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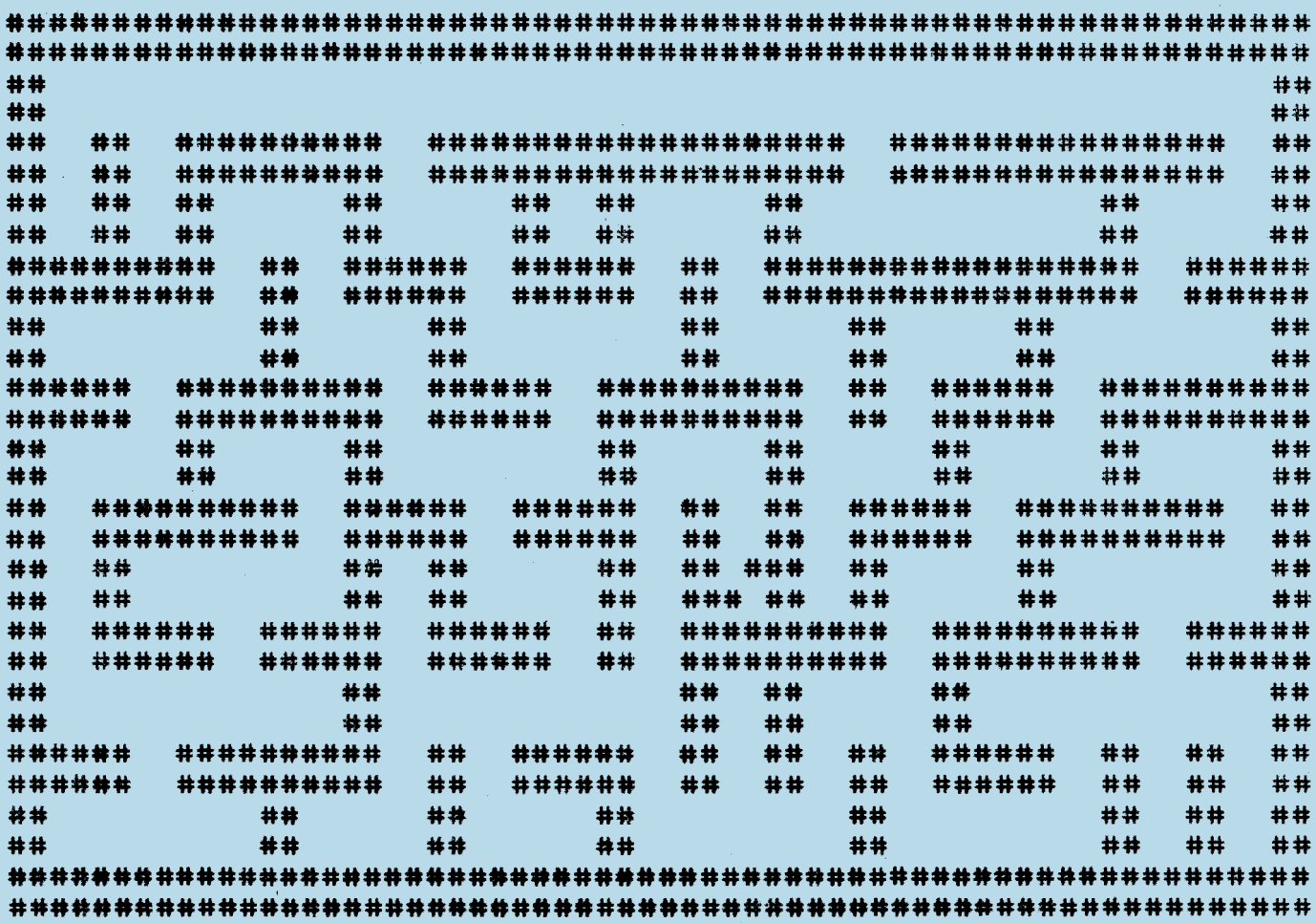
DREAMER Nö 13
SEPT. '81.

N. S. W. 6800 USERS GROUP,

[redacted]



A-MAZE-ING

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.13 SEPTEMBER, 1981.

