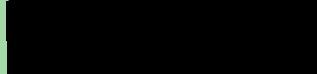


DREAMER N° 12

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.

Mail this coupon now

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 -----

DREAMER

No. 12

AUGUST, 1981.

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 CHIPPOS 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 6X0K(ey), where K is the Key involved. E.G. You may have:

0300	6A0C)	Look for key 'C'
	EA9E)	
	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)	Look for key 'F'
	EA9E)	
	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 4XNN instruction.

HOW TO CHANGE KEY FUNCTIONS (Cont)

In our example;	FO0A	Get key
	4003	If 3,
	7A01	Then add 1 to A
	4000	If 0,
	7AFF	Then add -1 to A

If the 4XXX (or 3XXX) instruction is NOT present, you will have to trace the program through until something similar occurs. I.E. A test is done on the inputed 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	F10H	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	ORLL M/C RT 07F0	Get an ASCII key
0298	70C9	V0 = V0 + C9	subtract 55(decimal)
029A	12AC	GO TO 02AC	(Remember that A in ASCII is 41(Hex), not 0A(Hex) as it is in T.V.Typewriter, so you must subtract the excess to make the figure returned to Variable 0 by the routine at 0700 equal
029C	0000	NOP	
029E	0000	NOP	
02A0	0000	NOP	
02A2	0000	NOP	
02A4	0000	NOP	

HOW TO CONVERT PROGRAMS (Cont)

02A6	0000	NOP	to the T.V.Typewriter code.
02A8	0000	NOP	Then, replace the rest of the
02AA	0000	NOP	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

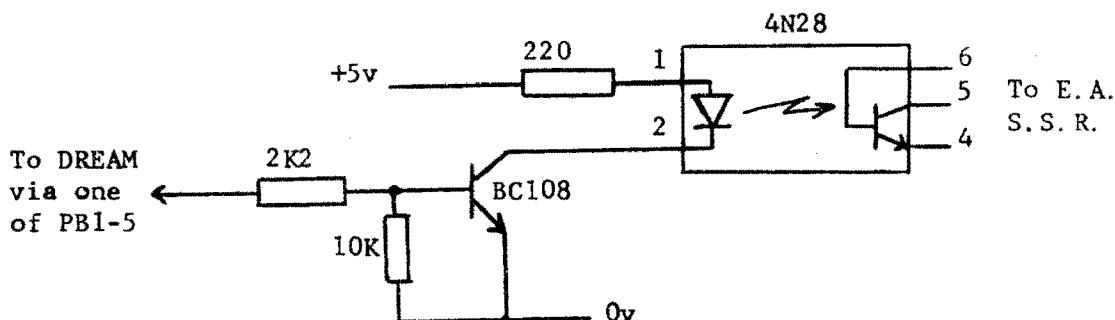
The program works by setting the predetermined PIA 1B lines HIGH when the ON time is reached, and all PIA 1B lines off, when the OFF time is reached. You choose the PIA lines as above, setting in Hex the bits corresponding to the lines you wish to control. (Remember that Bit 7 is an Input only.) The 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	7F01
0210	3D3C	1222	6000	7D01	3C18	1222	6E00	6100
0220	6000	0000	5C80	122E	5D98	122E	623C	6000
0230	5AC0	1250	5BD0	1250	0242	1250	067E	F790
0240	1239	0600	F780	1239	0000	0000	0600	0000
0250	6706	E7A1	1280	6706	E7A1	1280	6706	E7A1
0260	1294	6706	E7A1	129E	6706	E7A1	12A0	6706
0270	E7A1	12B2	6706	E7A1	12B0	1200	0000	0000
0280	7801	2818	1200	6800	1200	7801	3900	1200
0290	6900	1200	7A01	3A18	1200	6A00	1200	7B01
02A0	3B3C	1200	6B00	1200	7001	3C18	1200	6C00
02B0	1200	7D01	3D20	1200	6D00	1200	6E00	1200
02C0	6600	6700	A320	F833	2310	6710	A320	F933
02D0	2310	6600	6700	A320	FAB3	2310	6710	A320
02E0	FB33	3310	6610	6700	A320	FC73	2310	6710
02F0	A320	FF33	2310	6730	H320	FE33	2310	6800
0300	6534	F515	F507	3500	1304	00E0	1200	6A00
0310	4C14	F265	F129	0765	7708	F229	0765	9100
0320	6042	0000	61000	00000	0000	61000	18000	81000
0330	00000	00000						

BRUCE MITCHELL,
[REDACTED]

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.

