BIG SURPRISE ONE BIRTHDAY.  
IT WAS A YELLOW BMX BIKE THAT LOOKED  
JUST LIKE A TRAIL BIKE.

G THOUGHT IT WAS FANTASTIC AND RODE IT EVERYWHERE.  
G'S FRIEND HAD ONE TOO SO THEY OFTEN WENT INTO  
THE BUSH AND LOOKED FOR ADVENTURES.

ONE DAY THEY FOUND A LOT OF MONEY THAT SOME  
ROBBERS HAD STASHED IN THE BUSH.

THE POLICE SAID THEY COULD HAVE A REWARD  
AND THEY BOUGHT ALL THEIR FRIENDS TRAIL BIKES  
AND HAD LOTS OF EXCITING ADVENTURES.

THIS IS THE STORY ABOUT G THE TRUCKIE.

THERE WAS ONCE A TRUCKIE CALLED G  
THIS TRUCKIE DROVE AN ENORMOUS RIG.

ONE DAY WHEN G WAS DRIVING THROUGH COBDEN  
THERE WAS A BAD SMASH.

THE TRUCK CAUGHT FIRE AND G ONLY JUST GOT OUT  
BEFORE IT EXPLODED K A B O O M .

TWO CARS WERE WRECKED. ONE WAS A HOT ROD  
AND THE OTHER WAS A VERY COOL VAN.

G WAS VERY SORRY ABOUT THE ACCIDENT AND AFTER THAT  
ALWAYS USED TO TRY TO BE A SAFE DRIVER.

THE NEW RIG THAT G BOUGHT WAS A VERY COOL RIG  
WITH A DOUBLE SLEEPER CAB AND TEN AIR HORNS.

G ALWAYS LET RIP A BLAST ON THE HORNS WHEN  
GOING PAST THE SCHOOL.  
ALL THE KIDS SAID THAT G WAS THE COOLEST  
DRIVER IN COBDEN.

## WOULDN'T IT BE GREAT IF

- \* You could see the results of each keystroke as you enter data.
- \* You could see the data displayed in 2-byte blocks.
- \* You could see the last 4 of these blocks on the screen at any time.
- \* You could then, not only increment the addresses, but also decrement them.

## WOULDN'T IT BE EVEN BETTER IF

- \* Each CHIP-8 instruction could be disassembled and its meaning displayed.
- \* Your programs were not wiped out if you hit "Tape Load" by mistake instead of "Tape Dump".
- \* The old MEMOD was retained for those who insist that "Life wasn't meant to be easy".
- \* All these functions could be called, in any order, from a 9-option command loop.

## AND WOULDN'T IT BE JUST PERFECT IF

- \* All this was available on an EPROM which just replaced CHIPOS.
- \* This new EPROM was totally compatible with all previous software.
- \* It was also independant of any hardware modification including memory and I/O expansion.
- \* It in no way superceeded, replaced or depended upon your DREAMSOFT No.1 EPROM - but in fact complemented it.

WELL IT'S HERE !      AND FOR ONLY \$30.00

# THE DREAMSOFT No 2 PACKAGE

provides all this and more in a pre-programmed 2716 EPROM. A comprehensive manual is supplied which includes installation and test instructions, list of user-callable subroutines and fully commented listing.

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To DREAMSOFT  
P.O. BOX 139,  
MITCHAM VIC. 3132

You've convinced me! My computer needs your software.  
Please RUSH the following items.

QTY	ITEM	\$
	DREAMSOFT No.1 PACKAGE (Resides 1800-1FFF) @ \$30	
	Instructions for installing the No.1 Package on the EA 4K RAM board @ \$5	
	DREAMSOFT No.2 PACKAGE (Resides C000-C7FF) @ \$30	
	More details of both packages FREE	
A CHEQUE/MONEY ORDER IS ENCLOSED FOR - - - - -		\$

SEND TO: Name \_\_\_\_\_  
Address \_\_\_\_\_  
-----Postcode-----

Here at last is the long awaited index to the first ten issues of the 'DREAMER'. We think Ed has done a marvellous job on it, and it was certainly worth waiting for. We have tried to space it out so that you can either cut it up and put the relevant bits at the front of each issue, or put them all together at the front of a binder. If you do not want to cut up your 'DREAMER', we do not mind if you have photo-copies made of the index.

The HIGH RESOLUTION GRAPHICS modification from Michael Bauer has not been included, as there are still some problems to be sorted out, and M.J.B. has taken the article back to do some more work on it. We will let you know when this is ready to go. By the way, M.J.B. tells us that he can still supply the CHIPOS manual, at a cost of \$5-00, but if you want one, be prepared for a bit of a wait, as he has run out of stock, and has to wait until he receives sufficient orders to justify a print run. Write to Michael J. Bauer, [REDACTED]

BACK ISSUES - We are now almost out of back issues. We have on hand 7 of No.2, 13 of No.4, 4 of No.6, 1 of No.7, 5 of No.9, and 14 of No.10. Supplies of No. 1, 3, 5 and 8 are exhausted, but we still have plenty of No.11. Should you require any of the above, we suggest you order them now, as once they run out, the only way that we will be able to supply them is by having photo-copies made, and we will have to charge \$6-00 a copy to cover the cost of photo-copying, plus the extra postage which is incurred by not being able to copy on both sides of the paper. This makes them twice as thick and twice as heavy.

NEED SOME HELP? - If you live in the Brisbane area, Mr. G.J.Bidgood, [REDACTED] is willing to help anyone who has problems.

HOW TO SUBMIT PROGRAMS - The page with details on this has not been included in this issue, due to space limitations, but we still need more programs and more articles, so just refer back to last month's issue to check our requirements if you have something for us.

CONTROLLING EXTERNAL DEVICES - In addition to the 'DREAMTIME' article in this issue, Graham Leadbeater reminded us that anyone who has a 'DREAMSOFT' No.1 EPROM can use DREAMTEXT to control things, by setting PB1 or PB2 High or Low, and using a simple interface similar to the one shown with the 'DREAMTIME' article. You could also have a message come up on the screen at the same time, to remind you what to do. One of his suggestions was for a slide show, with the title of the slide on the screen, and the computer controlling the projector and a cassette player. Details on how to use it are given in the DREAMSOFT EPROM instructions.

NEXT MONTH - We will have

- AMAZING - Requires 2K, see if the mouse can find his way out of a 'maze'.
- NAMES - Let the computer make up ridiculous names for you.
- STRIP-JACK-NAKED - Lose your clothes instead of your dollars
- EDUCATIONAL MATHS - Teach your children how to add up.
- STARSHIP ENCOUNTER - Destroy the enemy for a successful mission.
- CRASH - Two cars on the track. Can you beat the computer?
- HOW TO ADD SOUND EFFECTS TO YOUR PROGRAMS.
- PLUS articles on Storing information or instructions on your programs, a Chip-8 Instruction Display and Edit program, a Displayed checksum for Dream Invaders, and another Poker Machine.

HAPPY DREAMING,

GARRY AND GRAEME.

\*\*\*\*\*

Well, this article has been coming and coming for ages, and just never seemed to arrive, but here it is at last.

When you want to change key functions, first you must remember that there are two separate ways to get keyboard data into a Chip-8 program. The first of these is a WAIT FOR KEY instruction, (FX0A), the second is TEST FOR KEY. (EX9E or EXA1)

Before you can change key functions, you must decide which type of input it is. To do this, you must ask the question, "Does it WAIT until I push a key?" If it doesn't wait, then it must be an EXA1, (or EX9E) type. Then ask, "Does it 'beep' when I push a key?" If it does beep, it is a FX0A type. If it doesn't beep, it is EXA1 or EX9E.

Firstly, the 'Test for key' instructions, EXA1, EX9E. To find these instructions, you get a listing of the program and look at the FIRST digit of each instruction. When you find an 'E', ignore the second digit and look for 9E or A1 in the last two. Mark any EX9E's or EXA1's that you find, these are the 'no wait' instructions. (NOTE: 'X' equals any Hex digit, 0 to F.)

You should remember that these instructions need to compare the contents of a Variable defined by the second digit (X), to the key board value, and then 'skip' the next instruction if the key is a) EQUAL, (EX9E) or b) NOT EQUAL. (EXA1)

Once you find the instruction, look at the second digit. This is the Variable that is being used. Most programmers set this Variable in the instruction BEFORE the EX9E (EXA1) instruction, so look at the previous instruction. It will most usually be a 6XOK(ey), where K is the Key involved. E.G. You may have;

```
0300  6A0C  )
      EA9E  ) Look for key 'C'
      7B01  (Key)
```

So, to change the key you want the program to look for, change the digit (K) to the new key. In our example, we want to use key 'F' instead of key 'C';

```
0300  6A0F  )
      EA9E  ) Look for key 'F'
      7B01  (Key)
```

If the key setting instruction is not directly before the 'look for key' instruction, then it may be two or three instructions before. If it is not, the programmer has used some other method to define the keys used and you must start a complicated search for where the key is set. This is now a case of the 'blind leading the blind' because you will have to disassemble more of the program to find out how it worked. For example, in 'Snake', there were four places where each direction was assigned.