The article in Dreamer No.11 on how to add an ASCII keyboard to your DREAM seems to have created quite a bit of interest and this month we have 3 new programs to help you use it. The first one, 'Video Typewriter', is for those of you with a DREAMSOFT No.1 Package, to allow you to write DREAMTEXT on the screen, using the new keyboard. The second one, 'ASCII Typewriter', does a similar thing for those of you who do not have a DREAMSOFT EPROM. No.3 is a short Machine Code program which displays the selected key on the screen, so you can check that your keyboard wiring and look up table are correct.

We also have 'Strip Jack Naked', which DREAMCARDS have been giving away with 'Dream Rummy'. Lindsay has asked us to stress that this is NOT representative of the DREAMCARDS games, as it is one of his earlier attempts, and does not have a 'memory mapped' deck. (This means that it is possible for the same card to be played more than once in each game.) He also pointed out that he does NOT intend to release either 'DREAM RUMMY' or 'DREAM PONTOON' for publication in the Dreamer, so if you want either of these, (and they are BOTH top class games), the ONLY place to get them is from the DREAMCARDS organisation. (See their advertisement in this issue for details.)

NEXT MONTH - We will have, a review of 'Dream Pontoon', six or seven new games, a couple of utility programs, plus a big surprise. (It will even be a surprise for us, because we haven't decided yet which articles to include.)

HAPPY DREAMING,

GARRY and GRAEME.

****

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
- DRAUGHTS
- A LIGHT PEN
- A 'WESTERN GUNFIGHT'game
- More 'Joystick' programs
- A FLIGHT SIMULATOR game
- A MORSE CODE DECODER
- An EPROM PROGRAMMER
- Radio Amateur Orientated programs
- More 'Serious' programs

****

AMENDMENTS

Jim Panos has advised us of two improvements to his 'Fully Automatic Four Wheel Poker Machine' published in Dreamer No.12.

No.1: The ACE on the 3rd wheel never shows up.
Change 0332 from 30C6 to 10C6

No.2: When AAAA or 7777 is obtained, the counter increments 240 instead of 1,000.
Change 03EE from 39C0 to 39E0.

And, for the frustrated gamblers, a 'helping hand' from Jim:

"The normal chances of AAAA or 7777 coming up is approximately 1 in 10,000. I have never got it yet. If you would like to see these come up before your DREAM wears out, then change the following:-

To see AAAA, at 0084, insert 18 14 02 06, or
To see 7777, at 0084, insert 0E 05 18 0D.
Then, change 02F2 from CF1F to 1300, and run the program as normal.

AMENDMENTS (Cont)

You may then open up a bottle of booze and celebrate. This way you shall always be a winner. To restore program back to normal just re-enter original data at 02F2 (I.E. CF1F)"

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From Bruce Mitchell, a modification to the 'Storyteller' program, also published in Dreamer No.12.

"This modification inserts '07' at 0200 and will print the location of the end of the story, thus saving untold fooling around.

Run from 1780 to enter story, and from 17CE to check, as before."

CHANGE 1788 to '01', THEN:-

```
17C0   27 04 81 07 26 C3 7E 17   E0 00 00 00 00 00 BD 19
17D0   A4 CE 02 01 A6 00 81 07   27 EC BD 19 56 08 20 F4
17E0   86 0A BD 19 56 86 1B BD   19 37 86 3F B7 80 13 86
17F0   07 B7 02 00 7E 1C 00
```

****

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.

++++++++++++++++

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.

All interested, whether DREAM owners or not, are invited to attend. For details, contact MILTON COLLINS, [redacted]

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WANTED TO BUY: MODEL 15 TTY, must be fully working. Information or manual needed, but not essential for sale. Will pay any reasonable price.

Please contact SIMON FINCH on [redacted] after 7.00p.m.,Monday to Thursday, or write to [redacted]

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BACK ISSUES

As we foreshadowed last month, our supply of back issues is now exhausted, with the exception of No.11 and No.12, which will still be available for $4-00 each, posted. We will however be able to supply photo-copies of Issues No.1 to 10, but due to the cost of having them copied, plus the extra postage, (twice as many pages, due to only being able to photo-copy on one side of the paper,) we have been forced to price these at $6-00.

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REVIEW OF THE DREAMSOFT No.2 PACKAGE.

The DREAMSOFT guys have launched a new Software package, as you will have noticed from their advertisements in the DREAMER. We were certainly intrigued by those ads, and keen to see what the EPROM did for the DREAM, and whether it lived up to the advertisements. Here is what we found.....

