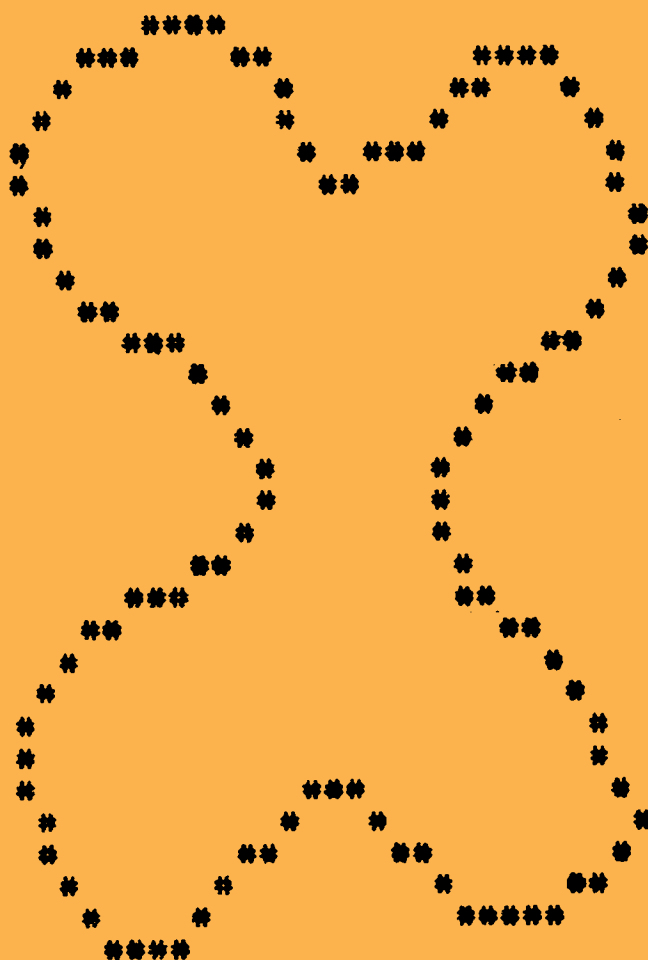


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DREAMER Nö 11 JULY '81.

N.S.W. 6800 USERS GROUP,



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 MELSD 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- * It in no way superseded, replaced or depended upon your DREAMSOFT No.1 EPROM - but in fact complemented it.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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You've convinced me! My computer needs your software.
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Welcome to issue No.11, the first of our second subscription period, and thank you for 'sticking with us'. We will do our best to justify your faith, by attempting to provide an interesting and varied newsletter for you.

Did you try the mini-programs on last month's cover? They both work. The short one is our old friend, the 'Random Dot Generator', the larger one is a fun one from Graeme, key it in and see what it does. While on the subject of covers, if the 'Knot-So-Easy' program goes too fast for you to study the knot, we have reproduced it on the front cover of this issue, so you can study it at your leisure.

We have received several letters lately which have started off, "I have developed XXXX (something or other) for the DREAM, are you interested in it?", or something similar. The answer is YES! YES! YES! We are interested in ANYTHING AND EVERYTHING to do with the DREAM, BUT, we are very, very busy, (Graeme works a 40 hour week, and spends 30-35 hours a week at University and studying, while Garry works 60 odd hours every week, and has a wife and two children who also like him to spend some time with them,) so you can see, we just do not have the time to answer all your letters. If we did answer them all, we would never get the newsletter out to you each month, so please, if you have something you have developed and think we could use, or would like to show us, don't write and ask do we want to see it, put some effort into writing an article about it, and send it in to us. You should all be familiar by now with the type of format we require. It doesn't matter if it is not typed, as long as it is legible, I will correct the spelling and grammar, (you should see Graeme's,) and type it for you. For the same reasons, please do not be upset if it takes several weeks (or months) to get an answer to your letter, as we must put them aside until we have the time to answer them, and that sometimes takes ages.

We have had a few queries about the CHIPOS manual which we often refer to. This was produced by Michael Bauer as an aid to understanding the workings of the CHIPOS EPROM, and was available directly from him, but we do not know whether it is still available. We will find out from Michael and let you know next month if you can still get a copy.

Graham Leadbeater tells us that now that the No.2 Eprom from the 'DREAMSOFT' crew is available, they have several new projects 'in the pipeline', including a 32K PROM board, a 16K Dynamic RAM board with Hi-Res graphics, and a Machine Code Disassembler. Sounds great, we will let you know when they are available. Have a look at the advert. in this issue for the Dreamsoft No.2 package, we have not seen one yet, but it seems they do just about everything except talk!

EGG-ON-FACE Department : After saying that we had not heard from any big winners who had used numbers chosen by the computer with the 'Lotto Number Selector' program published in Issue No.4, we received a letter from Jim Panos, the author of the program, telling us that using the numbers selected by the computer continuously every week since then, he has had a \$1,300-00 Second Division prize, and two further minor prizes, (3rd and 4th Division), and has decided to invest his winnings in a new Sorcerer computer. Congratulations Jim, well done.

The Video Cassette Recorder Controller article is not in this issue after all. After looking at it again, Graeme has decided that it is too complex for beginners, and even the average enthusiast would have trouble with it, as it involves some modifications to the recorder itself, which would void any warranty, and should only be attempted by an experienced technician, as they are very complicated and touchy machines. If you feel that you have the necessary technical expertise and experience and would like to have a go at it, drop us a line and we will send you the details of how Graeme did it, but again, we must stress that this is not one for the beginner. Instead, next month, we will have an article on using the DREAM as an automatic timer to switch things on and off.

NEXT MONTH, we will have;

- A High Resolution Display Mod. for your DREAM, by Michael Bauer.
- STORYTELLER, by Bruce Mitchell. Let the Computer tell your children their bed-time story.
- An INDEX, for issues 1 to 10 of the DREAMER, courtesy of Ed. Farrell.
- DREAM TIME, switch things on and off with your Dream.
- TIME TRIAL, Drive a racing car, using your JOYSTICK.
- A FULLY AUTOMATIC FOUR WHEEL POKER MACHINE, from Jim Panos.
(Win your wife's housekeeping money to buy more bits for your Dream.)
- DODGIT, by Fred Lever Jnr. (Try to cross a busy street without being run over.)
- DUEL, by Neville Harlick. (Shoot the enemy before he shoots you.)
- Plus, articles on an EPROM expansion, a Memod modification, and modified Alien and Alpha Display programs.

I hope we can fit all that lot in. You will have to wait until next month to see whether we managed it!

HAPPY DREAMING,

GARRY and GRAEME.

ERRATTA

In the article 'Dream Connections', Page 4 of Issue No.10, the pin connections for the PL128 socket show Pin 8 as CA2, this should be CB2. Pin 1 is shown as CA1, this should be CB1. Our thanks to J. Reynolds of [REDACTED] for pointing this out.

Garry.

SHORT DEBUGGING HINTS

LEE De VRIES.

When keying in data from a listing, errors can occur where an incorrect instruction occurs. For this reason, data should always be saved on tape BEFORE attempting to RUN the program.

I have found that when incorrect instructions occur, one of the following results:-

1. A complete crash! System goes haywire and generally most data is destroyed.
2. The program will not run. No data is destroyed.
3. The system returns to the monitor program.

Cases 1 and 2 are best fixed by placing F000 at strategic points to see how far you can get. Don't forget to replace the initial data when removing the 'Return to Monitor' instruction.

Case 3. In this case, unlike the ones above, the interpreter could not interpret the code at all and returns you to the monitor.

Examine the Pseudo Program Counter at 0022,3, which will point to the instruction after the faulty one.

Examining the Pseudo Instruction Register at 0028,9, will give the faulty instruction.

CUT OFF HERE.

Now that you can interface the keyboard to your DREAM, you will want to know how to wire up the keyboard. Well, I can not tell you! E.A. will not let me, as all their articles are copyright. You will have to find the July 1979 issue of Electronics Australia, which is the one with the third of the DREAM articles in it, so it should not be too difficult to find. (If you haven't worn it out by now, of course.) If you do not have one, you may be able to get a back issue from E.A., or you can order a photo-copy of the article from them at a cost of \$2-00. Details are given in each issue of E.A. on how to do this. The name of the article you want is 'Software Driven Keyboard for D2 Kits', and it is on Pages 92, 93 and 95. Alternatively, a trip to your local library may be helpful.

Here is a program listing for the DREAM. It is almost the same as the D2 program, the differences are the PIA locations, and a wait 3.33ms subroutine. It does not have lower case Alphabetics, either. It is located at 0700 - 07EF, not 0000. To move it, you only have to change location 0749/A to the location before the start of the look up table.

3.

AN ASCII KEY BOARD FOR YOUR DREAM (Cont)

was closed the ASCII value is in the A and B Accumulators and the carry bit in the 6800 Condition Code register is set.

The routine is used by calling from the main program, using a OMM instruction. If you just want it to look and see if a key is closed, use 0700. If you want it to WAIT for a key, do not access the main routine directly, run this routine, using 07F0.

07F0	BD0700	BRA \$0700	ASC KEY
07F3	24FB	BCC 07F0	If no key, go look again
07F5	9730	STAA 0030	Variable 0
07F7	39	RTS	Return with ASCII value

This returns the ASCII value in the A and B Accumulators and in Variable 0.

Next month, we will give you a HANGMAN game from Lindsay Ford, which will let you play using the T.V. Typewriter code on the Hexadecimal keyboard, or use the ASCII keyboard.