Then, there is the 'Wait for key' instruction, FX0A. To find 'wait for key', first look for 'F's in the first digit of each instruction. When you find an 'F', ignore the second digit and look for '0A' in the last two digits. (I.E. Just look for FX0A's)

This instruction gets the value of the first key pressed and stores it in the Variable specified by 'X'. To use this data, tests are usually carried out on the Variable with 'Skip if equal' (3XNN), or 'Skip if NOT equal' (4XNN) instructions. In most cases you have a FX0A, followed by 4XNN. (Handy instruction, 4XNN - -.)

For Example:

```
0280  F00A  Get key, store in 0
      400F  ← If F,
      7A01  Then add 1 to A
      400C  ← If C,
      7AFF  Then add -1 to A
           (Key)
```

In this case, to change key functions, just change the last digit in the 4XKK instruction.

## HOW TO CHANGE KEY FUNCTIONS (Cont)

In our example;

F00A	Get key
4003	If 3,
7A01	Then add 1 to <u>A</u>
4000	If 0,
7AFF	Then add -1 to <u>A</u>

If the 4XKK (or 3XKK) instruction is NOT present, you will have to trace the program through until something similar occurs. I.E. A test is done on the input Variable.

In both cases, work out what keys are to be changed to what, and change the appropriate places. If it is not in this simple form, you will have to pull the program apart, (use 8 Bug, or something similar,) and analyse it. Unfortunately, there is no other way.

This article, as you may have realised, has only dealt with the two most general and simple cases, but each programmer and each program has their own technique, which must be uncovered and understood. To touch on just a few would take up much room and time, as only the programmer will know how the data is inputted in that program. This article however, should put you on the right track in sorting them out.

It would be a great help to us, and help us help you, if all programmers would tell us in the explanation of their program, how to change key functions, and the assignment of the Variables used, so that we could tell you!

\*\*\*\*\*

## HOW TO CONVERT PROGRAMS TO USE THE ASCII KEY BOARD

GRAEME V. SAMWAYS.

This article assumes that you already have the ASCII keyboard described in last month's (July) issue connected, and the Key board Routine loaded at 0700 - 07FF.

With T.V. Typewriter, Alpha Display, etc., a two key input was used to define Alphabetic and Numeric keys, using the T.V. Typewriter code.

To convert the program to use the ASCII key board, you must get the key, then convert it to T.V. Typewriter code. This is how I converted Lindsay Ford's 'Hangman' program.

### Original Listing:

0296	F10A	V1 = KEY	Get Key. (0X must be 00,01,02)
0298	4100	SKF V1 NE 00	)
029A	12A8	GO TO 02A8	)
029C	4101	SKF V1 NE 01	)
029E	12A6	GO TO 02A6	)
02A0	3102	SKF V1 = 02	)
02A2	12BC	GO TO 02BC	02BC is error handling routine
02A4	710F	V1 = V1 + 0F	i.e. wrong key
02A6	710F	V1 = V1 + 0F	
02A8	F00A	V0 = KEY	Get second key
02AA	8014	V0 = V0 + V1	Add it to first

### Modified Listing:

0296	07F0	CALL M/C AT 07F0	Get an ASCII key
0298	70C9	V0 = V0 + C9	subtract 55(decimal)
029A	12AC	GO TO 02AC	(Remember that A in ASCII is
029C	0000	NOP	41(Hex), not 0A(Hex) as it is
029E	0000	NOP	in T.V. Typewriter, so you must
02A0	0000	NOP	subtract the excess to make the
02A2	0000	NOP	figure returned to Variable 0
02A4	0000	NOP	by the routine at 0700 equal

## HOW TO CONVERT PROGRAMS (Cont)

02A6 0000 NOP  
02A8 0000 NOP  
02AA 0000 NOP

to the T.V. Typewriter code.  
Then, replace the rest of the  
original Get Key routine with  
No-op's.

A similar method can be used with other programs, but they will not all be exactly the same. Don't be afraid to experiment, you cannot hurt the computer, so play around with the program until you get it right. If the program 'bombs out' because you have done something wrong, just load it in again, and try something different.

In general, you must,

- 1) Find the 'Get Key' routine.
- 2) Replace the first instruction with a 'Call M/Code routine at 07F0' (or 0700) instruction
- 3) Subtract from the figure in Variable 0 to convert ASCII to T.V. Typewriter code.
- 4) Go to first instruction after Get Key routine
- 5) Replace remainder of Get Key routine with No-op's.

\*\*\*\*\*

DREAM TIME

( 0200 - 0400 )

A. L. MARTIN  


This program (with suitable interfacing) allows the pre-determined switching ON and OFF of external electrical devices.

The TOP row of figures in the display is SWITCH ON time.

The next row is SWITCH OFF time, and the lower row is CURRENT TIME.

The key functions are as follows:-

Key 8 = Increment ( @ 1Hz ) HOURS ON  
Key 9 = Increment ( @ 1Hz ) MINUTES ON  
Key A = Increment ( @ 1Hz ) HOURS OFF  
Key B = Increment ( @ 1Hz ) MINUTES OFF  
Key C = Increment ( @ 1Hz ) TIMER HOURS  
Key D = Increment ( @ 1Hz ) TIMER MINUTES  
Key E = Set to Zero TIMER SECONDS

The program is RUN by keying C000, FN. 3.

Initial settings are ; ON - 24:00

OFF - 00:00

TIMER- 00:00:00

NOTE : The ON time is set to 24:00, which the timer cannot reach, thus the SWITCH ON is disabled. To set, just use keys 8 & 9.

To allow rapid initial settings of values, insert the Hex value of the desired times at

032C for Hours On  
032D for Minutes On  
032E for Hours Off  
032F for Minutes Off  
0330 for Timer Hours  
0331 for Timer Minutes  
0332 for Timer Seconds

If the timer runs fast or slow, change the value at 0300 accordingly.  
The initialise and restore routines are at 023C and 0242.

DREAM TIME (Cont)

Just choose which PIA lead you wish to use, store the Hex value of its bit position at 023D, and away you go.

E.G. PIA lead PB6 (Tone) = 40Hex. ( PB7, PB6, PB5, PB4, / PB3, PB2, PB1, PB0. )  
0 , 1 , 0 , 0 , / 0 , 0 , 0 , 0 .  
= 4 / 0

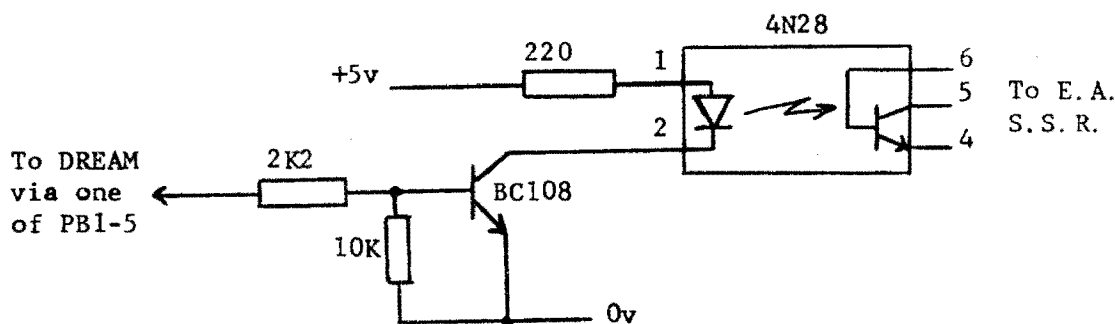
The program works by setting the predetermined PIA 1B lines HIGH when the ON time is reached, and all PIA 1B lines off, when the OFF time is reached. You choose the PIA lines as above, setting in Hex the bits corresponding to the lines you wish to control. (Remember that Bit 7 is an Input only.) The program as listed turns on all the PIA lines except PB7 and PB0. This obviously will also turn the speaker tone on. If you don't want the tone on, change 023D to 3E, and all free lines will go high when the ON time arrives.

The program is designed to control external devices, and this is achieved in the following manner:-

1) Get a copy of Electronics Australia, August '79, (this had DREAM article No.4 in it,) and find the article on a SOLID STATE RELAY, on Page 42. This gives a circuit, a P.C. Board, and instructions.


2) Do not build the circuitry to the left of the 4N28 opto-isolator, (I.E. The transformer, etc.) but use that shown below.

WARNING: Do not attempt to control any mains operated equipment without some form of isolation such as the 4N28 provides, as this provides protection for the computer, (and YOU ), from 'foreign' voltages.