The DREAMSOFT No.2 PACKAGE comes in a 2K EPROM like the No.1 Package, but it is not intended to be located on an expansion board. You simply plug it into your DREAM in place of the CHIPOS EPROM. Some minor changes to the board are required, but these are clearly documented in the handbook supplied. No P.C.B. tracks need to be cut, just 2 links changed. The + 12V power supply is then no longer required.

The No.2 handbook contains about 30 pages. There is an introduction, installation instructions, a section on testing the functions of the EPROM and familiarising yourself with it, flow-charts, a list of user-callable sub routines, and a complete listing. The information is clear and easily understood, like that in the No.1 handbook, but the quality of printing is a lot better. In fact, we understand that they wrote a special disassembler program, which allows comments to be typed in after each line is printed, just to produce this listing.

It appears that the Chip-8 Interpreter part of CHIPOS is unchanged, but DREAMSOFT have provided a new operating system. When the EPROM has been installed, (a simple matter), and the computer powered-up, it takes on a whole new personality! Operating the RESET key causes the word 'ADDRESS ?' to be displayed. You then key in four digits, each of which is displayed as it is entered. The picture scrolls up and the address you just entered is displayed on the familiar white bar, along with its contents and the contents of the next address. This suits the CHIP-8 double-byte instruction format.

This stage of the program, (an address and its two byte contents displayed on a white bar at the bottom of the screen) is what DREAMSOFT call the 'CURRENT ADDRESS' phase and from here you have nine options. You can press a key in the range 0 - 7, or hit 'FUNCTION'. 'RESET' of course returns you to the 'ADDRESS ?' prompt.

KEY 0: Returns to the old MEMOD. The current address and its single byte contents are displayed and may be changed as with CHIPOS. RST is the only way to escape from THIS 'MEMOD'.

KEY 1: Tape Load - same as CHIPOS. Start and End Addresses must have been loaded into 0002-5.

KEY 2: Tape Dump - Same as CHIPOS.

KEY 3: Executes a program starting at the current address - just like FN, 3, in CHIPOS. I.E. If it is a Chip-8 program, the current address must be C000.

KEY 4: The picture rolls up one line and a new current address (2 bytes greater than the last) appears on the bottom line. To check a program you can keep pressing Key 4 and the sddresses and their 2 byte contents keep scrolling up the screen. The screen shows four such lines, the bottom one being the CURRENT ADDRESS.

KEY 5: Same as key 4, except that the addresses are DECREMENTED by 2 each line. Thus if you see a mistake, you can step it back to the correct address to change it.

KEY 6: The picture rolls up to put the address (and contents) on the top of the screen. Immediately under this, a line of Mnemonics is displayed explaining what the instruction means. A new current address (two more than the top one) is displayed on the bottom line. You can keep pushing Key 6 to step through a program one instruction at a time. The Mnemonics are similar to those used in the Chip-8 Disassembler published in DREAMER No.10. The screen looks something like this:-

```
0240   DAB5
SHOW 5 AT VA, VB

0242   1234
```

KEY 7: Causes a jump to 1C00. This is for those who have a DREAMSOFT No.1 EPROM.
KEYS 8 - F: Produce the same results as Keys 0-7.

FUNCTION KEY: This invokes the new MEMOD. The current address (and contents) scrolls up one line. The same address appears on the bottom line without the contents displayed and waits for you to enter four digits. These are displayed as you enter them, and when the last one is entered, the picture scrolls up one line, and the next address appears on the bottom line. This means that as you enter data from the keypad you can see what you have just put in. Operating the FUNCTION key again returns you to the CURRENT ADDRESS phase.

DREAMSOFT have asked us to stress that this package is completely independent of their No.1 Package. Your computer can be equipped with one or the other, but of course they hope you get both! There is very little overlap of functions and they complement each other nicely. A good example of this is the Tape Load and Tape Dump functions. The No.1 package simplifies tape handling, by asking you for Start and Finish addresses and giving you a Tape Verify function. It does however use the input and output subroutines in CHIPOS, which have some shortcomings ; A drop out in the leader tone will cause an FF to be loaded ; a loss of signal will cause a string of 00's to be loaded and bits are shifted along the PIA, which can confuse things if these lines are used for other purposes. In the No.2 package, these problems have been fixed, but you still have to load Start and Finish Addresses with MEMOD. Thus, if your system is equipped with both EPROMS, you get the best of both worlds.