We have included the ASCII Conversion Table, and shown the relative keys alongside the look-up table. As you can see from these, the key functions are easy to change by changing the data in the appropriate location on the look-up table. To find the Hexadecimal code for each key, just look at the number in the top row of the column the key is in for the Most Significant Digit, and look at the number in the extreme left hand column of the row the key is in for the Least Significant Digit. All clear? If not, here are some examples. Capital 'D' is 4,4, Capital 'L' is 4,C, Number 6 is 3,6. (Don't forget the 'SHIFTed' part of the look-up table, as well.) You could even write yourself a table for the T.V. Typewriter codes (which are not standard ASCII codes), so that you can play all the old games, using your ASCII keyboard.

ASCII CONVERSION TABLE

HEX	MSD	0	1	2	3	4	5	6	7
LSD	BITS	000	001	010	011	100	101	110	111
0	0000	NUL	DLE	SPACE	0	@	P	-	p
1	0001	SOH	DC1	!	1	A	Q	a	q
2	0010	STX	DC2	"	2	B	R	b	r
3	0011	ETX	DC3	#	3	C	S	c	s
4	0100	EOT	DC4	\$	4	D	T	d	t
5	0101	ENQ	NAK	%	5	E	U	e	u
6	0110	ACK	SYN	&	6	F	V	f	v
7	0111	BEL	ETB	'	7	G	W	g	w
8	1000	BS	CAN	(	8	H	X	h	x
9	1001	HT	EM	)	9	I	Y	i	y
A	1010	LF	SUB	*	:	J	Z	j	z
B	1011	VT	ESC	+	;	K	[	k	{
C	1100	FF	FS	,	<	L	\	l	~
D	1101	CR	GS	-	=	M	]	m	}
E	1110	SO	RS	.	>	N	^	n	~
F	1111	SI	US	/	?	O	←	o	DEL

THE ASCII SYMBOLS

<p>NUL - Null</p> <p>SOH - Start of Heading</p> <p>STX - Start of Text</p> <p>ETX - End of Text</p> <p>EOT - End of Transmission</p> <p>ENQ - Enquiry</p> <p>ACK - Acknowledge</p> <p>BEL - Bell</p> <p>BS - Backspace</p> <p>HT - Horizontal Tabulation</p> <p>LF - Line Feed</p> <p>VT - Vertical Tabulation</p> <p>FF - Form Feed</p> <p>CR - Carriage Return</p> <p>SO - Shift Out</p> <p>SI - Shift In</p>	<p>DLE - Data Link Escape</p> <p>DC - Device Control</p> <p>NAK - Negative Acknowledge</p> <p>SYN - Synchronous Idle</p> <p>ETB - End of Transmission Block</p> <p>CAN - Cancel</p> <p>EM - End of Medium</p> <p>SUB - Substitute</p> <p>ESC - Escape</p> <p>FS - File Separator</p> <p>GS - Group Separator</p> <p>RS - Record Separator</p> <p>US - Unit Separator</p> <p>SP - Space (Blank)</p> <p>DEL - Delete</p>
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AN ASCII KEY BOARD FOR YOUR DREAM (Cont)

ASCII KEY BOARD ROUTINE

(0700 - 0800)

ASC KEY

0700	CE	80	20	86	04	C6	FF	6F	01	6F	00	A7	01	6F	03	E7
0710	02	A7	03	01	01	6F	02	E1	00	27	16	BD	C2	F3	CE	80
0720	20	86	7F	A7	02	86	07	E1	00	26	08	0D	66	02	4A	2A
0730	F6	0C	39	48	48	48	E6	00	4A	4C	54	25	FC	C6	FF	E7
0740	02	64	02	E6	01	C4	40	1B	CE	07	6F	4C	08	4A	26	FC
0750	A6	00	C6	FF	CE	80	20	6F	02	E1	00	26	FC	BD	C2	F3
0760	16	0D	39	00	00	00	00	00	00	00	00	00	00	00	00	00

KEY LOOK UP TABLE

0770	1B	32	34	36	38	30	3A	08	ESC	2	4	6	8	0	:	BS
0778	09	57	52	59	49	50	5C	7F	TAB	W	R	Y	I	P	\	DEL
0780	07	53	46	48	4B	3B	5D	00	<i>BELL</i>	S	F	H	K	;]	
0788	04 07	58	56	4E	2C	2F	00	00	<i>EOI</i>	X	V	N	,	/		
0790	5A	43	42	4D	2E	20	0D	00	Z	C	B	M	.	SP	CR	
0798	41	44	47	4A	4C	40	0C	00	A	D	G	J	L	@	FF	
07A0	51	45	54	55	4F	5B	0A	00	Q	E	T	U	O	[	LF	
07A8	31	33	35	37	39	2D	5E	00	1	3	5	7	9	-	A	

"SHIFT" KEY LOOK UP TABLE

07B0	1B	22	24	26	28	30	2A	08	ESC	"	\$	&	(	0	*	BS
07B8	09	57	52	59	49	50	5C	7F	TAB	W	R	Y	I	P	\	DEL
07C0	07	53	46	48	4B	2B	5D	00	<i>BELL</i>	S	F	H	K	+]	
07C8	04	58	56	4E	3C	3F	00	00	<i>EOI</i>	X	V	N	<	?		
07D0	5A	43	42	4D	3E	20	0D	00	Z	C	B	M	>	SP	CR	
07D8	41	44	47	4A	4C	40	0C	00	A	D	G	J	L	@	FF	
07E0	51	45	54	55	4F	5B	0A	00	Q	E	T	U	O	[	LF	
07E8	21	23	25	27	29	3D	7E	00	!	#	%	')	=	~	

GET ASC KEY

07F0	BD	07	00	24	FB	97	30	39	00	00	00	00	00	00	00	00
------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

DREAMCARDS

We received a note from Lindsay Ford recently asking us to pass on the following message, which we are happy to do. He writes:-

'DREAMCARDS has now had some feedback (always very welcome) from people who have purchased 'Dream Rummy / Strip Jack Naked'. It seems that some of our first batch of cassettes, (those with a black tinted plastic case), were extremely susceptible to demagnetization and suffered badly in transit. After a fair bit of experimentation, I have come up with a far more stable brand of cassette and these will be supplied in future. If any Dreamers are having problems with the earlier batch, they can return the cassettes to me for replacement.

A typographical error has crept into the 'Strip Jack Naked' listing. Location 058F should be '00', not '80'. Thanks to J. Marchington of [redacted] for picking this one up."

Regards,

Lindsay.

MENU SYSTEM

BRUCE MITCHELL,

With 4K memories all the rage, it becomes possible to store a small library of programs which can be instantly accessed via a system which shows a 'menu' of what is available along with a keycode for each offering. The whole 4K can be loaded in one two minute cassette dump. By pressing the appropriate key, the desired program is moved from it's library location into the 'usual' DREAM memory working area, (0200 onwards), and run. At the conclusion of the program, control returns to the menu program, the screen again shows the offerings on file and you can make your next choice.

Games and utilities are obvious applications, with frequent changes of program easily made without having to load from a cassette every time. This system also allows programs to be written so that they always begin at 0202, regardless of where they are stored, making development easier and allowing a program to be stored anywhere in your available memory (below 7FFF, anyway) without requiring any re-writing of branch and subroutine instructions.

POINTS TO NOTE:

- 1) The Menu Program resides at 0F90-1000, and the Screen Buffer, (Menu Display) at location 0E90-0F90.
- 2) All programs used with this system should be adjusted to begin at 0202. At 0200 in each program enter '1FA6', and always terminate with 1FA6. (Or 1200)
- 3) When entering the menu program put the Start, End, and Destination addresses of each program, numbered 0 to 4, inclusive, from 0FD4 - 0FF1.
- 4) Destination will usually be 0080 or 0200, but may be anything to suit the needs of the program.
- 5) Always enter 1FA6 at 0200 before running (C000, FN, 3,) for the first time.
- 6) Leave enough room above 0202 to hold the largest program in the group before beginning to enter program '0'. E.G. If the largest program takes up from 0202 - 0402, begin to enter your library above 0402.
- 7) The "move" subroutine, (0F90 - 0FA5) is handy in many other applications. To use it, get your program to enter the starting address of the block to be moved into 0030/1 (V0,V1,) the end address +1 of the block to be moved into 0032/3 (V2,V3,) and the starting address of where it is to be moved to into 0034/5 (V4,V5,) then call the routine, using 0F90, FN, 3. (You can use this technique to transfer programs from 0202 onwards into their appropriate storage locations when setting up the menu system.)
- 8) To compose the screen display for use with this system, alter the 'T.V. Typewriter' program, (E.A. July '79) as follows:-
Insert '12E0' at location 020C, then add,
02E0 400B 12E8 0277 120E A2F0 F565 0F90 F000
02F0 0100 0200 0E90

Enter the menu program, enter and run the modified T.V. Typewriter program and compose your screen display. When everything is to your satisfaction, just press "B" and the screen will be dumped into the buffer area of memory.

The disassembled listing is shown on the next page. Space has been left for you to add your own comments as you follow the program through.