0200	A324	FF65	0000	7E01	3E3C	1222	6E00	7D01
0210	3D3C	1222	6D00	7C01	3C18	1222	6E00	6F00
0220	6C00	0000	5C80	122E	5D90	122E	023C	0000
0230	5A00	1250	5B00	1250	0242	1250	067E	F700
0240	1239	0600	F780	1239	0000	0000	0000	0000
0250	6700 <sup>00</sup>	E7A1	1280	6700 <sup>01</sup>	E7A1	1280	6700 <sup>02</sup>	E7A1
0260	1294	6700 <sup>03</sup>	E7A1	129E	6700 <sup>04</sup>	E7A1	1200	6700 <sup>05</sup>
0270	E7A1	12B2	6700 <sup>06</sup>	E7A1	12BC	1200	0000	0000
0280	7801	3819	12C0	6800	1200	7901	393C	12C0
0290	6900	12C0	7A01	3A18	1200	6A00	1200	7B01
02A0	3B3C	12C0	6B00	12C0	7C01	3C18	12C0	6C00
02B0	12C0	7D01	3D3C	12C0	6D00	12C0	6E00	12C0
02C0	6E00	6700	A320	F833	2310	6718	A320	F933
02D0	2310	6608	6700	A320	FA33	2310	6718	A320
02E0	FB33	2310	6610	6700	A320	FC33	2310	6718
02F0	A320	FD33	2310	6718	A320	FE33	2310	0000
0300	6504	F515	F507	3500	1304	0000	1206	0000
0310	A100	F265	F129	D765	7708	F224	D765	00EE
0320	0002	0000	0000	0000	0000	0000	1800	0000
0330	0000	0000						

\*\*\*\*\*

BRUCE MITCHELL,  


The Storyteller program runs from 1600 (1600, FN, 3, NOT C000, FN, 3,) and needs a DREAMSOFT EPROM and a teleprinter. It greets the user and asks for the user's name. CR is used to denote the end of a reply. It then asks the user what story subject they are interested in. Using the first four letters of the answer, it searches a text buffer between 0200 and 14FF for a match. Herein lies the hard part, because the text must have been entered previously into the buffer, using the text loader routine. (See below.) When writing stories to put into the text buffer, it is important to scatter numerous keywords around so that as many likely topics as possible will be caught. All stories in the buffer must begin and end with ASCII 07 (BEL). 07 was used because 04 (EOT) is hard to generate with my dear old Model 15! When a match is found, the routine looks back to the nearest 07 and prints out the text as entered, except where ASCII 24 is encountered. (Fig. G on my machine.) Instead of Fig. G, it will print the user's name, thus generating much enthusiasm for the idea of reading the story in younger minds not experienced in the ways of devious adults. Don't forget to put 07 at 0200 as well after loading the story or you will end up with all kinds of dreadful tales as the scratchpad and screen are disgorged onto the page. Very off-putting, especially if you are only 5 years old.

## TEXT LOADER: 1700 - 17DF

This is slightly different to the 1700-17DF section of the Storyteller program. The area of difference is from 17C0 to 17DF.

To load text into the 0200 - 14FF buffer, run the Text Loader from 1780. Special functions are:-

1. ASCII 24 will trigger the insertion of a name when encountered during Storyteller printout. This is produced by Fig. G on my rig, but check yours carefully before pulling the program apart in frustration. Enter the appropriate ASCII code at 17E3 in the program.
2. "/" will delete the last character entered, and "/////" will delete the last five characters. Watch the letters/figs setting after spaces as the l/f flag forgets to wave. Up to 255 characters can be deleted, if you are really desperate.
3. To exit the text loading part of the routine, enter figs J (bell). This will insert an 07 at the end of the text. Save the text on tape or move it somewhere safe with your DREAMSOFT before running the text loader again to enter the next story, as it always starts entering at 0200.

You will want to check your text, of course, so run the Text Loader from 17CE and see how it looks.

The program has been in use with fifty rather enthusiastic 5, 6 and 7 year olds for quite a while now. They got bored with the half-dozen or so stories after a couple of weeks, so I asked them to write some new ones and they haven't stopped since. My typing is improving a lot, and so is their ability to write down ideas for other people to understand and enjoy, so I guess you could say the DREAM has done its bit for education for this month at least.

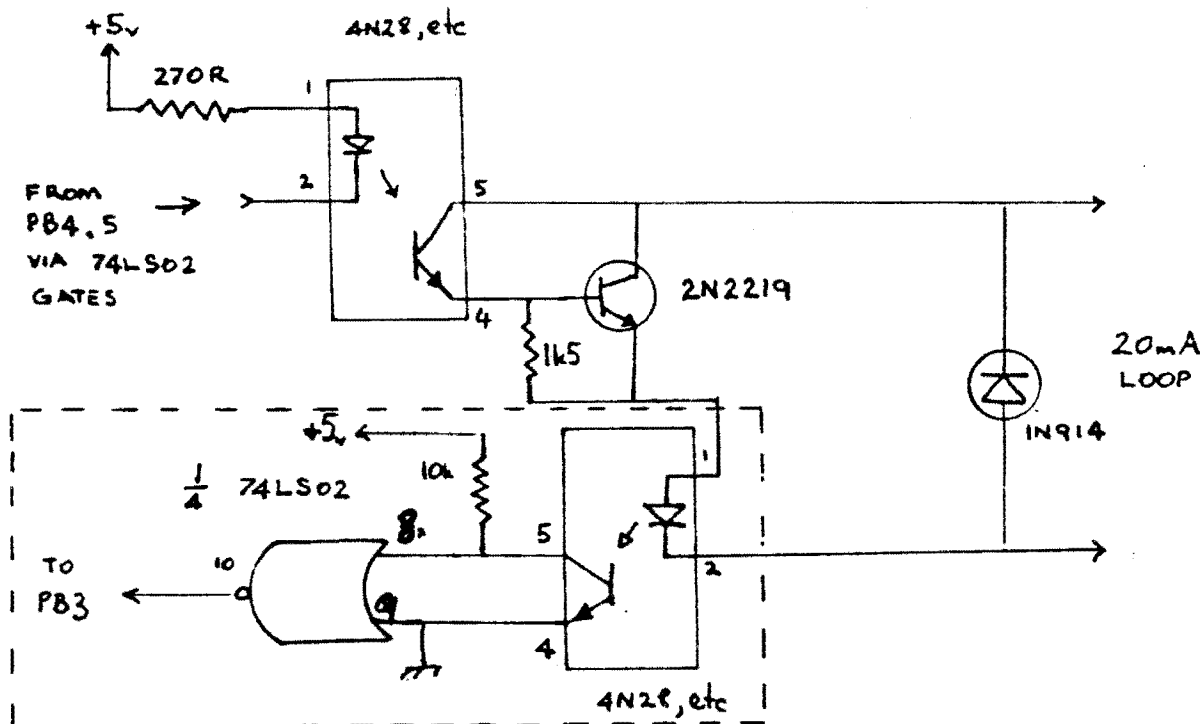
If you interfaced your Teleprinter as described in Figure 5 of your DREAMSOFT EPROM instructions, you will notice that the circuit only allows for one-way transmission of information, i.e., from the DREAM to the teleprinter. Should the key board on your machine be in good working order, or you are able to restore it to such, you will need to modify the interface in accordance with the following circuit diagram, to allow input to the DREAM from the



teleprinter, via PB3, which has been reserved for this purpose. (Refer to Figure 5 of DREAMSOFT EPROM instructions while reading this section.) The program as listed has been written for this form of input.

TTY INPUT TO PB3

This simple input circuit uses a spare gate in the 74LS02 and an opto-coupler in series with the 20mA loop.



Add the circuit shown inside the dotted lines to your existing interface.

Should the key board on your teleprinter be beyond redemption, or should you use some other means to obtain your 'hard copy', don't despair, you can use the ASCII keyboard described in last month's 'DREAMER' in its place. This is what you need to do.

Load the 'ASCII Key Board Routine' given in July issue into 1400-14FF. Change 1732/4 from 8DCC 81 to 7E14 F0. This area of RAM was previously part of the 'Text Buffer', so don't forget that the buffer to load your stories into is now only 0200 - 13FF.

The stories on the front cover are two examples that should give you some ideas.

One final point on the way you have powered your teleprinter. If you used a basic drive circuit, such as that shown in Fig.6 of the DREAMSOFT EPROM instructions, the keyboard will not work, as the keyboard contacts are not included in the circuit. In order to make it work, you will need to use a circuit such as that shown in Fig.7 of the instructions.

Very special thanks to Graham Leadbeater for help with the TTY input and DREAMSOFT routines.