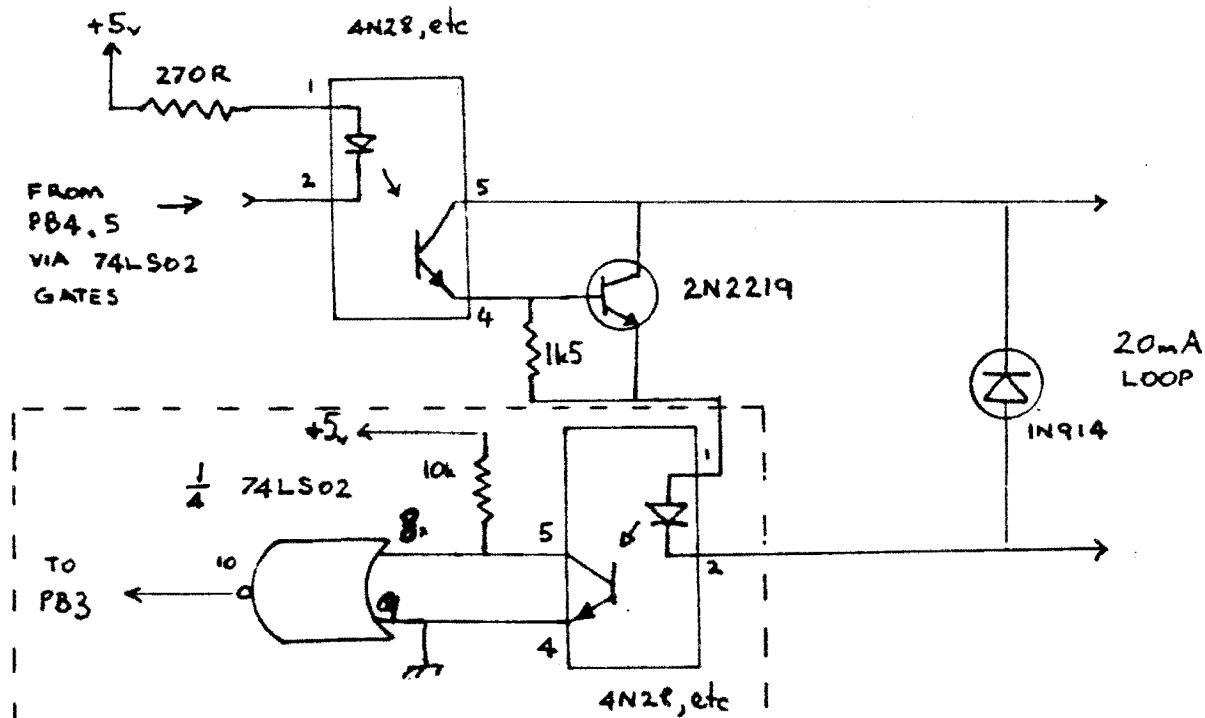
The program has been in use with fifty rather enthusiastic 5, 6 and 7 year olds for quite a while now. They got bored with the half-dozen or so stories after a couple of weeks, so I asked them to write some new ones and they haven't stopped since. My typing is improving a lot, and so is their ability 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	0D	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	00
1530	0D	7F	0A	0A	49	53	20	59	4F	55	52	20	4E	41	4D	45
1540	20	52	45	41	40	40	59	20	07	0D	7F	0A	0A	57	48	41
1550	54	20	57	4F	55	40	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	20	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	00
15E0	00	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	SD	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	18	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	BD	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	00	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:

1700	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.Typewriter' 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	EE9A	CE8C	EAE7	81E2	20E2						
0200	00E0	23BE	23AC	6A31	6B08	23A4	F40A	4405						
0210	1222	4406	1222	4407	1222	4408	1222	2352						
0220	120C	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	2200	3708						
0280	4300	128E	1254	2342	2200	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	B206	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	1200	6A16	2302	3405	00EE	1200						

HANGMAN (Cont)

0300	6A19	6B15	A3C4	DAB2	133E	6A19	6B00	233A
0310	7A01	3A25	130E	00EE	6A19	6B01	1304	6B01
0320	6A20	A3C5	FB1E	2330	7B01	3B00	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	R088	F11E	DC05	1396	7C01
0390	F029	DC05	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	1070	5454	1038	2828	2844
03E0	FEFE	FEFE	FEFE	FEAE	AAEA	AAAE	A9R9	A9R9
03F0	F9F7	5557	5555	7555	5752	52A0	R040	A0R0
0400	8240	6D1A	6009	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	6109	8105

ERRATTA.

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	D01F	A2FF	621A	C3FF
0210	D23A	A309	6425	C5FF	D45C	A315	6633	C7FF
0220	D67B	A320	6800	690A	D89B	CB03	A2F0	D01F
0230	81B4	D01F	CB03	A2FF	D23A	S3B5	D23A	CB03
0240	A309	D45C	85B4	D45C	CB03	A315	D67B	87B5
0250	D67B	A320	6800	6006	ECA1	6B02	D89B	88B4
0260	D89B	6D01	FD15	FB07	ZD00	1266	4838	1290
0270	4A0A	1290	3F01	137A	00E0	6B18	6D0E	02E4
0280	DBD5	7B04	7E01	3B28	127E	7A01	6E00	1372
0290	00E0	7E04	A2ED	FA33	F265	6410	6500	F129
02A0	D455	7404	F229	D455	6400	6500	02E4	D455
02B0	7404	7E01	340C	12AC	641C	02E4	D455	7404
02C0	7E01	3434	12BA	3A0A	7E0B	6400	6510	02E4
02D0	D455	7404	7E01	342C	120E	F00A	400F	F00A
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	9484	FCFC
0310	FCFC	84FC	FC18	80FF	BD3C	BDFF	BD24	FFFF
0320	3838	3810	FEBA	BABA	AA28	2800	B7DA	E92E
0330	492E	8248	B7DA	E92E	492E	492E	B7DA	E92E
0340	B6DE	F64E	E7CE	4BDA	F6DE	F6DA	0024	BBDE
0350	F30E	0000	D60C	F30E	B7DE	D6DC	4BDA	F6DE
0360	F6DA	0000	F24E	BBDE	F6DE	E7CE	E7CE	F30E
0370	D60C	6C20	FC18	00E0	1202	6E00	122A	

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	0E	01	C8	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	09	DF	1A	20	D1
00C0	47	97	2F	86	08	97	2E	CE	00	1A	8D	1B	08	8D	18	86	
00D0	00	9B	2E	97	2E	8D	0E	8D	08	8D	0H	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	FC	D2	8D	04	32	BD	C3	D2	96	0F	97	2F	39	