Another example of both DREAMSOFT Packages co-operating is the BYTIN subroutine (at C390). In CHIPOS, this subroutine got two Hex digits from the keypad, combined them into a byte and returned with this value in A. DREAMTEXT, in the No.1 Package, uses BYTIN for entry of it's ASCII codes. In the No.2 Package, BYTIN, (still at C390), runs in a loop which includes an optional, user supplied, routine for reading an ASCII keyboard, such as the one we featured in DREAMER No.11. This means that you can put data into DREAMTEXT from either keyboard. The handbook gives full details, including flow charts.

There is a small overlap of functions. The No.1 Package has very comprehensive 'VDU' subroutines which display ASCII characters and respond to cursor-positioning codes. In order to make their two packages independent, DREAMSOFT have had to provide another 'Message Display' subroutine. It is a "stripped down" version of the No.1 message display in that it has fewer characters and a non-standard code. Users who do not have a No.1 package will still find this useful for displaying text.

DREAMSOFT have taken care to preserve the old start addresses for subroutines in CHIPOS. This is to make the EPROM compatible with software which called CHIPOS subroutines. In general, all previous software will run with the new package - there are however some exceptions. No programs may be stored in the screen memory area, as they will be erased on RESET. This is really a minor point, as it is not considered good programming practice, and very few programs use it. Also, no program may use BYTIN and scratchpad locations 0040-41.

CONCLUSION: Another well presented and useful package from the 'Dreamsoft' people. We think it is quite reasonably priced for what it contains, and the work that has gone into it. The new operating system, with it's 'on screen' prompts, makes the DREAM easier to use for those new to it, particularly children, and the built in disassembler, (Key 6), will be a great help to those (like Garry) who are trying to learn to write programs for the beast. Although the No.2 package has been designed to 'stand alone', it is, of course at it's best when combined with a No.1 package on a memory expansion board. If you do not have any extra memory, we feel it is still a worthwhile addition to your DREAM, for the extra features it contains. Available only from the DREAMSOFT organisation, see their ad in this issue for details.

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ANYONE FOR "DREAM (SPUT! DOINNG! BONG!) PONTOON"?

(or "Sound Effects Transplants without Tears")

by Lindsay R. Ford,
('Dreamcards'),
[redacted]

Imagine you're now 30 minutes into a game of 'Dream Pontoon' (or 'Iago', 'Astro-Fighter' or whatever) and the tension is gripping. Not only has the computer been slaughtering you, it had the infernal cheek to laugh the last time it got you with a 'five-under'. But now the tables are turning. You've just got the Bank and you're fighting back. The silence is .... SILENCE ?????

Whoever heard of card games (or any other game, for that matter), played in silence? After all, you could hardly class that constipated little squeak you get on keypress or "tone" as anything else. By the ten thousandth repetition you just don't hear it any more.

Well Michael Bauer's ingenuity has come to the rescue again. His Sound Effects Generator (May 'Dreamer') gives a tremendous range of really interesting 'Moog Synthesizer' noises that should well and truly liven up any Chip 8 programme. The only question you may have asked yourself is; "how the hell do I use it?"

For those of you who are not too adept at gobbledegook like 'STA A' and 'BADRED' (and isn't that most of us?), here's a routine that was primarily designed for use with the new 'Dreamcards' game of 'Dream Pontoon', but which can easily be adapted to suit any Chip 8 programme.

	Address	Data									
			#A			#B			#C		
Sound #1	0EE0	86	70	BD	0F6A	86	08	7E 0F23			
" #2	0EEA	86	01	BD	0F6A	86	C2	7E 0F23			
" #3	0EF4	86	80	BD	0F6A	86	28	7E 0F23			
" #4	0EFE	86	70	BD	0F6A	86	04	7E 0F23			
" #5	0F08	86	40	BD	0F6A	86	C6	7E 0F23			
" #6	0F12	86	01	BD	0F6A	86	0C	7E 0F23			
" #7	0F1C	86	80	BD	0F6A	86	C1	BD 0F8B C6	40	7E	0F50
" #8	0F2B	86	01	BD	0F6A	86	D6	BD 0F8B C6	20	7E	0F50
" #9	0F3A	86	41	7E	0F46						
" #10	0F3F	86	EF	7E	0F46						
" #11	0F44	86	C0	BD	0F6A	86	D2	BD 0F8B C6	04		