\*\*\*\*\*

# STORYTELLER (Cont)

Program Listing 1500 - 1800

RUN from 1600

```

1500  0D 0D 0A 0A 0A 7F 48 45 4C 4C 4F 2E 20 00 0A 57
1510  48 41 54 20 49 53 20 59 4F 55 52 20 4E 41 4D 45
1520  20 7F 07 00 00 00 00 00 00 00 00 00 00 00 00
1530  0D 7F 0A 0A 49 53 20 59 4F 55 52 20 4E 41 4D 45
1540  20 52 45 41 4C 4C 59 20 07 0D 7F 0A 0A 57 48 41
1550  54 20 57 4F 55 4C 44 20 59 4F 55 20 4C 49 4B 45
1560  20 4D 45 0D 0A 54 4F 20 54 45 4C 4C 20 59 4F 55
1570  20 41 20 53 54 4F 52 59 20 41 42 4F 55 54 20 07
1580  0D 0A 0A 7F 41 52 45 20 59 4F 55 20 53 55 52 45
1590  20 59 4F 55 20 57 41 4E 54 20 41 20 53 54 4F 52
15A0  59 20 41 42 4F 55 54 20 07 53 54 4F 52 59 20 41
15B0  0D 7F 0A 0A 53 4F 52 52 59 2C 20 49 20 44 4F 4E
15C0  27 54 20 4B 4E 4F 57 20 41 4E 59 20 41 42 4F 55
15D0  54 20 7F 07 00 00 00 00 00 00 00 00 00 00 00
15E0  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
15F0  00 00 00 00 00 00 00 00 20 3F 0A 0D 0D 2D 7F 07

1600  BD 17 CE BD 16 CE 7F 17 FF CE 00 00 BD 17 89 CE
1610  15 30 BD 17 D4 BD 16 D9 BD 16 CE BD 16 E5 CE 01
1620  40 08 A6 00 81 59 27 07 8C 01 FF 26 F4 20 D1 CE
1630  15 49 BD 17 D4 BD 16 D9 BD 16 CE 7F 17 FF CE 01
1640  00 BD 17 89 CE 00 FF 08 A6 00 81 07 27 08 81 20
1650  26 F5 86 07 A7 00 CE 15 80 BD 17 D4 CE 01 00 BD
1660  17 D4 BD 16 CE BD 16 E5 CE 01 40 08 A6 00 81 59
1670  27 07 8C 01 FF 26 F4 20 B6 CE 02 00 A6 00 81 20
1680  27 08 08 8C 14 FF 26 F4 20 24 08 DF 38 DF 36 CE
1690  00 FF 08 8C 01 04 27 25 DF 3A A6 00 DE 36 A1 00
16A0  27 04 DE 38 20 D6 08 DF 36 DE 3A 20 E5 01 CE 15
16B0  B0 BD 17 D4 CE 01 00 BD 17 D4 7E 16 0F DE 38 09
16C0  A6 00 81 07 26 F9 08 BD 17 E0 7E 16 0F 01 CE 15
16D0  F8 BD 17 D4 BD 19 56 39 08 CE 00 80 A6 00 81 07
16E0  27 F5 7E 16 F7 8D 09 7F 17 FF CE 01 41 7E 17 89
16F0  CE 01 40 4F 7E C0 7D BD 19 56 08 20 DF 01 01 39

1700  DF 0A 37 C6 08 F5 80 12 26 FB 8D 6C F5 80 12 26
1710  F4 86 05 97 0C 8D 5F 44 F5 80 12 27 02 8A 80 7A
1720  00 0C 26 F1 8D 50 F5 80 12 27 DA 44 44 44 33 DE
1730  0A 39 8D CC 81 1F 26 04 97 11 20 F6 81 1B 26 05
1740  7F 00 11 20 ED 81 08 27 16 81 02 27 12 81 04 27
1750  0E 4D 27 08 7D 00 11 27 04 8A C0 20 02 8A 40 DF
1760  1A CE 1F 00 A1 00 27 07 08 8C 1F 60 26 F6 09 DF
1770  08 DE 1A 96 09 39 8D 00 CE 04 E2 09 26 FD 39 01
1780  7F 17 FF BD 19 A4 CE 02 00 8D A7 81 2F 26 2B 09
1790  7C 17 FF 8D 9D 81 2F 27 F6 36 86 1B BD 19 BA 86
17A0  29 BD 19 56 32 81 40 23 07 36 86 1F BD 19 BA 32
17B0  A7 00 08 7A 17 FF 26 DB 20 03 A7 00 08 8C 17 00
17C0  27 04 81 0D 26 C3 86 07 09 A7 00 4F 01 39 BD 19
17D0  A4 CE 15 00 A6 00 81 07 27 F1 BD 19 56 08 20 F4
17E0  A6 00 81 24 26 03 7E 17 F3 81 07 27 DE BD 19 56
17F0  08 20 ED DF 30 BD 16 D9 DE 30 20 F4 01 01 01 00

```

TEXT LOADER. (1700 - 17E0) RUN from 1780

Same as above except for:

```

17C0  27 04 81 07 26 C3 86 3F B7 80 13 7E 1C 00 BD 19
17D0  A4 CE 02 00 A6 00 81 07 27 EC BD 19 56 08 20 F4

```

\*\*\*\*\*

LINDSAY R. FORD,

Remember the old word game you used to play at school when the teacher was not looking? Well, you can now play it on your 'DREAM'.

Two players are required, a 'Hangman' and a 'Victim'. The Hangman thinks of a word of 5,6,7 or 8 letters length and then presses the key corresponding to the number of letters. The DREAM will display a square for each letter and the letter count on the right of the screen. He then programs the word into the memory, using either an ASCII keyboard, or the 'T.V.Type-writer' code using the Hexadecimal keyboard. If you have forgotten what the 'T.V.Type-writer' code is, here is a reminder.

A - 0A	G - 10	M - 16	S - 1C	Y - 22
B - 0B	H - 11	N - 17	T - 1D	Z - 23
C - 0C	I - 12	O - 18	U - 1E	
D - 0D	J - 13	P - 19	V - 1F	
E - 0E	K - 14	Q - 1A	W - 20	
F - 0F	L - 15	R - 1B	X - 21	

As each letter is successfully entered, the letter count reduces by one. A programming error causes a 'beep' and a cross is displayed. The rejected letter can then be repeated without re-starting the program. (Bad spelling excepted.)

At this stage, the victim, (who has had his back turned), has his go. He tries to guess the word by keying in the letters he thinks are in it. With each mistake he will be progressively 'hanged' until, when he has made as many errors as there are letters in the word, his existence is terminated! As correct letters are keyed in these will be displayed in their proper positions in the word. A word guessed correctly wins a last minute 'reprieve'. If you fail to guess the word, it will be displayed after the victim has been 'hung'.

0080	0000	0000	0013	1211	7040	5050	7050	5070
0090	5050	7020	2020	7010	1010	5070	5050	6050
00A0	5040	4040	4070	F8A8	A8A8	A870	5050	5050
00B0	7050	5050	7070	5070	4040	7050	5070	2070
00C0	5070	6050	7040	7010	7070	2020	2020	5050
00D0	5050	7050	5050	5020	A8A8	A8A8	5050	5020
00E0	5050	5050	7020	2070	1020	4070	8E88	8C88
00F0	EEEE	4444	4444	EE8A	CE8C	EAE7	81E2	20E2

0200	00E0	23BE	23AC	6A31	6B08	23A4	F40A	4405
0210	1222	4406	1222	4407	1222	4408	1222	2352
0220	1200	2370	23BE	2342	6000	6A08	6B19	23A4
0230	7001	5400	1220	2296	A07F	F31E	F055	2364
0240	3300	1236	236E	6900	233E	23AC	7901	3911
0250	1248	6700	8240	6D1A	6C09	4408	6C01	6501
0260	2296	8600	A07F	F21E	F065	4000	1272	9600
0270	2374	72FF	7C08	3200	1264	3500	22C0	3708
0280	4300	128E	1254	2342	22C0	3708	1288	6E64
0290	FE18	2342	1400	F10A	4100	12A8	4101	12A6
02A0	3102	12BC	710F	710F	F00A	8014	6109	8105
02B0	3F00	12BC	6123	8105	4F01	00EE	2352	1296
02C0	7701	8070	8074	B2C6	12D8	12E0	12F6	1300
02D0	130A	1318	131E	1330	6A0C	6B17	230E	12F0
02E0	6A18	6B00	233A	7B01	3B17	12E4	4407	00EE
02F0	4408	00EE	12C0	6A16	2302	3405	00EF	12C0

# HANGMAN (Cont)

0300	6A19	6B15	A3C4	DAB2	133E	6A19	6B00	233A
0310	7A01	3A25	130E	00EE	6A19	6B01	1304	6B01
0320	6A20	A3C5	FB1E	233C	7B01	3B0C	1322	00EE
0330	6A20	6B07	A3D1	DABF	00EE	A2AA	DAB1	6E03
0340	1344	6E32	FE15	FE07	3E00	1346	6E02	FE18
0350	00EE	2358	6E32	FE18	A3FB	6B10	6A33	DAB5
0360	7A08	00EE	2368	73FF	6B09	F329	135C	2368
0370	8340	1368	8900	6110	8915	3F01	138E	8190
0380	8114	8114	8194	A088	F11E	DCD5	1396	7C01
0390	F029	DCD5	7CFF	A07F	F21E	6000	F055	6500
03A0	233E	1364	A3E0	DAB7	7A08	133E	6B09	A0EC
03B0	6005	6A08	235E	F01E	3A28	13B4	00EE	A3E7
03C0	6B03	13B0	C0C0	1010	1010	2844	8282	8244
03D0	3828	0010	0000	107C	5454	1038	2828	2844
03E0	FEFE	FEFE	FEFE	FEAE	AAEA	AAAE	A9A9	A9A9
03F0	F9F7	5557	5555	7555	5752	52A0	A040	A0A0
0400	8240	6D1A	6C09	4408	6C01	A07F	F21E	F065
0410	3000	2374	7C08	72FF	3200	140A	6E96	2342
0420	1200							

If you only have a 1K system, leave out 0400 - 0422, and change 0294 to 1200.