<u>ADDR</u>	<u>INSTR</u>	<u>MNEMONIC</u>	<u>EXPLANATION</u>
(Machine Code 0F90 - 0FA5)			
0F90	01	NOP	
0F91	DE 30	LDX \$0030	
0F93	A6 00	LDAA X,0	
0F95	08	INX	
0F96	9C 32	CPX \$0032	
0F98	27 0B	BEQ 0FA5	
0F9A	DF 30	STX \$0030	
0F9C	DE 34	LDX \$0034	
0F9E	A7 00	STAA X,0	
0FA0	08	INX	
0FA1	DF 34	STX \$0034	
0FA3	20 EC	BRN 0F91	
0FA5	39	RTS	

<u>ADDR</u>	<u>INST</u>	<u>MNEMONIC</u>	<u>EXPLANATION</u>
(Chip-8 0FA6 - 0FFF)			
0FA6	AFFA	I = 0FFA	
0FA8	2FF4	DO SUB 0FF4	
0FAA	F00A	V0 = KEY	
0FAC	6102	V1 = 02	
0FAE	8200	V2 = V0	
0FB0	8125	V1 = V1 - V2	
0FB2	3F01	SKF VF = 01	
0FB4	1FAA	GO TO 0FAA	
0FB6	8004	V0 = V0 + V0	
0FB8	8004	V0 = V0 + V0	
0FBA	BFBC	GO TO 0FBC + V0	
0FBC	AFD4	I = 0FD4	
0FBE	1FCE	GO TO 0FCE	
0FC0	AFDA	I = 0FDA	
0FC2	1FCE	GO TO 0FCE	
0FC4	AFE0	I = 0FE0	
0FC6	1FCE	GO TO 0FCE	
0FC8	AFE6	I = 0FE6	
0FCA	1FCE	GO TO 0FCE	
0FCC	AFEC	I = 0FEC	
0FCE	2FF2	DO SUB 0FF2	
0FD0	1202	GO TO 0202	
0FD2	0000	NOP	
0FD4	0000	Start Program 0	
0FD6	0000	End Program 0	
0FD8	0000	Dest. Program 0	
0FDA	1111	Start Program 1	
0FDC	1111	End Program 1	
0FDE	1111	Dest. Program 1	
0FE0	2222	Start Program 2	
0FE2	2222	End Program 2	
0FE4	2222	Dest. Program 2	
0FE6	3333	Start Program 3	
0FE8	3333	End Program 3	
0FEA	3333	Dest. Program 3	
0FEC	4444	Start Program 4	
0FEE	4444	End Program 4	
0FF0	4444	Dest. Program 4	
0FF2	00E0	ERASE	
0FF4	F565	V0 TO V5 = MI	
0FF6	0F90	CALL M/C AT 0F90	
0FF8	00EE	RETURN	
0FFA	0E90	Start 'Menu' display	
0FFC	0F90	End 'Menu' display	
0FFE	0100	Screen buffer. (Destination.)	

LINDSAY R. FORD,

This is a random number game that is an excellent test of your ability to recognise 'patterns' or 'systems'. The DREAM throws 50 dice and then performs a non-random operation on some of them before they are displayed. At least 3 dice must be affected by this operation or 'ERROR' is displayed, your score is incremented by one, and the throw is repeated. You then have 20 seconds, (or less if you hold down a key,) before the DREAM blanks the display and asks you to key in the answers to three questions;

- 1) "FROM" - ie: What dice have been changed? (2's, 3's, etc.)
- 2) "TO" - ie: What number have they been changed to?
- 3) "AT" - Has the operation only been performed on dice on the:-
 - Left of the screen? (Key in 1)
 - Right of the screen? (Key in 2)
 - Centre of the screen? (Key in 3)
 - Outside of the screen? (Key in 4)
 - or, Throughout all the dice? (Key in 5)

After each answer is entered the correct answer will be displayed and your score incremented by 1 for a correct guess or decremented by 1 if you were wrong. You win if your score reaches 20, and lose if it reaches 00. To give yourself longer to ponder the throw, alter the data at 0301. (3C will give you 60 seconds.)

The original idea for this game (and the rather odd name) came from an article in the August '78 issue of E.T.I. (Page 74) in which the game, (as played with real dice,) was described. It had to be greatly simplified for the limited DREAM graphics display, but anyone interested in information on the range of possibilities and odds against them occurring randomly should get a copy of the original article.

N.B. This program contains a preliminary display (0100-01C7) to identify it and explain the scoring when it is loaded from tape. As soon as it has been keyed into the DREAM, the program should be dumped onto tape, (any errors can be corrected later) as a C000, FN, 3, instruction will erase this data.

0080	0001	06EE	8ACE	8CEA	EEAA	EACA	AEE0	A0E0
0090	C0A0	F8F8	D8F8	F8B8	F8E8	F8B8	D8E8	F8A8
00A0	F8A8	F8A8	D8A8	F8A8	A8A8	F8E8	F8B8	F8E8
00B0	D8B8	F888	F888	F83E	3E3E	BE3E	3E3E	3E3E
00C0	BE3E	3E3E	3E3E	BE3E	3E3E	0080	A080	A080
00D0	0080	A080	A080	0080	2000	2000	0000	EF8A
00E0	AAAA	EA00	3B12	1212	1300	3B29	3929	2900
00F0	00EE	8ACE	8CEA	DABD	6802	7A38	F01E	00EE
0100	000F	FFFF	FFFF	E000	0008	8888	A822	2000
0110	000E	AAAA	AAAA	A000	000D	AAA8	8AA2	A000
0120	000B	AAAA	DAAA	A000	0008	88AA	DAAA	A000
0130	000F	FFFF	FFFF	E000	0000	0000	0000	0000
0140	0777	771D	DDDC	02E0	0425	5211	1550	E2A0
0150	0727	721D	15D8	02A0	0125	6205	1590	E2A0
0160	0725	521D	DD5C	02E0	0000	0000	0000	0000
0170	EBAB	8040	2AEE	EE01	AA29	2240	2AAA	A881
0180	EAB9	0740	2AEA	AA1D	CAA9	2240	2ACA	AA81
0190	ABA9	0040	3EAE	AE01	0000	0000	0000	0000
01A0	955C	1COA	EA55	7077	9554	540A	AA55	5215
01B0	9554	940E	AA55	5175	9554	5404	AA55	5245
01C0	9F54	1C04	EE7D	5077	****	****	****	****

ZOONAYMAN (Cont)

0200	630A	6062	235C	0000	00E0	6400	236C	4006
0210	120C	8500	236C	8600	236C	9600	1218	8700
0220	2378	03EE	4501	124A	4502	1266	4503	1284
0230	4504	12A0	6B01	6A02	23A4	23B4	3A3E	1238
0240	7B06	3B1F	1236	23AE	12D2	6B01	6A02	4501
0250	23A4	23B4	3A20	124E	7B06	3B1F	124C	4501
0260	23AE	3501	12D2	6B01	6A20	4502	23A4	23B4
0270	3A3E	126A	7B06	3B1F	1268	4502	23AE	3502
0280	12D2	124A	6B07	6A08	4503	23A4	23B4	3A38
0290	1288	7B06	3B19	1286	4503	23AE	3503	12D2
02A0	6B19	6A08	4504	23A4	23B4	3A38	12A4	7B08
02B0	3B29	12A2	6B01	6A38	4504	23A4	23B4	7A04
02C0	3A4C	12B8	7B06	3B1F	12B6	4504	23AE	4504
02D0	1284	03F2	3400	12FC	00E0	6A16	6B0C	6005
02E0	A083	0AB5	7A08	F01E	3A2E	12E2	23C6	6E50
02F0	FE18	4300	13DE	4314	13DE	1208	6E00	235A
0300	4E14	130A	6F0F	EF9F	12FE	00E0	600D	6106
0310	6A28	6B02	A0B7	23BC	20F6	3AD0	1316	23BC
0320	23C8	6B03	6A24	F80A	F829	0AB5	7A07	235A
0330	4B09	8670	4B0F	8650	F629	0AB5	23C8	9680
0340	23C6	5680	23C4	4300	13DE	4314	13DE	7B06
0350	3B15	1324	6094	235C	1206	6030	F015	F007
0360	3000	135E	6002	F018	7E01	00EE	C007	4000
0370	136C	4007	136C	00EE	236C	8800	C101	4100
0380	138E	4802	1398	4803	139C	4806	13A0	0004
0390	8004	A08E	F01E	00EE	A0AA	00EE	A0AE	00EE
03A0	A0B2	00EE	5680	00EE	7401	8070	137A	60FC
03B0	8402	00EE	0AB5	2378	7A06	00EE	0AB6	7B06
03C0	F11E	00EE	73FE	7301	A080	F333	F265	6C1C
03D0	6D18	F129	DCD5	7C04	F229	DCD5	00EE	6800
03E0	6E03	FE18	23C8	7801	3828	13E0	1200	BDC3
03F0	4139	CE80	12C6	3FE7	0139			

ZOONAYMAN - TWO PLAYER SUBROUTINE

(03FA - 0500)

This is a little extra for 2K (and up) DREAMs. It allows a second player to key in the three variables used in the dice display/modify operation. If an illegal key is entered, (o, 7, F etc.), or an illegal operation performed, (E.G. If the second player tells the DREAM to change all 5's to 5's) then the score is incremented by 1. The score will also be incremented if less than 3 dice are affected by the operation performed, but this is not under the second player's control.