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	6000	0028	7828	0050	2058	1058
00A0	2050	0020	7020	7020	7020	00A0	F0A0	0050
00B0	2000	4000	2050	0000	A3DA	FE33	F265	600F
00C0	6310	F229	D035	6008	F129	0035	00EE	DAB5
00D0	8A85	8B95	DAB5	1320	7401	0050	F015	F007
00E0	2000	100E	3405	1324	5560	75FF	1332	03BA
00F0	1378	F018	F00A	00E0	1200	B201	017F	1001
0200	03A2	129A	C63B	F780	1306	61F7	8012	C63F
0210	F780	130E	0219	DF00	397A	0020	7A00	217D
0220	8012	7000	1696	1684	0327	813B	86FF	973C
0230	9730	7F80	1286	21B7	8012	064A	B680	1246
0240	4624	037C	003C	4624	037C	0030	5A26	ED96
0250	3080	0A20	014F	9730	963D	800A	2001	4F97
0260	3D7D	00FF	2716	8619	7C00	FE91	FE26	100E
0270	FBD6	FDEA	00E7	0054	2506	07FD	7F00	FE3B
0280	0880	0108	2604	7C00	FF3B	0680	0FFF	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	3A28	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	10CE	1008	6000	3800	00EE	4900
0380	6001	00EE	20EE	3001	1384	20EE	3000	138A
0390	00EE	6110	81B2	4100	00EE	2088	7E01	2088
03A0	00EE	CE01	00DF	FB86	8097	FD7F	00FF	7E02
03B0	047C	00FF	390E	F90F	2639	963C	8089	0738
03C0	963D	8003	D739	3906	FF80	102F	065C	8020
03D0	2F01	5C39	CE00	960F	F939	0000	0106	9696
03E0	384D	2007	069E	4027	1106	FA96	394D	2707
03F0	CB04	4D2D	020B	0407	FA39	9639	4D26	EC39

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			

0505

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	060C	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	12CA	4802
0270	12AC	F618	3900	12BC	6E0F	3300	1298	3200
0280	1298	3100	1298	3000	1298	F20A	420F	128A
0290	F10A	F00A	6300	120A	CF1F	EE9E	12A4	70FF
02A0	6801	120A	6E0C	EE9E	1278	1200	3EAR	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	8D90	8390
0310	4D04	10B8	4D06	10C6	4D08	10B0	4D00	10CA
0320	4D14	10C2	4D18	10B4	7D01	1310	8C90	8290
0330	4C02	2262	4C05	10C2	4C08	10B4	4C11	10B8
0340	4C16	10BC	4C18	10CA	7C01	1330	8B90	8190
0350	4B03	10C2	4B05	10CA	4B0C	10B0	4B12	10B4
0360	4B14	10C6	4B16	10BC	4B18	10B8	7B01	1350
0370	8A90	8090	4A02	10B4	4A08	10BC	4A0C	10C2
0380	4A0E	10CA	4A14	10B8	4A16	10B0	4A18	10C6
0390	7A01	1374	3A14	13A2	3B18	13A2	4D04	7928
03A0	790A	4002	13AA	3C16	13B8	3A08	13B8	3B16
03B0	13B8	4D0B	7924	790E	4C02	13C0	3C05	13CE
03C0	3A0C	13CE	3B03	13CE	4D14	7920	7912	3B14
03D0	13DE	3C02	13DE	4D06	7978	4A18	7978	3B25
03E0	13EE	3C18	13EE	4D0D	7978	4A0E	7978	3C00
03F0	13F6	6EAR	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	12CC	3A00	122A	49FF	12D2	A2EE	2270	4100
0230	122C	71FF	8114	8114	F11E	F365	6402	F418
0240	8092	3000	124C	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	1C14	2200	2214	0100
02F0	0B01	0200	0700	0400	1601	0800	2900	0001
0300	5A01	1000	9400	20C0	6801	4000	E000	8000
0310	D001	0004						

EPROM EXPANSION

R. Schmidt,

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,

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	ADDRESS END	LOADED ON CASSETTE?
PROGRAMS					
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	
TEACHING PROGRAMS					
Machine Code Sub Routines					
1. Shift Variable	1	10	0000	0000	
2. 1200Hz Tone	1	10	0000	0000	
MODIFICATIONS					
Secret Number (see Electronics Australia)	1	10	0298	02EB	
PROJECT					
1 to 5K Memory Expansion	1	11	0000	0000	