If you are going to use your ASCII keyboard instead of the 'T.V. Typewriter' code, make the following alterations to the program.

0290	FE18	2342	1400	07F0	70C9	12AC	0000	0000
02A0	0000	0000	0000	0000	0000	0000	8109	8105

\*\*\*\*\*

## ERRATA.

Lindsay Ford has advised us of two errors, in the 'DREAMPLIFIER' article in the June issue.

✓ 1. Veroboard Layout : The explanation at the bottom should read "viewed from component side"

✓ 2. Troubleshooting tips, par.2; should be "--the ceramic capacitor on Pin 6 of the LM380---"

And from D. Trabucco, "Close inspection of Chip-8 Block Move program in Issue No.10 has revealed two major errors not consistent with original program listing.

✓ 00A6 should be A7, not E7.

✓ 00B1 should be A0, not E0.

The program will not function correctly as is."

Thank you both for pointing these out to us.

Garry.

\*\*\*\*\*

## ADVERTISING

If you would like some help, can offer some help, have something to sell, or would like to buy something, send it in to us with a fee of \$1-00, and we will print it in two newsletters. THIS OFFER ONLY APPLIES TO PRIVATE ADVERTISERS and we would ask you to keep them reasonably short, something like the ones below. Commercial enterprises who wish to advertise in the DREAMER are invited to contact us for details of rates, etc.

+++++

FRED LEVER, SNR is happy to discuss problems after hours on [REDACTED] or send S.S.A.E. with description of problems to [REDACTED] [REDACTED] If repair is required on DREAM send (P.C.B. only preferred) to above address. With faulty expansions, send BOTH P.C.B.'s as problem may be on main board. A fee of \$33-00 will cover post and normal repairs, exceptional repairs may cost more, but owner will be advised BEFORE proceeding.

If you have a DREAM or an EXPANSION KIT partly built, I will complete it for you, price will be quoted on individual jobs.

+++++

A SOUTH AUSTRALIAN DREAM USERS GROUP has been formed for the purposes of group discussion, program sharing, fault finding, hardware development, etc. The group meets on the FOURTH MONDAY of each month in the facilities of the REGENCY PARK COMMUNITY COLLEGE SCHOOL OF ELECTRONICS. (Enter from Days Road.) The next meeting will be held in Room C204 at 7.00p.m., and will begin with a lecture on Chip-8 programming.

All interested, whether DREAM owners or not, are invited to attend. For details, contact MILTON COLLINS, 46 0311 (day), 268 2424 (evenings).

# ANNOUNCING THE BIG ONE!

➡ Wondering what to do with all that space in your expansion board memory? ----- Why not fill it with Dream Pontoon? ⬅

Dream Pontoon is that exciting card game Pontoon 21 translated into Chip 8. It has 4K of powerful logic that not only makes it a damned good player, but also results in a versatile game that can be played for hours without becoming boring.

- IT FEATURES:
- \* Memory mapped card deck for absolute realism
  - \* Fully floating player options (anything you can do your Dream can do better!)
  - \* Probability based betting routines give high skill
  - \* Automatic level of play settings and checksum

This is the biggest and most intelligent programme available for the Dream. To hell with Level II Basic, load this one up and see how smart a Dream can be.

Cassette and Instructions \$17.50

Fully Commented Listing \$7.50 Extra

Dream Rummy is an easy game to learn and great fun to play. High intelligence, memory mapped card deck, manual checksum and level of play settings give it reliability and realism. A bonus game of "Strip Jack Naked" is supplied free with this game - both require 2K, although "Strip Jack Naked" can be cut to 1K.

Cassette and Instructions \$10.00

Commented Listing (Rummy only) \$5.00 Extra

\* DREAMCARDS

8 Highland Court, North Eltham 3095 Vic.  
SOFTWARE THAT THINKS

FRED LEVER (JNR),  
[REDACTED]

The program shows a person (symbolising you) at the Left Hand Side of the screen and four lanes of randomly moving traffic spreading out to the right. There is only one key to use; KEY 6 = RIGHT.

Once you have started, there is no going back - so if you see a car or truck bearing down on you, Tough Luck! If you are hit 10 times, you lose. If you pass the fourth car and get to the extreme Right Hand Side of the screen, you have won.

At the end of the game, any key except F will restart the program. Keying F will return you to the CHIPOS monitor.

```

0200 6A00 A2F0 600A C1FF 001F A2FF 621A C3FF
0210 023A A309 6425 C5FF 045C A315 6633 C7FF
0220 067B A320 6800 690A 089B CB03 A2F0 D01F
0230 81B4 D01F CB03 A2FF 023A 83B5 023A CB03
0240 A309 045C 85B4 045C CB03 A315 067B 87B5
0250 067B A320 6B00 6C06 ECA1 6B02 089B 88B4
0260 089B 6D01 FD15 FD07 3D00 1266 4838 1290
0270 4A0A 1290 3F01 137A 00E0 6B18 6D0E 02E4
0280 0BD5 7B04 7E01 3B28 127E 7A01 6E00 1372
0290 00E0 7E04 A2ED FA33 F265 6410 6500 F129
02A0 0455 7404 F229 0455 6400 6500 02E4 0455
02B0 7404 7E01 340C 12AC 641C 02E4 0455 7404
02C0 7E01 3434 12BA 3A0A 7E0B 6400 6510 02E4
02D0 0455 7404 7E01 342C 12CE F00A 400F F000
02E0 00E0 1200 963E CE03 2A7E C198 3900 0100
02F0 FFFF 7EFF FF7E 7E7E 3C3C 7EFF FFFF 7EE0

0300 E040 40E0 E040 40E0 E0FC FCFC 8484 FCFC
0310 FCFC 84FC FC18 BDFF BD3C BDFF BD24 FFFF
0320 3838 3810 FEB8 BAB8 AA28 2800 B7DA E92E
0330 492E 8248 B7DA E92E 492E 492E B7DA E92E
0340 B6DE F64E E7CE 4BDA F6DE F6DA 0024 BBDE
0350 F3CE 0000 D6DC F3CE B7DE D6DC 4BDA F6DE
0360 F6DA 0000 F24E BBDE F6DE E7CE E7CE F3CE
0370 D6DC 6C20 FC18 00E0 1202 6E00 122A

```

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MEMOD II

( 0080 - 0100 )

A. CLEARY,  
[REDACTED]

This program is similar to the normal FN '0', MEMORY MODIFY. (MEMOD) GO from 0080, then ENTER STARTING ADDRESS MINUS 8. E.G. For 0200, enter 01F8. Eight Bytes (4 Chip-8 statements) will appear in the display. To write data into RAM, a 4 digit number is entered and the address will increment automatically. The FN key is used to backstep through the memory. The program is relocatable without modification.

```

0080 CE 01 08 4F BD C0 7D BD C3 90 97 1A BD C3 90 97
0090 1B BD C0 79 8D 2A 8D 2B 8D 29 8D 27 BD C2 04 4D
00A0 2B 10 BD C3 92 A7 00 08 BD C3 90 A7 00 08 20 04
00B0 09 09 09 09 09 09 09 09 09 09 09 09 DF 1A 20 D1
00C0 47 97 2F 86 08 97 2E CE 00 1A 8D 1B 08 8D 18 86
00D0 0C 9B 2E 97 2E 8D 0E 8D 08 8D 0A 86 09 9B 2F 97
00E0 2F 08 DF 1A 39 DE 1A A6 00 D6 2F D7 0F 36 44 44
00F0 44 44 BD C3 D2 8D 04 32 BD C3 D2 96 0F 97 2F 39

```

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D. ROBERTSON,

This game uses the Joystick as described in the November issue.