0206 Insert 13FA into main program.

03F0					00E0	6A04	6B0C
0400	6405	A4D4	2468	3A3C	1404	F10A	4101
0410	3102	140A	2470	00E0	6201	2476	F60A
0420	00E0	8860	2482	4314	13DE	00E0	4901
0430	6202	2476	F70A	2470	00E0	8870	2482
0440	24C2	4314	13DE	00E0	4901	1430	6203
0450	F50A	2470	00E0	8850	24CA	4314	13DE
0460	4901	144C	235A	1220	0AB5	7A08	F41E
0470	600C	235C	00EE	6A18	F229	2468	A4F2
0480	00EE	6E00	4800	1498	60F9	6900	6F00
0490	4F00	00EE	3E00	78FF	6901	6D00	6A18
04A0	2468	A4F2	0AB5	2470	7D01	3D0A	14A4
04B0	6A16	A083	2468	3A2E	14B4	23C6	6E50
04C0	00EE	6A14	F629	0AB5	1498	4800	1498
04D0	7801	1488	8E8A	8A8A	8EE3	A0E3	C2A3
04E0	8E08	888E	8A8E	8AEA	AEA8	EC48	4EEE
04F0	C2AE	7711	2200	22			

DRAWING

(0200 - 0290)

P. E. MARSTON.

Here is a simple program, which enables the player to draw anything on the screen.

In addition, I have included the 'Flow Chart' to allow the new-comer to programming to analyse the program and see how CHIP-8 is used to perform this simple task.

The point of your 'chalk' appears in mid-screen, and the corners of the 'easel' are marked. To move your 'chalk', without drawing a line, press key 'C', (Change position.), followed by :-

'4' Left, '6' Right, '9' Up, '1' Down.

To draw, press key 'D', followed by:-

'8' Up Left, '9' Up, 'A' Up Right,

'4' Left, '6' Right,

'0' Down Left, '1' Down, '2' Down Right.

Each press draws one dot.

The program is also ideal for designing and evaluating graphics, on screen.

NOTE: We have not followed our usual practice of changing the key functions to suit the 'Digitran' keyboard with this program. You should try to do this yourself, (even if you do not need them changed), by disassembling the program and using the 'Flow Chart' as a guide. (If you do not have a printer, disassemble it by hand, it is only a short program and will not take you long.)

G & G.

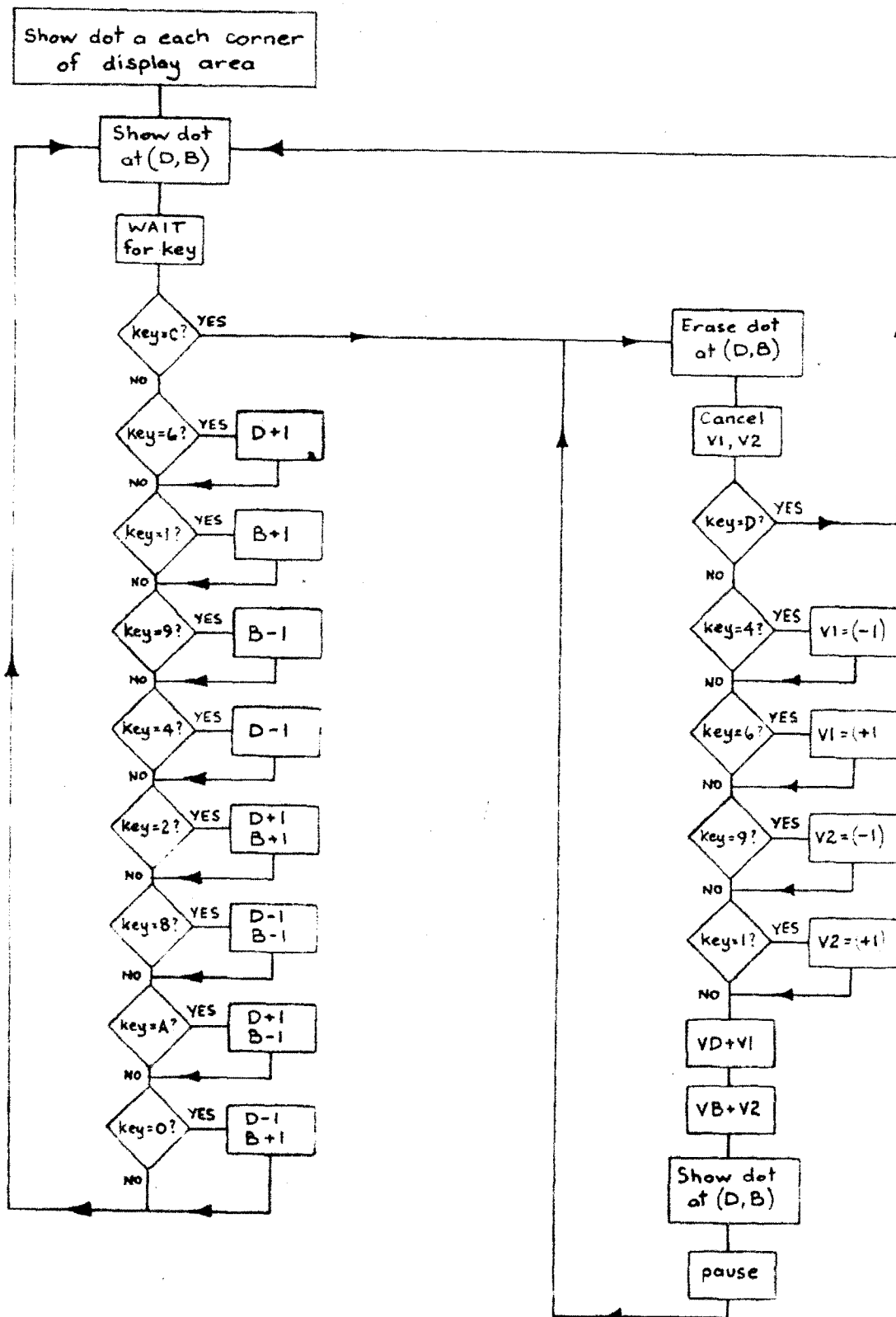
0200	6A00	6B0F	6D1F	6E3F	A282	DAD1	DAA1	DED1
0210	DEA1	DD81	F00A	400C	124C	4006	7D01	400A
0220	7B01	400A	7BFF	4004	7DFF	400A	7D01	400A
0230	7B01	400A	7DFF	400A	7BFF	400A	7D01	400A
0240	7BFF	400A	7DFF	400A	7B01	1212	DD81	6100
0250	6200	6C0D	ECA1	1212	6C04	ECA1	61FF	6C06
0260	ECA1	6100	6C0A	ECA1	62FF	6C01	ECA1	6201
0270	8D14	8B24	DD81	6A04	FA15	FA07	3A00	127A
0280	124C	8000						

WANTED

Here is a selection of things that people have requested appear in the DREAMER. If you would like to try your hand at writing a program, or an article, but can not think of a subject, why not try one of the following?

- | | |
|---------------------------|---------------------------------------------|
| - A CHESS program | - A FLIGHT SIMULATOR game |
| - DRAUGHTS | - Interfacing the DREAM to external devices |
| - An EPROM programmer | - Morse Code Decoder |
| - A LIGHT PEN | - Radio Amateur orientated programs |
| - More 'SERIOUS' programs | - A 'WESTERN GUNFIGHT' game |
| - More JOYSTICK programs | - |

FLOW CHART.



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.

+++++

IF YOU ARE HAVING TROUBLE getting your DREAM up and running or it has died on you and you cannot find out why, write with full details of troubles. Send stamped, addressed envelope for reply. If you think it is too hard for you to find the fault, send \$10-00, (to cover return insured postage and packing), and your DREAM, to SID MOORBY, [REDACTED]

+++++

FRED LEVER, SNR, is happy to discuss problems after hours on [REDACTED] or send S.S.A.E. with description of problems to [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.

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

STUART CROFT,



A random selection of numbers are displayed in the form of a multiplication sum. The child's and the computer's scores are shown on the screen after ten sums have been answered. Enter the answer via the keyboard. I.E. If answer is 100, hit keys 1, 0, 0. If answer is 2, hit key 2.

The final score is displayed as a fraction of ten, with comments Good, Fair, or Bad. To start the program, Run C000, FN, 3.

0080	ABAA	ABAB	52BB	AAAA	2ABA	B9A1	A9AB	B900
0090	EEA4	E4C4	HEEA	8AAE	AAEA	E444	4440	4400
00A0	EE8A	AAAA	EEEC	AAAA	AAEC	EEAA	EA8A	8EEE
00B0	AAAE	ACEA	EE8A	CE8A	8AEE	4A4E	4CEA	0000
00C0	A0A0	6301	6118	6200	22C4	1294	A0AA	1002
00D0	A0B4	10C2	4B2B	6B0B	BBBB	7BBB	BB6B	BB6B
00E0	0B9B	8BBB	0B0B	CBAB	9BCB	6B2B	0B0B	1BFB
00F0	6BBB	AB6B	2BAB	AB9B	3BFB	4B6B	2BFB	5B0B
0200	6900	6400	6500	00E0	2340	2340	2358	000F
0210	6A0C	8A05	3F01	120E	000F	6A0C	8A05	3F01
0220	1218	2364	2370	237A	2386	2390	23A0	0000
0230	A3BC	F265	4000	13C2	F00A	A3BF	F055	F00A
0240	A3C0	F055	F00A	A3C1	F055	A3D4	FF55	A3BC
0250	F565	8035	3000	13E4	8145	3100	13E4	8255
0260	3200	13E4	2392	A338	FE33	2300	A3D4	FF65
0270	7401	22E0	6650	F618	7901	390A	1206	0000
0280	00E0	6602	8655	3F00	10C0	6605	8655	3F00
0290	10D0	10C0	6A14	6B0A	A338	F433	2300	7A07
02A0	A2BE	DAB5	7A09	660A	A338	F633	2300	66C0
02B0	F615	F607	3600	12B2	660A	F618	1200	0810
02C0	2040	8000	6605	D125	7301	4303	00EE	F61E
02D0	7108	12C6	A080	6300	6100	6213	22C4	00EE
02E0	A090	12D6	22D4	02EA	12D4	C650	D721	C640
02F0	BDC2	E539	0000	0000	0000	0000	0000	0000
0300	F265	4000	132C	F029	4001	7AFF	DAB5	4001
0310	7AFF	7A05	F129	4101	7AFF	DAB5	4101	7AFF
0320	7A05	F229	4201	7AFF	DAB5	00EE	4100	1322
0330	1314	00F0	00F0	0000	0000	0588	5020	5088
0340	6A01	6B00	A338	F433	2300	00EE	6A20	6B00
0350	610C	F129	DAB5	00EE	6A26	6B00	A338	F533
0360	2300	00EE	6A01	6B0A	A338	FC33	2300	00EE
0370	7A07	680A	A338	DAB5	00EE	7A09	6B0A	A338
0380	FD33	2300	00EE	7A07	6B0A	A332	DAB4	00EE
0390	7A08	6B0A	A39A	DAB5	00EE	E020	4000	4000
03A0	6E00	4C00	13B4	4D00	13B4	8EC4	7DFF	3D00
03B0	13AA	4E00	6E00	A3BC	FE33	00EE	0004	0000
03C0	0402	6000	A3BF	F055	3100	123E	A3C0	6000
03D0	F055	1244	0204	0203	0100	5000	0A01	200A
03E0	0700	2A00	22E4	A3D4	FF65	2358	7501	2358
03F0	A3D4	FF65	7501	7901	490A	1280	1230	0000