NEWSLETTER NUMBER TWO, OCTOBER, 1980

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	ADDRESS END	LOADED ON CASSETTE?
TEACHING PROGRAMS					
How to use Chilos — 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					
ERRATTA					
1 to 5K Memory Expansion (No.1, p.11)	2	4	0000	0000	
TEACHING PROGRAMS					
Binary-Hexadecimal Quiz	2	6,7,8	0200	0300	
PROGRAMS					
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	
IDEAS					
Led Indicators	2	14	0000	0000	
Heatsink	2	15	0000	0000	
	2	16	0000	0000	

CONTENTS. (Cont)

NEWSLETTER NUMBER THREE, NOVEMBER, 1980

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	ADDRESS END	LOADED ON CASSETTE?
TEACHING PROGRAMS					
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	
PROGRAMS					
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	
PROJECT					
Joystick Controller	3	15 to 19	0200	0300	
ERRATTA					
Mine Field (No.2, p.11)	3	19	0000	0000	
Binary Hexadecimal Quiz (No.2, p.6)					
IDEAS					
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	ADDRESS END	LOADED ON CASSETTE?
TEACHING PROGRAMS					
Alpha Display Message	4	1	0300	0400	
How to use Chipos — Supplement					
Generalisation of Instruction	4	7	0000	0000	
PROGRAMS					
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	
IDEAS					
Chipos Programs longer than 4K	4	16	0000	0000	
Sound of the Dump	4	17	0000	0000	
Solutions to Common Problems					
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	ADDRESS END	LOADED ON CASSETTE?
TEACHING PROGRAMS					
How to use Chipos — Part Three					
Digital Logic	5	4 to 8	0200	02A0	
PROJECTS					
JR Expansion Board	5	9,10	0000	0000	
Upgraded Power Supply	5	10,11	0000	0000	
Invader Control	5	13,14	0000	0000	
REVIEWS					
Dream Invaders	5	13	0000	0000	
PROGRAMS					
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	ADDRESS END	LOADED ON CASSETTE?
TEACHING PROGRAM					
How to use Chip 8 — Part Four	6	3,4	0000	0000	
REVIEW					
Dreamsoft	6	6,7,8	0000	0000	
PROGRAMS					
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	
PROJECTS					
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	
ERRATTA					
Chipos — Part Three (No. 5, p.5)	6	2	0000	0000	
PROBLEMS					
Modulator	6	8	0000	0000	

NEWSLETTER NUMBER SEVEN, MARCH 1981

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	ADDRESS END	LOADED ON CASSETTE?
TEACHING PROGRAMS					
8 Bug	7	2,3,4	0300	03DE	
How to use Chip 8 — Part Five	7	5,6	0000	0000	
PROJECT					
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?
TEACHING PROGRAMS					
Precognitive Dreams	8	3,4	0200	030F	
How to use Chip 8 — Part Six	8	5,6,7	0000	0000	
PROJECTS					
Directional Paddle	8	7,8	0000	0000	
Dream Sound Effects Generator	8	10 to 17	0000	0000	
PROGRAMS					
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?
TEACHING PROGRAM					
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	
ERRATTA					
Three Reel Poker Machine (No.3, p.11)	9	11	0000	0000	
PROJECT					
Eight Direction Joystick	9	12 to 14	0200	0275	
PROGRAMS					
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	

CONTENTS. (Cont)

NEWSLETTER NUMBER TEN, JUNE, 1981

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	ADDRESS END	LOADED ON CASSETTE?
PROJECTS					
Dream Connections	10	4	0000	0000	
The 6821 PIA	10	5,6,7	0000	0000	
The Dreamplifier	10	8,9	0000	0000	
PROGRAMS					
Select a program on tape	10	3	0080	00F8	
Chip 8 Disassembler	10	10,11	0400	0710	
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	0400	0500	
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	
IDEAS					
A Long One	10	16	0000	0000	
SURVEY					
	10	1	0000	0000	

LIST OF TEACHING PROGRAMS

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

CONTENTS. (Cont)

LIST OF GAMES

	NEWSLETTER NUMBER	PAGE NUMBER	ADDRESS START	ADDRESS 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	