The object is to steer your way around the track as skillfully as possible to gain the highest number of laps in the time available.

To begin the game press any button from 1 to 7 to set the top speed of the vehicle, with 1 being the fastest. You must then centre the joystick and then move it in the direction you wish to travel. The vehicle will slowly accelerate until it reaches the speed selected at the beginning of the game. You must then steer the vehicle around in a clockwise direction to gain as many laps as you can before the timer reaches the top right hand corner. If you hit the sides of the track, you will be penalised by having to accelerate again from the lowest speed.

At the end of the game, press any button to reset everything and start again. To lengthen the duration of the timer, change the data at 0267 to a larger value.

0080	DAB2	7A01	5A00	1080	00EE	DAB1	7B01	5B00
0090	108A	00EE	8080	0028	7828	0050	2058	1058
00A0	2050	0020	7020	7020	7020	00A0	F0A0	0050
00B0	20D0	40D0	2050	00C0	A30A	FE33	F265	600F
00C0	6310	F229	D035	600B	F129	D035	00EE	DAB5
00D0	8AB5	8B95	DAB5	1320	7401	8050	F015	F007
00E0	3000	10DE	3405	1334	5560	75FF	1332	03BA
00F0	1378	F018	F00A	00E0	1200	B201	017F	1001
0200	03A2	1290	063B	F780	1306	61F7	8012	063F
0210	F780	130E	0219	DF00	397A	0020	7A00	217D
0220	8012	7C00	1696	1684	0327	013B	86FF	973C
0230	973D	7F80	1286	21B7	8012	064A	B680	1246
0240	4624	037C	003C	4624	037C	003D	5A26	ED96
0250	3C80	0A2C	014F	973C	963D	800A	2C01	4F97
0260	3D7D	00FF	2716	8619	7C00	FE91	FE26	10DE
0270	FBD6	FDEA	00E7	0054	2506	D7FD	7F00	FE3B
0280	088C	0108	2604	7C00	FF3B	0680	DFFB	20EA
0290	6A1D	6B1A	A094	6028	2080	6A1D	6B1C	2080
02A0	6A31	6B14	DAB2	6A00	6B1E	6040	2080	A095
02B0	6A00	6B01	2080	6A0A	6B0E	6014	2080	6A0A
02C0	6B16	2080	6B13	6032	2080	6A31	6B16	6034
02D0	2080	6A2D	6B09	6035	2080	6A09	6B09	6017
02E0	208A	6A34	6B0A	6018	208A	6A23	6B02	600C
02F0	208A	6A1C	6B02	208A	6A13	6B0F	6016	208A
0300	6B02	6008	208A	A0B7	6A00	6B02	601E	208A
0310	6A3E	6B02	208A	6E00	2088	6A13	6B18	03D4
0320	A096	DAB5	F60A	2384	03B1	6700	6004	F018
0330	6509	6400	A0FE	F165	4102	10F2	3A2B	1348
0340	6010	80B2	3010	6701	3701	1354	3A14	1354
0350	2392	6700	8180	8290	03BA	2378	4000	1364
0360	8810	8920	03B5	DAB5	8A84	8B94	03DD	03B5
0370	DAB5	3F00	100E	10D8	6000	3800	00EE	4900
0380	6001	00EE	20EE	3001	1384	20EE	3000	138A
0390	00EE	6110	81B2	4100	00EE	20B8	7E01	20B8
03A0	00EE	CE01	00DF	FB86	8097	FD7F	00FF	7E02
03B0	047C	00FF	39DE	F9DF	2639	963C	8D09	D738
03C0	963D	8D03	D739	39C6	FF80	102F	065C	8020
03D0	2F01	5C39	CE00	96DF	F939	0000	0106	9696
03E0	384D	2D07	069E	4D27	1106	AA96	394D	2707
03F0	CB04	4D2D	02CB	04D7	FA39	9639	4D26	EC39

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J. PANOS,

Before you start to play, give yourself a 'bank' by setting the counter shown on the screen. You can only set it when it is at zero, (0000), by keying in a three digit decimal number. E.G. Key 0,5,2, to set the counter to 52. Keying 'C' at any time will reset the counter to zero.

Play may now begin. Keying 'F' will simulate the spinning of all four reels and each reel, starting from left to right, will display a symbol at approximately half second intervals. At this stage, the counter will have decremented by one, while any winning combinations (including all Jackpots) will then increment the counter.

Keying 'F' when counter is at zero will not spin the reels.

The pays are as follows:-

9,-,-,-.	PAYS	2	K,K,K,-.	PAYS	18
9,9,-,-.	"	5	K,K,A,-.		18
			K,K,K,K.		50
10,10,10,-.		10	K,K,A,K.		50
10,10,A,-.		10			
10,10,10,10.		50	A,A,A,-.		120
			-,A,A,A.		120
J,J,J,-.		10			
J,J,A,-.		10	A,A,A,A.		1,000
J,J,J,J.		50			
J,J,A,J.		50	7,7,7,-.		120
			-,7,7,7.		120
Q,Q,Q,-.		14			
Q,Q,A,-.		14	7,7,7,7.		1,000
Q,Q,Q,Q.		50			
Q,Q,A,Q.		50			

0600

0080	0001	0B00	0E10	1704	0B02	0100	7E66	7E06
0090	7E5E	5252	525E	0E04	0464	7C7E	4252	4A7E
00A0	0466	6C78	6C66	3C66	667E	667E	0600	1830
00B0	A08C	10CC	A091	10CC	A096	10CC	A09B	D456
00C0	10CE	A0A1	10CC	A0A6	10CC	A0AB	D455	740B
00D0	3437	12D4	6900	3A16	10E0	4B0C	7903	7902
00E0	4C02	10E8	3C0B	10F6	3A02	10F6	3B12	10F6
00F0	4D18	7928	790A	4C02	10FE	3C11	13A2	1394

0200	6300	6200	6100	6000	6800	00E0	6500	640B
0210	A23B	D451	740B	3437	1210	7501	3509	120E
0220	300A	1228	6000	7101	310A	123A	6100	7201
0230	320A	1252	6200	7301	1252	30FF	1252	6009
0240	71FF	31FF	1252	6109	72FF	32FF	1252	6209
0250	73FF	6418	6519	F329	22C4	F229	22C4	F129
0260	22C4	F029	22C4	4800	1278	4801	120A	4802
0270	12AC	F618	3900	12BC	6E0F	3300	1298	3200
0280	1298	3100	1298	3000	1298	F20A	420F	128A
0290	F10A	F00A	6800	120A	CF1F	EE9E	12A4	70FF
02A0	6801	120A	6E0C	EE9E	1278	1200	3EAA	12B8
02B0	7101	6620	6803	1220	7001	12B4	79FF	6802
02C0	6610	1220	D455	7404	00EE	A080	F355	A084
02D0	F765	12D6	F618	6F30	FF15	FF07	3F00	12DA
02E0	7701	4701	8900	4702	8910	4703	8920	4704
02F0	8930	CF1F	7F01	7901	4919	6901	3F20	12F4



# FULLY AUTOMATIC FOUR WHEEL POKER MACHINE (Cont)

0300	4701	1370	4702	1340	4703	1320	8090	8390
0310	4004	10B8	4006	1006	4008	10B0	4000	100A
0320	4014	10C2	4018	10B4	7001	1310	8090	8290
0330	4002	<del>10C6</del>	4005	1002	4008	10B4	4011	10B8
0340	4016	10B0	4018	100A	7001	1330	8B90	8190
0350	4B03	10C2	4B05	100A	4B00	10B0	4B12	10B4
0360	4B14	10C6	4B16	10B0	4B18	10B8	7B01	1350
0370	8A90	8090	4A02	10B4	4A08	10B0	4A00	10C2
0380	4A0E	100A	4A14	10B8	4A16	10B0	4A18	10C6
0390	7A01	1374	3A14	13A2	3B18	13A2	4004	7928
03A0	790A	4002	13AA	3016	13B8	3A08	13B8	3B16
03B0	13B8	4008	7924	790E	4002	1300	3005	130E
03C0	3A00	130E	3B03	130E	4014	7920	7912	3B14
03D0	130E	3002	130E	4006	7978	4A18	7978	<del>3B05</del>
03E0	13EE	3018	13EE	4000	7978	4A0E	7978	<del>3B08</del>
03F0	13F6	6EAA	6964	A084	F355	A080	F365	1272

\*\*\*\*\*

## THE BLACK HOLE

( 0200 - 0400 )

GRAEME V. SAMWAYS.

Each location in the universe is either a Black Hole, or a Star.  
The aim of the game is to obtain a central Black Hole surrounded by all stars  
in a minimum number of turns.