COMPUCROSSES

(0080 - 0400)

Mr. K. BOLCH,

Even if you consider yourself an 'expert' at Noughts and Crosses, you will still find it hard to beat the computer. The cells are numbered 1 to 9, so to make your move, just press the key corresponding to the cell you want to move to.

The computer's score is displayed on the left, the number of draws in the middle, and your score on the right.

Remember, it CAN be beaten!

0080	3910	1360	1096	8180	6001	2288	4F01	10A0
0090	7401	2340	1214	4400	1002	A3FB	F065	1006
00A0	8180	2288	1084	C803	7801	4804	6809	4802
00B0	6807	00EE	20A6	7801	480A	6806	00EE	6805
00C0	1086	232A	1086	4000	10BE	4401	1284	4402
00D0	1284	3403	1002	4001	1284	6100	A3F6	F11E
00E0	F065	7101	3001	100C	6802	4102	6809	4103
00F0	6801	4104	6807	C007	4000	20B4	1086	1088
0200	6500	6600	6700	0000	0000	0000	22AA	C001
0210	4000	123A	6310	2250	4409	130C	F80A	6909
0220	8985	4F00	121C	4800	121C	8180	6000	2288
0230	4F01	13F0	6001	2342	6310	2250	7401	4409
0240	130C	63FE	2250	3910	1360	6302	2250	1080
0250	6900	6800	A300	F91E	F165	8A00	0310	A3F6
0260	FB1E	F065	8804	8A10	0310	81A0	3B00	125E
0270	4803	13E4	48FD	135A	9380	00EE	7902	3910
0280	1252	00EE	20A6	1086	A324	4000	A327	6C00
0290	6D07	4101	12A6	71FF	7C06	4C12	12A0	1292
02A0	6C00	7D06	1292	DCD3	00EE	00E0	6C04	A323
02B0	6D07	DCD1	7D01	3D16	12B2	6D0B	22F2	6D11
02C0	22F2	6C1D	6D00	8370	22DA	8350	22DA	8360
02D0	22DA	6400	234A	00EE	0000	A030	F333	F029
02E0	DCD5	7C04	F129	DCD5	7C04	F229	DCD5	7C0A
02F0	00EE	6CF9	A293	DCD1	7C01	3C08	12F6	00EE
0300	0987	0963	0951	0852	0375	0471	0654	0321
0310	963A	4456	4456	4456	4456	5454	5454	073B
0320	973A	3982	A040	A0E0	A0E0	C80F	7801	6109
0330	8185	4F00	132A	A3F6	F81E	F065	3000	132A
0340	60FF	A3F6	F81E	F055	00EE	6000	6100	A3F6
0350	F055	7101	310A	1350	00EE	7701	A3C8	13E8
0360	A300	F91E	F165	8A00	0310	A3F6	FB1E	F065
0370	4000	137C	8A10	0310	81A0	136A	88B0	2340
0380	1086	6205	6018	6108	0015	F21E	7008	3038
0390	1388	6050	F015	F007	3000	1396	00EE	0000
03A0	AEA0	EA4A	4EA0	A0A0	A0E0	8AAA	AAFA	DA90
03B0	00B0	9090	CEAA	AEAC	CAE8	AAEA	AFAD	8080
03C0	8080	8000	0000	0000	AEA0	EA4A	4EA0	A0A0
03D0	A0E0	8E8A	8A8A	EEEE	884E	28EE	7501	A2B4
03E0	2382	120C	7601	A3A0	2382	22AA	00EE	0000
03F0	8180	2288	121C	0000	0000	00FF	0000	0000

E. WITTE,

This routine copies the 64 X 32 screen of the DREAM to a Baudot Teleprinter. It is fully re-locatable, so to use it in your Machine Code programs, call it using a 7E0200 instruction. (if you locate it at 0200.) To use it in a Chip-8 program, simply use a OMMM instruction. (0200 in this example.) The listing is shown below starting from 0200.

```

0200    CE 00 FF C6 04 D7 20 8D 0E 7F 00 41 08 8C 02 00
0210    26 15 8D 03 7E C3 60 86 FE 8D 3C 86 C4 8D 38 86
0220    D0 8D 34 86 C4 20 30 7F 00 40 A6 00 97 42 96 42
0230    7C 00 40 48 97 42 24 04 86 FA 20 02 86 C8 8D 17
0240    96 40 81 08 27 02 20 E6 7C 00 41 96 41 81 08 27
0250    02 20 B9 8D CA 20 B2 7D 00 20 26 FB 44 24 04 C6
0260    07 20 02 C6 05 F7 80 12 C6 01 D7 20 4D 26 E8 39

```

Here is a sample of what it will do:

```

X  X XXXXX XXXX XXXXX      XXXX  XXXX      X
X  X X      X  X X          X  X  X          X X
X  X X      X  X X          X  X              X  X
XXXXXX XXXX  XXXXX XXXX      X  XXXX          X  X
X  X X      X X  X          X              X  XXXXX
X  X X      X  X X          X  X  X          X  X
X  X XXXXX X  X XXXXX      XXXX  XXXX          X  X
XXXXX XXXXX X  X XXXX      XXXX XXXXX
X  X X      XX XX X  X      X  X X
X  X X      X X X X  X      X  X X
X  X XXXX  X  X X X  X      X  X XXXX
X  X X      X  X X  X      X  X X
X  X X      X  X X  X      X  X X
XXXXX XXXXX X  X XXXX      XXXX X
XXXXXX X  X XXXXX      XXXX XXXX XXXXX X  X X
X  X X X      X X      X X XX XX
X  X X      X X      X  X X X X
X  XXXXX XXXX      X  X X X  X
X  X X X      XXXXX X  X
X  X X X      X  X X X      X  X X X
X  X X X      XXXX X  X X X
XXXXX X  X XXXXX X  X X X
XXXX  XXXX X  X XXXX XXXX XXXX
X  X X  X XX XX X  X X  X  X  X  X  X
X  X  X X X X X  X X  X  X  X  X  X
X  X  X X  XXXX X  X  X  XXXX XXXX
X  X  X X  X X  X  X  X  X  X  X
X  X X  X X  X X  X XX  X  X  X  X
XXXX  XXXX X  X X  XX X  X  XXXXX X  X  X

```

VIDEOTELETYPEWRITER.

(0200 - 0400)

TERRY MACKRELL,
[REDACTED]

This is a repetitive and eye-catching advertising page. You adjust the page length at 021F, from 06 for one 'line', to 1C for a full 'page'.

Treat the display either as a 64 X 28 matrix, or enter copy from a stored "T.V. TYPEWRITER" page. In either case, enter a 00 byte after every eighth byte of copy for the 'carriage return'. Note that the sum of the carriage return entries consumes a total of four lines of page zero thus permitting only 28 printing lines.

Data is entered from 0236 to 0330.

This program was developed from an idea suggested by a 6800 user friend, Don Smith, ZL3AFP.

0200	6A00	6B00	6C00	A236	FC1E	DAB1	2226	7A08
0210	3C50	7C01	3A40	1206	6A00	7B01	7C01	3B1C
0220	1206	00E0	1200	6D02	FD18	6D05	FD15	FD07
0230	3D00	122E	00EE	CEEE	F877	770A	EEA0	00AA
0240	8AA8	4555	0A44	A400	AEEE	A877	550A	44E0
0250	00AC	8AA8	5555	0A44	4400	CAEA	A877	7704
0260	4440	0000	0000	0000	0000	0000	E4EE	8EEE
0270	EE3B	3B38	00A4	22A8	82AA	2AA2	A000	A4EE
0280	AEE2	EE3B	A2B8	00A4	82E2	A2A2	2AA2	A000
0290	E4EE	2EE2	EE2B	3B38	0000	0000	0000	0000
02A0	0000	7757	1547	DDDD	DCDC	0044	5215	4555
02B0	5555	0800	6572	1645	555D	5C88	0045	5255
02C0	4555	51D8	4800	4757	7575	55D0	9588	0000
02D0	0000	0000	0000	0000	5555	55C7	7605	09C8
02E0	0055	5554	4555	0880	4800	5554	9C87	5510
02F0	50C8	0055	5549	0555	0880	0000	7229	49C5
0300	5605	0888	0000	0000	0000	0000	0000	5DD0
0310	DDDD	DDDD	DDDD	0022	2222	2222	2222	2200
0320	5DD0	DDDD	DDDD	DDDD	0022	2222	2222	2222
0330	2200	0000	0000	0000	0000	0000	00	

LOTTO

(0200 - 0300)

D. WOOLNOUGH,
[REDACTED]

We haven't heard from any big winners from our previous 'Lotto' number selector, so here is another one to try your luck with.