Make Sound	0F50	7F 00 20 7D 00 20 27 FB 7A 8022 7A 8022 5A 26 EF C6 3C F7 8021 39
Set up Gen.	0F67	BD C287
Initialize	0F6A	C6 04 F7 8023 7F 8022 7F 8023 B7 8022 39
Sound #12	0F79	7C 00 9A CE DF 20 BD 0F61 DF 26 96 27 B7 8022 96 26
Enable	0F8B	CE 8020 C6 38 E7 01 C6 FF E7 00 C6 3C E7 01 A7 00 C6 34 E7 01 39

If you've got 4K RAM (or less, but see below) and a Sound Effects Generator, then key in the listing above, then;

0200	0F67	Set Up Sound Effects Gen.
2	F00A	Get key → 0
4	4000	Skip if key ≠ 0
6	0EE0	Else make Sound #1
8	4001	Skip if key ≠ 1
A	0EEA	Else make Sound #2

etc. etc. etc.

```
022C  |  400A    Skip if key ≠ A
  E   |  0F44    Else make Sound #11
0230  |  400B    Skip if key ≠ B
  2   |  0F79    Else make Sound #12
  4   |  1202    and loop to key again
```

Now start it up with a C000 (FN) 3 and press any key between 0 and B. Weird?? Try another key and see what you get.

The idea of this little exercise is to show you how to access a multiple sound effects routine using a Chip 8 programme (which is the way you'll be doing it if you want to write sound effects into any of the games published in the 'Dreamer' to date). The trouble is, you'll also need a bit of flexibility - after all, you may not want a dozen sounds or a special routine perched way up in the top end of RAM. This is how to juggle the routine to suit your particular needs;

1) Altering Sounds: To change the sounds in each routine (#1 to #11) alter the data in column #A to vary the frequency ("VCO Frequency", explained in Mike Bauer's diagram in the May issue), column #B to change the composition of the sound (MJB's "Patch" control) and column #C to change the length of time the routine is in operation.

   Note that the version of the routine shown here has column #C (duration) data in Sound #7 that also determines the duration of Sounds #1 to #6 and #C data in Sound #11 that determines #9 and #10. Only #8 is unique! If you study the listing it should soon become obvious how you change column #C (and/or its branch instructions) about to give the desired times - just remember to set it so that the sound isn't cut off half way through. A good way to test that the duration is adequate is to substitute a "Let $\overline{0}$ = 1" (or 2, 3 or whatever - ie: '6001', '6002' etc. in Chip 8) instruction for the 'F00A' instruction in our test routine so that it keeps repeating the desired sound. Then adjust the #C data so that you get the sound you want without any delay between repetitions.

2) Taking it Down; If you'd like to get the routine down from 0EE0 to some more respectable position (it was put there to suit 'Dream Pontoon"), then alter all of the branch addresses (the underlined four digit addresses in the listing) to suit the new location. Be sure they still point at the same relative positions in the listing they did before you shifted it, though, or the whole routine may eat itself!*

3) Cutting out Sounds; You can delete from (or add to) the range of sounds by adding or deleting sound routines. Once again, make certain that the underlined branch addresses still point to the same relative positions once the routine has been re-written.

4) Getting Started; One last word (that should have been at the beginning) - when you use the routine you'd better make sure that early on in the programme you shove in an instruction to set up the Sound Effects Generator (in our "keyboard" example it's at 0200). Once done it can be forgotten for the rest of the programme.

Now, for the people who have written to me asking how to add sound effects to "Dream Pontoon" and "Dream Rummy", here's the necessary mainline changes using the routine shown above ("Dream Rummy" players might like to do some doctoring as in 2), above).

"Dream Pontoon" Mainline changes

025A	to	'2FA6'	0356	to	'0EE0'	0402	to	'0F79'	044C	to	'0F44'
0534	to	'0F3F'	0574	to	'0F3A'	06E0	to	'0EEA'	06E5	to	'FC'
0725	to	'2E'	0728	to	'0EF4'	072B	to	'32'	081C	to	'0F79'
0BCC	to	'0F2B'	0BDC	to	'0F2B'	0BFE	to	'0EFE'	0C3E	to	'0F08'
0C6E	to	'1FA2'	0C74	to	'1FA2'	0C80	to	'0F1C'	0E6F	to	'E4'
0FA2	to	'0F12'	0FA4	to	'00EE'	0FA6	to	'0F67'	0FA8	to	'1432'