To shoot a star, press the corresponding number ( 1 to 9 ), on the  
keyboard. When star is shot, it will turn into a Black Hole and all other  
states in its galaxy are complemented.

BEWARE: If your universe becomes all Black Holes, you lose and are  
given a score of 99.

0200	00E0	6E00	A2E9	67FF	6801	228E	6900	6A00
0210	A2E4	228E	225A	4E63	12D2	3900	1222	4A00
0220	1200	3A00	122A	49FF	12D2	A2EE	2270	4100
0230	1220	71FF	8114	8114	F11E	F365	6402	F418
0240	8092	3000	1240	81A2	4100	122A	8720	8830
0250	A2E4	228E	225A	7E01	1214	6520	6608	A3FD
0260	FE33	F265	F129	D565	7505	F229	D565	00EE
0270	6109	E1A1	00EE	4100	00EE	71FF	1272	60FF
0280	61FF	8035	8125	8202	8132	8211	00EE	8370
0290	8290	227E	8920	8380	82A0	227E	8A20	6409
02A0	6610	6510	4400	00EE	4405	1206	4406	12B4
02B0	3403	12B8	76F8	6510	8774	4F00	1200	D565
02C0	75F8	74FF	12A4	4800	1200	12BE	225A	6E63
02D0	225A	6002	F018	6F10	FF15	FF07	3F00	12DA
02E0	12D2	01FF	103E	3E3E	1014	2200	2214	0100
02F0	0B01	0200	0700	0400	1601	0800	2900	0001
0300	5A01	1000	9400	20C0	6801	4000	E000	8000
0310	D001	00D4						

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## EPROM EXPANSION

R. Schmidt,  
[REDACTED]

By making a few minor changes, the 2708 EPROM used in the DREAM 6800 can be replaced with a 2716 with the following benefits.

1. The +12V supply can be dispensed with as the 2716 does not need it and it isn't used anywhere else on the board.
2. An extra 1016 bytes of EPROM which is handy for expanding the DREAM 6800 monitor or the CHIPOS interpreter, or it can be used for often used routines such as :- DEBUG, BLOCK MOVE, OFFSET CALCULATOR, MEMORY DISPLAY, MEMORY TEST, etc.

### Changes Required

1. Take pin 21 of EPROM from -5V to +5V.
2. Take pin 19 of EPROM from +12V to A10 (pin 19) of the 6800. (Note that +12V is not required anywhere else on the board).
3. Load a 2716 as follows -

C000-C3FF	CHIPOS
C400-C7F7	Available for USER
C7F8-C7FF	Mirror of CHIPOS TRAPS (C3F8-C3FF) ***

\*\*\*This is required because of incomplete address decoding on the DREAM 6800.

\*\*\*\*\*

### MODIFICATION TO ALIEN

Entire Game  
(0080-033B)  
Edward Perati,  
[REDACTED]

I was very impressed by the Alien Game written by K. Bolch of Warragul in the November newsletter, but found with the additional memory available, it would have been good to see some form of score keeping, as the score vanishes from the screen soon after the game finishes.

After disassembling the program, I wrote a modification which will show your game score in the centre of the screen at the conclusion of the game and maintain a statistical record of the highest score in the game series in the bottom right hand corner.

Add the following program after loading Alien:

0300	F029	6420	D455	F129	6424	D455	A338	F265
0310	6A30	6B18	A02F	F233	F029	DAB5	6A34	F129
0320	DAB5	8420	6F00	8435	3F00	1332	8230	A338
0330	F255	F00A	00E0	00EE	0000	00		

In location 00F0 put in 2300 then play the game as normal.

\*\*\*\*\*

# CONTENTS

## WITH LIST OF GAMES AND LIST OF TEACHING PROGRAMS

ED. FARRELL.

### NEWSLETTER NUMBER ONE, SEPTEMBER, 1980

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>PROGRAMS</b>					
Barrier	1	3	0200	02D0	
Bounce	1	4	0090	0300	
Framed Random Picture, Mark One and Two	1	5	0080	0260	
Life	1	6	0080	0240	
Sub	1	7	0200	0400	
Memory Display	1	9	0080	0100	
<b>TEACHING PROGRAMS</b>					
Machine Code Sub Routines					
1. Shift Variable	1	10	0000	0000	
2. 1200Hz Tone	1	10	0000	0000	
<b>MODIFICATIONS</b>					
Secret Number (see Electronics Australia)	1	10	0298	02EB	
<b>PROJECT</b>					
1 to 5K Memory Expansion	1	11	0000	0000	

### NEWSLETTER NUMBER TWO, OCTOBER, 1980

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAMS</b>					
How to use Chipos — Part One	2	3	0000	0000	
1. Goto	2	3	0000	0000	
2. Computed Goto	2	3	0000	0000	
3. Goto Subroutine	2	3	0000	0000	
4. Return from Subroutine	2	4	0000	0000	
How to run Machine Code Programs	2	14	0000	0000	
1. Tone 1					
2. Tone 2					
3. Tone 3					
<b>ERRATA</b>					
1 to 5K Memory Expansion (No.1, p.11)	2	4	0000	0000	
<b>TEACHING PROGRAMS</b>					
Binary-Hexadecimal Quiz	2	6,7,8	0200	0300	
<b>PROGRAMS</b>					
Acey Duecy	2	9	0200	0400	
Mine Field	2	10	0200	0400	
Mine Field — Small	2	11	0200	0400	
One Check	2	12	0200	0400	
Spiral Trial	2	13	0200	0400	
<b>IDEAS</b>					
Led Indicators	2	14	0000	0000	
Heatsink	2	15	0000	0000	
		16	0000	0000	

**NEWSLETTER NUMBER THREE, NOVEMBER, 1980**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAMS</b>					
How to use Chipos — Part Two	3	3	0000	0000	
5. Skip	3	3	0000	0000	
6. Skip	3	3	0000	0000	
7. Skip	3	3	0000	0000	
8. Skip	3	3	0000	0000	
9. Skip	3	3,4	0000	0000	
10. Skip	3	4	0000	0000	
Kaleidoscope	3	5 to 8	0080	0400	
<b>PROGRAMS</b>					
The Snake	3	9	0080	0400	
Three Reel Video Poker Machine	3	11,12	0080	0400	
Alien	3	12	0080	0300	
Tic Tac Toe	3	13	0200	0352	
<b>PROJECT</b>					
Joystick Controller	3	15 to 19	0200	0300	
<b>ERRATTA</b>					
Mine Field (No.2, p.11)	3	19	0000	0000	
Binary Hexadecimal Quiz (No.2, p.6)					
<b>IDEAS</b>					
Keyboard Layout	3	24	0000	0000	
Shifted Display	3	20	0000	0000	
Cheap Colour	3	2	0000	0000	
A Hot 6802	3	2	0000	0000	

**NEWSLETTER NUMBER FOUR, DECEMBER 1980**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAMS</b>					
Alpha Display Message	4	1	0300	0400	
How to use Chipos — Supplement					
Generalisation of Instruction	4	7	0000	0000	
<b>PROGRAMS</b>					
The Snake (Modification)	4	4	0300	0400	
Alpha Display	4	5,6	0080	0400	
UFO Invader,	4	8	0200	0400	
Life — Larger and Faster (Modification)	4	9	0080	0400	
Space Battle	4	10	0200	0400	
Bouncey Bouncey	4	11	0200	0400	
Missile Attack	4	12	0200	0300	
Video Lotto Random Number Selector	4	12	0200	0300	
Etch-A-Sketch	4	13	0200	0300	
Space War (Modification)	4	13	0080	0400	
Memod Mod	4	15	0080	0100	
Block Move	4	15	0200	0224	
<b>IDEAS</b>					
Chipos Programs longer than 4K	4	16	0000	0000	
Sound of the Dump	4	17	0000	0000	
<b>Solutions to Common Problems</b>					
Display	4	18	0000	0000	
Tape Input/Output	4	18	0000	0000	
Led (Modifications)	4	18	0000	0000	

CONTENTS. (Cont)

**NEWSLETTER NUMBER FIVE, JANUARY, 1981**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAMS</b>					
How to use Chipos — Part Three					
Digital Logic	5	4 to 8	0200	02A0	
<b>PROJECTS</b>					
JR Expansion Board	5	9,10	0000	0000	
Upated Power Supply	5	10,11	0000	0000	
Invader Control	5	13,14	0000	0000	
<b>REVIEWS</b>					
Dream Invaders	5	13	0000	0000	
<b>PROGRAMS</b>					
Arrow Golf	5	15	0080	0400	
Bioplot	5	16,17	0080	0400	
Nim	5	17	0200	0400	
Lunar Lander	5	18	0080	0400	
Editor	5	20	0080	0170	