Simply key it in, then RUN C000, FN, 3. A selection of six random numbers will appear on the screen. Press any key to select another set.

GOOD LUCK!

0200	6A08	6B04	2220	7A0E	2220	6A08	7B0A	2220
0210	7A0E	2220	6A08	7B0A	2220	7A0E	2220	124A
0220	6328	023F	8325	4F00	1220	A250	F333	F265
0230	3100	123A	3200	1246	1220	F129	DAB5	7A07
0240	F229	DAB5	00EE	7A07	1240	F00A	00E0	1200

D. A. TRABUCCO,

To all those who say 'Not another version of Space Invaders?', I say, 'Why Not?' After all, Space Invaders is all the rage, so why not jump on the bandwagon, especially when it is fun. This program will have special appeal to all those DREAM addicts who have neither the time nor the resources to add memory expansion at this time, and thus are not able to play 'Dream Invaders.'

In this game your job is to man the cannon using keys ⁰ and ¹ for Left and Right, and ² for Fire. You must shoot as many 'Invaders' and 'Commanders' as possible with your 30 bombs, receiving 5 points and 15 points respectively. The game ends when you run out of bombs, the invaders infiltrate your castle, or you get hit by an invader's bomb.

```

0080 6C00 A0C0 F233 6A1A 6B1A A0C0 FC1E F065
0090 F029 DAB5 7A04 7C01 3C03 108A F00A 00E0
00A0 1200 CA01 03E8 7B01 00EE
00E0 681C 7901 391E 127A 13E0 6A01 FA18 00EE

0200 6A0C 6B18 A3F9 DAB3 7A10 3A3C 1206 6000
0210 6104 6C00 A3F6 D013 A0AA FC1E 7C02 F155
0220 7106 3116 1214 6104 7008 3040 1214 611F
0230 6C00 A0DA 7C01 F155 3C03 1234 6200 63FF
0240 661C 68FF 6C04 6D00 6E00 6901 A3FC 1268
0250 A3FC D564 453A 1262 6104 E1A1 7501 4500
0260 1268 6104 E1A1 75FF D564 6A3F 85A2 38FF
0270 127E 6104 E19E 1298 10E0 8750 1280 D781
0280 78FF 4800 1296 D781 3F01 1298 6B1C 8B82
0290 4B00 13AC 135E 68FF A0AA FE1E F165 41FF
02A0 12C4 A3F6 D013 7003 6A3F 80A2 403E 7103
02B0 403F 7103 4000 7103 D013 4116 13E4 A0AA
02C0 FE1E F155 7E02 4E30 6E00 A0DA FD1E F165
02D0 311F 12F6 CA01 3A00 1326 8AC0 A0AA FC1E
02E0 F165 31FF 1300 7AFE 8BC0 7BFA 9AB0 132C
02F0 A0AA FA1E 12E0 A3F2 D011 3F01 130A 1302

0300 7102 7101 411F 1326 A3F2 D011 3F01 1326
0310 6B1C 8B12 4B1C 13CE 20EA 70FE 5700 1324
0320 9810 68FF 611F A0DA FD1E F155 7D02 4D04
0330 6D00 7C06 4C34 6C04 A3F3 33FF 134A CAAF
0340 3A00 1250 633A 6400 1358 D343 73FF 4300
0350 63FF 4300 63FF 33FF D343 1250 0000 6A17
0360 8A85 3F01 1296 6A00 A0DA F165 70FE 5700
0370 1376 9810 1296 7A02 3A08 136A 6A00 A0AA
0380 FA1E F165 41FF 1392 A3F6 D013 D013 4F01
0390 1396 7A02 137E D013 A3EC D781 61FF A0AA
03A0 FA1E F155 7205 6A02 03E8 1296 6E00 D781
03B0 A3FC D343 20A2 D343 3BFF 13B4 A3F3 D343
03C0 63FF 720F 1296 CE01 C086 007E C07D D011
03D0 6BA0 0000 A300 D564 20A2 D564 3BFF 13D8
03E0 0000 0000 03C6 1080 F600 3AD7 2106 407E
03F0 C2E5 40B4 FC30 A0E0 40AA FEFE 1038 7C28

```

KEITH A AYTON,
VK3KAA,

This program is in Machine Code and must be run 0200, FN, 3, NOT C000, FN, 3.

It sends Morse Code at any nominated speed, to enable people to learn Morse, or as an automatic I.D.

The 'User Message' starts at 0274, up to the limit of memory available. Speed is set at 0270 & 0272, which also sets the 'DIT/DAH' length ratio.

The spacing is always ONE DIT length. To get letter and word spacing, you have to string a series of spaces together. I.E. 30 30 30 for letter space, 30 30 30 30 30 30 30 for word space.

10 equals DIT

20 equals DAH

30 equals SPACE

00 equals RETURN TO START OF MESSAGE AND REPEAT

ADJUST SPEED by changing 0270 & 0274

to 20	5E	for 7 words per minute
19	4B	for 10 words per minute
0F	2D	for 15 words per minute.

NOTE: The actual program is from 0200 to 0274. The rest is a message from Keith. You can run it with only 1K of memory, but your message will be restricted to what you can squeeze into 0275 to 03FF. (Don't forget to end your message with an 00.)

```

0200 47 80 13 86 FF B7 80 12 86 2F B7 80 13 86 00 B7
0210 80 12 CE 02 74 A6 00 08 81 10 27 0E 81 20 27 18
0220 81 30 27 25 40 26 09 7E 02 12 FF 02 6C FE 02 70
0230 FF 02 6E 86 FF 7E 02 51 FF 02 6C FE 02 70 FF 02
0240 6E FE 02 72 86 FF 7E 02 51 FF 02 6C FE 02 70 86
0250 00 01 B7 80 12 09 26 FD 86 00 B7 80 12 FE 02 70
0260 09 26 FD FE 02 6C 7E 02 15 00 00 00 03 31 0F FF
0270 0F FF 2D FF 20 10 20 10 20 30 30 30 30 30 10 20
0280 30 10 20 30 10 20 30 10 20 30 30 20 10 10 10 30
0290 20 10 10 10 30 20 10 10 10 30 20 10 10 10 30 30
02A0 30 20 10 20 10 30 20 10 20 10 30 20 10 20 10 30
02B0 20 10 20 10 30 30 30 30 20 10 10 30 20 10 10 30
02C0 20 10 10 30 20 10 10 30 30 30 10 30 30 10 30 30
02D0 10 30 30 10 30 30 10 30 30 30 30 10 10 20 10 30
02E0 10 10 20 10 30 10 10 20 10 30 10 10 20 10 30 30
02F0 30 30 20 20 10 30 20 20 10 30 20 20 10 30 20 20

```

```

0300 10 30 30 30 30 30 10 10 10 10 30 10 10 10 10 30
0310 10 10 10 10 30 10 10 10 10 10 30 30 30 30 10 10
0320 30 10 10 30 10 10 30 10 10 30 30 30 10 20 20
0330 20 30 10 20 20 20 30 10 20 20 20 30 10 20 20 20
0340 30 30 30 30 20 10 20 30 20 10 20 30 20 10 20 30
0350 20 10 20 30 30 30 30 10 20 10 10 30 10 20 10 10
0360 30 10 20 10 10 30 10 20 10 10 30 30 30 20 20
0370 30 20 20 30 20 20 30 20 20 30 30 30 20 10 30
0380 20 10 30 20 10 30 20 10 30 30 30 30 20 20 20 30
0390 20 20 20 30 20 20 20 30 20 20 20 30 30 30 10
03A0 20 20 10 30 10 20 20 10 30 10 20 20 10 30 10 20
03B0 20 10 30 30 30 30 20 20 10 20 30 20 20 10 20 30
03C0 20 20 10 20 30 20 20 10 20 30 30 30 10 20 10
03D0 30 10 20 10 30 10 20 10 30 10 20 10 30 10 20 10
03E0 30 30 30 30 10 10 10 30 10 10 10 30 10 10 30
03F0 10 10 10 30 20 30 30 20 30 30 20 30 20 30 30

```

MORSE CODE SENDER PROGRAMME. (Cont)