"Dream Rummy" Mainline changes;

0200	to	'277E'	028C	to	'0EF4'	02A2	to	'0EF4'	02E4	to	'0F3A'
033A	to	'0EE0'	0360	to	'0F44'	03D0	to	'0F1C'	03DF	to	'05'
0420	to	'0F3F'	043D	to	'20'	05FC	to	'0F79'	0769	to	'A5'
077E	to	'0F67'	0780	to	'6000'	0782	to	'00EE'			

Incidentally, a couple of tips for those who are about to build the Sound Effects Generator;

* If you're having trouble getting the 76477 Chip then try "Ellistronics" at 289 LaTrobe St., Melbourne - (03) 602 3282 - they had a good stock last time I checked and they're usually able to supply bits and pieces cheaper than most (I don't have any axe to grind for them - I just hate getting ripped off!)
* Don't let the PC Board put you off - the artwork in the 'Dreamer' isn't clear enough for a photographic reproduction and etch, but most of us wouldn't have the gear for it anyway. Get a piece of PCB of the right size and a pack of rub-on PCB material from Dick Smith (it's like Letraset only it has PCB tracks, IC tabs etc.) and copy the artwork onto the blank PCB by hand. Cut the track you're about to rub on using a razor blade on the sticky side of the sheet, use light pressure with a pencil and try to keep your grubby little hands off the PCB (otherwise the copper tarnishes very quickly). When you have finished lay a sheet of the interleaving paper over your PCB and rub on it with the end of a biro or some other blunt object to make sure the tracks have stuck. When you do the etching you might try Ammonium Persulphate and water instead of Ferric Chloride and water (same proportions). Keep the solution hot (just at the point where it's a bit too hot to keep your fingers in) whilst etching. You'll find Persulphate makes a better etchant than FeCl as it's quicker, cleaner and as it's clear you can see what's happening as you etch (ie: if any tracks lift!)

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STORING OPERATING INSTRUCTIONS

B.N.HUSSEY.
[redacted]

With more and more programs becoming available for the DREAM 6800, the need has arisen for a convenient means of storing the information or instructions required to operate each individual program.

The following is one method which allows you to store this information on tape relative to the program on tape to give you the instructions required, on the T.V. screen.

This method does not require additional memory space and unless the program runs from 0200 ⟶ does not require a longer recording.

In order to use this system the program must begin at a location before, or at 0100. E.G. 0080 - 0400.

If the program starts at location 0200, then record from 0100 ⟶ and always play back from 0100.

1. If the program starts before 0100 (i.e; 0080), load this program into the DREAM and dump back onto a spare tape from 0200 ⟶

2. Load into the DREAM either T.V.Typewriter or T.V.Pencil and print onto the screen the information you would like stored.

E.G. 1. Left
2. Fire
3. Right

or,

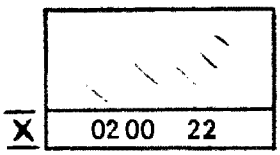

Alien


Base

Remember not to use the bottom part of the screen, which will be reserved for address and memory contents.

I.E.

(The bottom 7 pixels)



3. Load back into the DREAM your original program from beginning to 0100. (DO NOT PRESS FN, 3.)

4. Load into DREAM the program on the spare tape from 0200 ⟶ (Remember? You recorded it from 0200 ⟶)

5. Finally, dump onto a master tape the whole program from beginning to end.

If the program originally started from 0200, then omit steps One and Three, and at step Five, load your program from 0100.

Now, whenever you load that program into the computer, the information required to either play the game, or just a picture, etc., will appear on the screen and remain until you press FN, 3.

****

WHAT IS THIS?

DANOR	SUPUF	JAQAR	HOXIX	GIQAQ	SEBUL	KOWAJ	SEPUQ
ZIZEM	SIXET	JOWOH	GATUC	COTOK	NUTUW	PESAL	WAGOS
SOQOL	FIFOZ	MUVIJ	QUREB	NOFUM	SULAJ	MACOC	JULEV
ZINEN	XETUZ	QIQUB	PEYAV	BIBIW	XULUC	KOCON	LEJET
YIXOS	JIVOS	SIKIH	NOHIF	VUYEN	MUZUH	YAXIY	NUHET
HUBUC	PIPUV	DEBAG	NIVOM	PIQEM	JUYEF	DUROB	DUVUD

(See Page 10 for the answer.)