**NEWSLETTER NUMBER SIX, FEBRUARY, 1981**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAM</b>					
How to use Chip 8 — Part Four	6	3,4	0000	0000	
<b>REVIEW</b>					
Dreamsoft	6	6,7,8	0000	0000	
<b>PROGRAMS</b>					
Alpha Display Error Erase	6	5	0000	0000	
Kalah	6	9	0200	0400	
Simple Rubout	6	10	0080	0400	
Parachute Mission	6	11	0200	0400	
Morse Code Practice Routine	6	12	0200	0340	
<b>PROJECTS</b>					
How to interface a Baudot Teleprinter	6	14	0400	04FF	
Joystick (Modification)	6	15	0200	0300	
Load Ram with "Whatever"	6	15	0200	0212	
Change Start Address	6	16	0080	009A	
<b>ERRATTA</b>					
Chipos — Part Three (No. 5, p.5)	6	2	0000	0000	
<b>PROBLEMS</b>					
Modulator	6	8	0000	0000	

**NEWSLETTER NUMBER SEVEN, MARCH 1981**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAMS</b>					
8 Bug	7	2,3,4	0300	03DE	
How to use Chip 8 — Part Five	7	5,6	0000	0000	
<b>PROJECT</b>					
Operating Dreamsoft EPROM	7	8,9	0000	0000	

# CONTENTS. (Cont)

## **NEWSLETTER NUMBER SEVEN, MARCH 1981 ( CONT )**

### **PROGRAMS**

Opus 1	7	7	0200	0300
Depth Charge	7	10	0200	0400
Blackjack	7	11,14	0080	0400
Math Tables	7	12	0200	0400
Super Sub	7	13,14	0200	0500

### **PROBLEMS**

Vertical Sync	7	15	0000	0000
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### **ERRATTA**

Editor (No.5, p.20)	7	9	0000	0000
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## **NEWSLETTER NUMBER EIGHT, APRIL, 1981**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAMS</b>					
Precognitive Dreams	8	3,4	0200	030F	
How to use Chip 8 — Part Six	8	5,6,7	0000	0000	
<b>PROJECTS</b>					
Directional Paddle	8	7,8	0000	0000	
Dream Sound Effects Generator	8	10 to 17	0000	0000	
<b>PROGRAMS</b>					
Redirected Snake (Modification)	8	8,9	0000	0000	
Simple Simon	8	18	0200	0400	
Tortoise	8	19	0080	0400	
Rescue Mission	8	20,21	0080	0400	
Ping Pong	8	21	0200	0400	
The Well-Hexadecimalised Keyboard	8	22,23	0000	0000	

## **NEWSLETTER NUMBER NINE, MAY, 1981**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>TEACHING PROGRAM</b>					
How to use Chip 8 — Part Nine	9	2 to 5	0200	0280	
Absent-Minded Dog	9	6,	0200	02CF	
6800 Assembly Language	9	8,9	0000	0000	
Super 8 Bug	9	9 to 11	0600	0700	
<b>ERRATTA</b>					
Three Reel Poker Machine (No.3, p.11)	9	11	0000	0000	
<b>PROJECT</b>					
Eight Direction Joystick	9	12 to 14	0200	0275	
<b>PROGRAMS</b>					
Sub (Modified)	9	13	0230	02C0	
Video Bingo	9	15,16	0080	0400	
Morse Teacher	9	16	0200	0300	
Race Meeting	9	17	0080	0400	
Day of the Week Calculator	9	18	0080	0400	
Hangman	9	19	0080	0400	
Space Invaders	9	20,21	0200	0600	
More Opus	9	21	0230	0320	

**NEWSLETTER NUMBER TEN, JUNE, 1981**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>PROJECTS</b>					
Dream Connections	10	4	0000	0000	
The 6821 PIA	10	5,6,7	0000	0000	
The Dreamplifier	10	8,9	0000	0000	
<b>PROGRAMS</b>					
Select a program on tape	10	3	0080	00F8	
Chip 8 Disassembler	10	10,11	<b>0400</b>	<b>0710</b>	
Improvements to the Alpha Display program	10	12,13	0200	0342	
Chip 8 Block Move	10	14,15	0080	0100	
Revised version of printer program for Creed 75 Teleprinter	10	17	<b>0400</b>	<b>0500</b>	
Astro-Fighter	10	18	0080	0400	
Gold Fever	10	19	0080	0400	
Iago for Two	10	20	0200	0400	
Iago for One	10	21	0080	0400	
Dice Game	10	21,22	0080	0400	
Maths Addition for Beginners	10	22	0200	0400	
Motor Bike Game	10	23	0080	0400	
<b>IDEAS</b>					
A Long One	10	16	0000	0000	
<b>SURVEY</b>					
	10	1	0000	0000	

**LIST OF TEACHING PROGRAMS**

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
<b>Machine Code Sub Routines</b>	1	10	0000	0000	
1. Shift Variable					
2. 1200 Hz Tone					
<b>How to use Chipos — Part One</b>	2	3	0000	0000	
1. Goto	2	3	0000	0000	
2. Computed Goto	2	3	0000	0000	
3. Goto Subroutine	2	3	0000	0000	
4. Return from Subroutine	2	4	0000	0000	
<b>Binary-Hexadecimal Quiz</b>	2	6	0000	0000	
<b>How to run Machine Code Programs</b>	2	14	0000	0000	
1. Tone 1	2	14	0000	0000	
2. Tone 2	2	14	0000	0000	
3. Tone 3	2	14	0000	0000	
<b>How to use Chipos — Part Two</b>	3	3	0000	0000	
5. to 10. Skip	3	3	0000	0000	
<b>Kaleidoscope</b>	3	5	0000	0000	
<b>How to Use Chipos (Supplement)</b>	4	7	0000	0000	
Generalisation of Instructions	4	7	0000	0000	
<b>How to use Chipos — Part Three</b>	5	4	0000	0000	
Digital Logic	5	4	0000	0000	
<b>How to use Chip 8 — Part Four</b>	6	3	0000	0000	
<b>8 Bug</b>	7	2	0300	03DC	
<b>How to use Chip 8 — Part Five</b>	7	5	0000	0000	
<b>Precognitive Dreams</b>	8	3	0200	030F	
<b>How to use Chip 8 — Part Six</b>	8	5	0000	0000	
<b>How to use Chip 8 — Part Seven</b>	9	2	0200	0286	
<b>Absent-Minded Dog</b>	9	6	0200	0300	
<b>Super 8 Bug</b>	9	9	<b>0600</b>	<b>0700</b>	

## LIST OF GAMES

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	END	LOADED ON CASSETTE?
Barrier	1	3	0200	02D0	
Bounce	1	4	0090	0300	
Framed Random Picture					
Mark 1, Mark 2	1	5	0080	0260	
Life	1	6	0080	0240	
Sub	1	7	0020	0400	
Acey Duecy	2	9	0200	0400	
Mine Field	2	10	0200	0400	
Mine Field — Small	2	11	0200	0400	
One Check	2	12	0200	0400	
Spiral Trial	2	13	0200	0400	
The Snake	3	9	0080	0400	
Three Reel Video Poker Machine	3	11	0080	0400	
Alien	3	12	0080	0300	
Tic Tac Toe	3	12	0200	0352	
UFO Invader	4	8	0200	0400	
Space Battle	4	10	0200	0400	
Bouncey Bouncey	4	11	0200	0400	
Missile Attack	4	12	0200	0300	
Video Lotto Random Number Selectors	4	12	0200	0300	
Etch A Sketch	4	13	0200	0300	
Space War	4	13	0080	0400	
Arrow Golf	5	15	0080	0400	
Bioplot	5	16	0080	0400	
Nim	5	17	0200	0400	
Lunar Lander	5	18	0080	0400	
Kalah	6	9	0200	0400	
Simple Rubout	6	11	0080	0400	
Parachute Mission	6	11	0200	0400	
Morse Code Practice Routine	6	12	0200	0340	
Depth Charge	7	10	0200	0400	
Blackjack	7	11	0080	0400	
Math Tables	7	12	0200	0400	
Super Sub	7	13	0200	0500	
Simple Simon	8	18	0200	0400	
Tortoise	8	19	0080	0400	
Rescue Mission	8	20	0080	0400	
Ping Pong	8	21	0200	0400	
Video Bingo	9	15	0080	0400	
Morse Teacher	9	16	0200	0300	
Race Meeting	9	17	0080	0400	
Day of the Week Calculator	9	18	0080	0400	
Hangman	9	19	0080	0400	
Space Invaders	9	20	0200	0600	
Astro Fighter	10	18	0080	0400	
Gold Fever	10	19	0080	0400	
Iago for Two	10	20	0200	0400	
Iago for One	10	21	0080	0400	
Dice Game	10	21	0200	0400	
Math Addition for Beginners	10	22	0200	0400	
Motor Bike Game	10	23	0080	0400	