0400	20	30	30	20	30	30	30	30	10	10	20	30	10	10	20	30
0410	10	10	20	30	10	10	20	30	30	30	30	10	10	10	20	30
0420	10	10	10	20	30	10	10	10	20	30	10	10	10	20	30	30
0430	30	30	10	20	20	30	10	20	20	30	10	20	20	30	10	20
0440	20	30	30	30	30	20	10	10	20	30	20	10	10	20	30	20
0450	10	10	20	30	20	10	10	20	30	30	30	30	20	10	20	20
0460	30	20	10	20	20	30	20	10	20	20	30	20	10	20	20	30
0470	30	30	30	20	20	10	10	30	20	20	10	10	30	20	20	10
0480	10	30	20	20	10	10	30	30	30	30	30	30	30	10	20	20
0490	20	20	30	10	20	20	20	20	30	10	20	20	20	20	30	10
04A0	20	20	20	20	30	30	30	30	10	10	20	20	20	30	10	10
04B0	20	20	20	30	10	10	20	20	20	30	10	10	20	20	20	30
04C0	10	10	20	20	20	30	30	30	10	10	10	20	20	30	10	10
04D0	10	20	20	30	10	10	10	20	20	30	10	10	10	20	20	30
04E0	30	30	30	10	10	10	10	20	30	10	10	10	10	20	30	10
04F0	10	10	10	20	30	10	10	10	10	20	30	30	30	30	10	10
0500	10	10	10	30	10	10	10	10	10	30	10	10	10	10	10	30
0510	10	10	10	10	10	30	30	30	30	20	10	10	10	10	30	20
0520	10	10	10	10	30	20	10	10	10	10	10	30	20	10	10	10
0530	30	20	20	10	10	10	30	20	20	10	10	10	30	20	20	10
0540	10	10	30	20	20	10	10	10	30	30	30	30	30	30	30	20
0550	20	20	10	10	30	20	20	20	10	10	30	20	20	20	10	10
0560	30	20	20	20	10	10	30	30	30	30	30	20	20	20	20	10
0570	30	20	20	20	20	10	30	20	20	20	20	10	30	20	20	20
0580	20	10	30	30	30	30	30	20	20	20	20	20	30	20	20	20
0590	20	20	30	20	20	20	20	20	30	20	20	20	20	20	30	30
05A0	30	30	30	30	30	10	20	10	20	10	20	30	10	20	10	20
05B0	10	20	30	10	20	10	20	10	20	30	10	20	10	20	10	20
05C0	30	30	30	30	10	10	20	20	10	10	30	10	10	20	20	10
05D0	10	30	10	10	20	20	10	10	30	10	10	20	20	10	10	30
05E0	30	30	30	20	20	10	10	20	20	30	20	20	20	10	10	20
05F0	30	20	20	10	10	20	20	30	20	20	10	10	20	20	30	30
0600	30	30	30	10	20	10	20	10	30	10	20	10	20	10	30	10
0610	20	10	20	10	30	10	20	10	20	10	30	30	30	30	30	10
0620	10	10	20	10	20	30	10	10	10	20	10	20	30	10	10	10
0630	20	10	20	30	10	10	10	20	10	20	30	30	30	30	30	30
0640	30	30	30	30	30	30	30	30	30	30						

KNOT - SO - EASY (0080 - 0100)

0080	0001	0E10	2040	4020	00E0	1004	0402	0100
0090	0000	0306	0870	8000	0000	0020	1008	0804
00A0	2010	0C03	0000	0000	0000	0080	4020	1008
00B0	0000	0000	0102	0408	0408	1060	8000	0000
00C0	0000	0003	0C10	2040	0810	6080	0000	0000
00D0	0808	0406	0100	0000	0000	0000	8040	2010
00E0	4040	2020	1008	0700	0003	0418	2040	8000
00F0	0080	4030	0807	0000	1008	0408	3000	0000

R. CAMERON,

This interesting little program tests your memory to see if you can re-assemble a rope, (without any breaks), in exactly the same way you found it. When the program is run, there will be shown on the left hand side of the screen a continuous string of dots. (The rope.) After a short time, the computer jumbles up the picture, which is in a block of 4 X 4 squares.

The squares can be manipulated in the following manner. The co-ordinates of a square is 1 to 4 across, then 1 to 4 down. When the last digit of a co-ordinate is pressed, the square at the co-ordinate chosen, and the square on the right hand side of the single dot interchange positions. Thus you can move the squares around the block. To confuse things, the squares can be rotated around in a clockwise direction by the use of the (5) key. The computer also rotates the squares when it jumbles them up. To check to see if your picture is correct, press key (6). If it flashes off straight away, you have some more work to do. If a tone is heard, the picture is correct.

For a different picture, change the data from 0080 to 00FF. The starting address of each square is as follows.

0080	0088	0090	0098
00A0	00A8	00B0	00B8
00C0	00C8	00D0	00D8
00E0	00E8	00F0	00F8

0200	A080	6808	00E0	6600	6500	D568	8584	F81E
0210	3520	120A	8684	3620	1208	6080	F015	F007
0220	3000	121E	A201	6527	660B	D561	67FF	4700
0230	124A	0003	0801	8084	7001	2290	4005	1288
0240	0103	7101	229A	77FF	1266	F00A	03BF	4000
0250	124A	2290	4005	1288	4006	12A2	F10A	03CA
0260	4100	1250	229A	8300	8410	6200	73FF	3300
0270	7201	3300	1260	74FF	3400	7240	3400	1276
0280	02F6	2290	229A	122E	02BA	0208	2290	122E
0290	F029	6523	6607	D565	00EE	F129	6529	D565
02A0	00EE	035D	2290	124A	0E01	6786	27B7	032F
02B0	8D03	280E	0167	8D03	4439	00CE	0127	8609
02C0	6900	6640	F602	030B	08F7	0203	4A2E	F1F6
02D0	02C1	0808	F702	0106	40F7	0203	7A02	F12E
02E0	0D06	00F7	02C1	0640	F702	0306	08F7	02F1
02F0	3908	0127	0182	9632	B702	F3B7	02F5	86A7
0300	B703	2F8D	238D	3ACE	0127	9632	B703	2F8D
0310	1A86	27B7	02F3	8D29	0E01	A786	27B7	032F
0320	8D09	0E01	A78D	1D39	FE02	F2A6	00B7	0167
0330	0608	087C	032F	5A2E	F97A	035C	2EED	8D16
0340	39FE	02F2	8600	A700	0608	085A	2EFC	7A03
0350	5C2E	F38D	0139	8608	B703	5C39	080E	0080
0360	8D03	9AA6	00B1	0100	2640	08F6	0367	0B08
0370	F703	677A	03A7	2EEB	0608	F703	A77C	03A8
0380	0603	F103	A82C	D97F	03A8	F603	A90B	40F7
0390	03A9	C100	2721	20C8	0101	7F03	67F6	03A8
03A0	FB03	A9F7	0367	3908	0000	7F03	677F	03A8
03B0	7F03	A906	08F7	03A7	3906	32BD	C2E1	3986
03C0	0791	302F	0139	7F00	3039	8605	9131	2F01
03D0	397F	0031	3900					

(See the bottom of the previous page for 0080 - 0100.)

C. FETHERS.

The 'duck' flies around the screen, changing direction and speed when it hits the edge of the screen.

The player moves the sights of his/her gun to track the duck, using Key '8' Left, 'A' Right, '5' Up, and '1' Down. Press 'F' to Fire.

As more ducks are shot down, the duck tends to fly faster. It also flies off in a hurry when it is shot at, but missed.

After every shot, the number of rounds remaining is displayed briefly. When a duck is hit, it dies, and the number of rounds, and number of dead ducks are displayed.

The player starts with twenty rounds. When all ammunition is exhausted, the total 'bag' is displayed.

To change Key functions, insert the value of the key you wish to use at 02D1 for Left, 02D7 for Right, 02DD for Up, 02E3 for Down, and 0235 for 'Fire'.

0200	6200	6114	6C1E	6D1E	6A08	6B04	6500	6600
0210	6707	2200	680F	6E00	1244	0000	0000	0000
0220	4100	1280	22D0	2300	00E0	DAB4	A2F8	DCD2
0230	380F	121A	690F	E99E	121A	0000	0000	0000
0240	8EF0	71FF	00E0	6900	8F10	2300	A2F8	DCD2
0250	3E00	12B2	23B4	DAB4	F818	6800	2200	6301
0260	121A	CA3F	80A0	6F38	80F5	3F01	125A	1262
0270	6918	89B5	3F01	6B18	00EE	0000	0000	0000
0280	00E0	6A10	6B00	A0A0	F233	F265	F129	DAB5
0290	F229	6A20	DAB5	1296 ¹⁰	A2AA	DAB7	F818	DAB7
02A0	4B18	1262	7B01	2270	1298	1038	3838	1010
02B0	1000	7201	8F20	6938	2300	6803	1298	0000
02C0	C007	8400	8404	8404	8444	2350	00EE	0000
02D0	6900 ⁰⁰	E9A1	7CFF	690A ⁰⁰	E9A1	7C01	6905 ⁰⁰	E9A1
02E0	7DFF	6900 ⁰⁰	E9A1	7D01	690F	E99E	680F	00EE
02F0	0624 ⁶⁷	3C18	00EE ⁶⁷	3C18	C0C0	FFFF	FFFF	0000

0300	0000	0000	76FF	3600	13B4	8040	B30E	0000
0310	7BFF	133C	7A01	7BFF	133C	7A01	0000	133C
0320	7A01	7B01	133C	0000	7B01	133C	7AFF	7B01
0330	133C	7AFF	0000	133C	7AFF	7BFF	0000	0000
0340	0000	0000	0000	0000	0000	0000	0000	0000
0350	3A38	1358	640F	136E	3B00	1360	6409	136E
0360	3B10	1368	6415	136E	3A00	13B0	6403	4205
0370	6703	420A	6701	420F	6700	C3FF	8372	7301
0380	C003	4003	1380	8404	8404	8404	0000	0000
0390	6915	8945	3F01	74E8	8444	0000	0000	0000
03A0	0000	0000	0000	0000	0000	0000	0000	0000
03B0	8630	7580	A2F0	3500	A2F4	00EE	0000	0000
03C0	0000	0000	0000	0000	A0B0	F255	A0A0	FF33
03D0	F265	0000	0000	F129	23E4	F229	23E4	A0B0
03E0	F265	00EE	6F1A	D9F5	7904	00EE		

0000 F00A 300F 10E0 00E0 1200

SLIDE

(0200 - 0400)

Slide is a two person game. Each player tries to slide a 'puck' over the high-scoring 'spots' without hitting the back wall.

The 'puck' moves up and down randomly. Press key 'O' to stop the puck. The puck will move towards the spots after you release the key. The longer you hold the key down, the further the puck travels. (Maximum time is approximately 2.5 seconds.)

You get two points for hitting the first spot, four points for either of the next two spots, and eight points for either of the last two spots. The highest score possible is 216. (Two spots can be hit on one slide.) If you hit the back wall, though, you get zero points for that slide, even if you have hit a spot.

Each player gets three pucks per turn, and six turns in a game.

```

0200  00E0 A360 6800 6900  6201 230E 62FF 230E
0210  6A00 6B00 6406 6C00  2328 6C01 2328 A359
0220  6D28 6E12 DDE3 6D30  6E0E DDE3 6E16 DDE3
0230  6D38 6E0A DDE3 6E1A  DDE3 6C00 6D03 2258
0240  6C01 6D3B 2258 74FF  3400 123A 620F F218
0250  6118 F115 1366 1256  6204 234C A357 6E03
0260  DDE2 6503 6600 6E70  A35C 6805 6909 D894
0270  6D01 6111 0218 7208  234C D894 89D4 D894
0280  71FF E0A1 1292 3100  1274 4DFF 1270 6DFF
0290  1272 6202 F218 6210  234C 3E00 7EFE E0A1
02A0  1296 6210 234C E0A1  1296 6204 234C 83E0
02B0  83E4 8230 234C 7E02  D894 7801 D894 4F01
02C0  12F8 3E70 12AE 6280  237A 2328 3C00 12D4
02D0  8A64 12D6 8B64 2328  A35C D894 6220 F218
02E0  75FF 3500 1264 A357  6E03 6D03 3C00 6D3B
02F0  DDE2 6204 234C 00EE  6202 F218 483C 12D8

0300  4825 7602 482D 7604  4835 7608 1374 613F
0310  D891 71FF 8824 3100  1310 611F D891 71FF
0320  8924 3100 1310 00EE  A361 6E02 6D08 FA33
0330  4C00 1338 6D28 FB33  F265 F029 DDE5 7D06
0340  F129 DDE5 7D06 F229  DDE5 00EE 7202 72FF
0350  3200 134E 00EE 01C0  C0E0 A0E0 F0F0 F0F0
0360  8000 0008 00D4 F107  3100 1366 72FF 3200
0370  124E 1372 3E70 12AE  12C6 F215 F207 3200
0380  137C 00EE

```

DREAM INVADERS MODIFICATION

Mark Armstrong, [REDACTED], sent us this mod. He writes "For people who tend to 'freeze' the score in round 11 when they play Mike Bauer's 'Dream Invaders', and who want to avoid the 'warmup' rounds and get straight into the action, the following mods to Dream Invaders will make all rounds as difficult as round 11. As far as I know, no-one has ever complained of freezing the score with this great game!"

<u>ADDR.</u>	<u>FROM</u>	<u>TO</u>	<u>FUNCTION</u>
0602	96	86)
0603	A7	FA	)Speed
060F	90	80)
0610	A7	FA	)Drop rate
061C	D6	C6)
061D	B5	06	)Number of Alien missiles/invaders

F. VIG,

Unless forced to make some other play, the program will randomly select any open position as its play. The player (X) has first turn, unless key 'F' is pressed. An incorrect entry will cause a ? to be displayed for two seconds.

P displayed = Player's turn.

W displayed = Player Wins.

L displayed = Player Loses.

D displayed = Drawn game.

Keypad layout;

C	D	E	F
8	9	A	B
4	5	6	7
0	1	2	3

Digitran keypad;

Change,
023E to 6E00
024C to 6E16

0	1	2	3
4	5	6	7
8	9	A	B
C	D	E	F

0200	6000	6100	2358	6000	611A	2358	6009	6109
0210	2364	6014	6109	2364	6300	6000	6200	A3DA
0220	F21E	F055	420B	122C	7201	121E	6E0B	6D30
0230	A3D2	DDE8	F00A	DDE8	400F	12FA	6A11	6E16
0240	4000	126E	4001	132C	4002	1328	6E00	4008
0250	126E	4009	132C	400A	1328	6E0B	4004	126E
0260	4005	132C	4006	1328	4A11	130E	133C	6D0A
0270	A3AA	4A11	A3A2	DDE8	4F01	1304	7101	A3DA
0280	F01E	6202	3A11	6209	8020	F055	6700	6900
0290	8090	B370	8680	A3DA	F61E	F065	8500	8644
02A0	A3DA	F61E	F065	8504	8644	A3DA	F61E	F065
02B0	8504	3700	12C6	4506	134A	451B	1346	492A
02C0	12E8	7906	1290	4A00	12BE	4311	12BE	6311
02D0	4701	12DC	4702	12E2	6300	12BE	4512	12FA
02E0	12D8	4504	12FA	12D8	4702	12F0	7701	128E
02F0	6300	4136	134E	3A11	122C	6A00	1312	6B11
0300	C007	123E	DDE8	4A00	1334	6E0B	6D30	A3B2
0310	DDE8	6C60	FC15	FC07	3C00	1316	4311	1330
0320	4A00	12FE	DDE8	122C	6D24	1270	6D17	1270
0330	8080	123E	4300	133C	8044	123E	3B11	12FE
0340	7003	6B00	123E	A3C2	1350	A3BA	1350	A3CA
0350	6E0B	6D30	DDE8	1356	A3A0	D101	7001	301E
0360	135A	00EE	A3A1	D101	7101	312D	1366	00EE
0370	6800	6404	1294	6801	6404	1294	6802	6404
0380	1294	6800	6401	1294	6804	6401	1294	6808
0390	6401	1294	6800	6405	1294	6802	6403	1294
03A0	0180	8142	2418	1824	4281	3C42	8181	8181
03B0	423C	000E	1102	0404	0004	0011	1111	1515
03C0	1B11	0010	1010	1010	101F	001E	1111	1111
03D0	111E	001E	1111	1E10	1010	0209		

HOW TO SUBMIT PROGRAMS

To remain in operation, we need a constant supply of new programs, and articles about the DREAM 6800. If you can write an article on modifications you have made to your DREAM, or the use you are making of it, or if you have written any games, or utility programs, we invite you to submit them to us for consideration. ALL CONTRIBUTORS OF PROGRAMS PRINTED WILL RECEIVE VOUCHERS FOR TWO FREE NEWSLETTERS. CONTRIBUTORS OF ARTICLES AND IDEAS PRINTED WILL RECEIVE FROM ONE TO THREE VOUCHERS, BASED ON THE GENERAL INTEREST CONTENT OF THE ARTICLE, AND THE AMOUNT OF WORK THAT HAS GONE INTO IT. Along with the listing for all programs submitted, we will need a tape recording, with at least twenty seconds of High and Low "leader" on it. We need a leader to align our tape heads, and tune the DREAM input port. To do this you first must record 20 Sec High tone, then 20 Sec Low tone. The High tone is normal leader, and can be recorded normally. To get the Low tone, load in the following Machine Code program.

```
0200      8640  Accumulator A = 40
0202      B78012  Store in PIA output port.
0205      20FE  Branch back 2 bytes from 0207
0207      0000
```

This will produce a continuous Low tone when run 0200, FN, 3. After 20 seconds press RESET to return to normal. Then load your program. We need the electronic copy so we can test the program and verify the listing BEFORE printing, to eliminate program errors and increase the enjoyment of other users.

We will not be able to enter into correspondence, but will print corrections or improvements where necessary. We will not be selling tapes.

Programs submitted for consideration should be typed, for clarity, and set out in the following format:-

- 1) Program name and memory location.
- 2) Your name and address. (If you do not wish to receive any correspondence from other users, omit your address.)
- 3) The program explanation. (Don't forget key functions)
- 4) The program listing, typed single space. (If in doubt, have a look at the way the programs in this issue have been typed, and copy the format)

Following the guidelines set out above lets us check out the programs submitted quickly and easily. If you do not have access to a typewriter, we will accept a handwritten listing, providing it is LEGIBLE, and accompanied by a tape. However, if we cannot read your writing, and the tape will not load, or has 'bugs' in it, there will be no way we can check the program, and it will not be considered.

That's all there is to it, so send us in your favourites, and don't forget, for each one we use, you get vouchers for two newsletters free of charge. Should you be a prolific programmer, and accumulate some surplus vouchers, or have already paid a subscription to the newsletter, we will redeem the vouchers at a rate of six vouchers for \$15-00.

PRICE STRUCTURE

The cost of this newsletter is \$3-50 per issue. An advance subscription is available at reduced cost. Please write for details of cost and length of time remaining in current subscription period.

BACK ISSUES. Copies of all newsletters from No.1, September, 1980, are available at a cost of \$4-00 each, from:-

N.S.W. 6800 USERS GROUP,
[REDACTED]

(Please add -10c to all CHEQUES sent from outside N.S.W., to cover Stamp Duty charged by N.S.W. Government. This is only required on cheques and does not apply to Money Orders etc.)