****

A-MAZE-ING

(0080 - 0400)

(Requires 2K)

GRAEME V. SAMWAYS.

You draw a maze, then put in some food. (If you want to be mean, don't put in any food!) Then, set a mouse free and watch it search for the food. The mouse will either find the food, tell you there is none, or go mad in a loop.

When you draw the maze, anything goes except loops, although some of these will work if approached properly. To draw the maze, move the cursor by pushing;

4 UP LEFT	5 UP	6 UP RIGHT
8 LEFT		A RIGHT
C DOWN LEFT	D DOWN	E DOWN RIGHT

When the cursor is in position, push Key 2 to erase or return that square. After you have drawn the maze, position the cursor and press key 0 to deposit some food. This can be done any number of times, or not at all.

Then, locate the cursor at the entrance to the maze and press key 1 to set the mouse free.

To interrupt the search, hold down key 3 until bleeping starts. If the mouse finds the food and starts to bleep, hold down key 7 until the tone changes. This is the same tone as for 'interrupt' and no movement is possible. Press key B to return to the same maze, or key F to erase the maze and start again.

The program listing ends at 03FF. The program uses 0400 - 0500 as workspace to store the 'dead-end' data. This ensures that the mouse only searches each dead-end once, and remembers afterward that there is no food down there.

```
0080   6E01 6D10 FD15 FD07   3D00 1086 22F8 4401
0090   7A01 4402 7BFF 4404   7AFF 4408 7B01 22F8
00A0   3E01 10C8 6E00 1082   6CFF 8430 F418 1080
00B0   6E0B 6F0F EFA1 13B6   EEA1 1348 FF18 FE15
00C0   FE07 3E00 10C0 10B0   6603 E6A1 10B0 10D0
00D0   2378 4201 10A8 4202   1314 8620 8730 68FC
00E0   6001 4000 10F8 7804   A400 F81E F365 5A00
00F0   10E2 5B10 10E2 1300   8260 8370 67FF 1300

0200   6A01 6B01 A228 221E   A230 DAB4 6A01 7B04
0210   3B1D 1204 A22C 221E   A234 DAB2 123A DAB4
0220   7A08 4A39 00EE 121E   FFFF CCCC FFFF 0000
0230   FCFC CCCC FCFC 8040   C0C0 6A01 6B03 0000
0240   0000 A236 DAB2 F80A   DAB2 480C 7AFE 480C
0250   7B02 4800 7B02 480E   7A02 480E 7B02 4800
0260   7AFE 480A 7A02 4804   7AFE 4804 7BFE 4808
0270   7BFE 4808 7A02 4806   7BFE 12B0 A238 3802
0280   123E 4A01 12A8 4A3D   12A8 4B01 12A8 4B1D
0290   12A8 6C3F 76C2 4A3F   12A8 6C1F 8BC2 4B1F
02A0   12A8 A238 DAB2 123E   6C20 FC18 123E 0000
02B0   4801 12BE 3800 127C   A376 DAB2 127C 7A01
02C0   7B01 DAB1 6000 A400   F055 A236 10D0 0000
02D0   4401 650B 4402 6507   4404 650E 4408 650D
02E0   8352 72FF A400 F81E   80A0 81B0 F355 6000
02F0   47FF F055 6C00 00EE   A236 DAB1 00EE 0000
```

(See page 10 for 0300 - 0400.)

NAMES (0200 - 0300)

G. LEADBEATER,
[redacted]

This is a fun program which uses the random number generator in CHIPOS to make up ridiculous five letter words. Use it to provide names for your Boat, your House, your Business, your Pets, your Programs, or your Children.

The program was written to illustrate the use of some of the sub-routines in the DREAMSOFT EPROM.

Two versions of the program are presented, both fully relocatable without change. The first one, for those without Teletypes, displays the names on the screen. The names appear at the rate of one per second on the bottom line and scroll up to disappear off the top of the screen. The data at 0201 dictates the time between words.

The second version, for Teletypes, prints out the names, ten to a line. The data at 0209 sets the number of words per line.

A sample printout from the program is shown below.

The second and fourth letters of each word are vowels, to make the words reasonably pronouncable.

If your computer is NOT equipped with a DREAMSOFT package, do it a favour and order one now.

Both versions are written in Machine code and should be run 0200, FN, 3.

VERSION 1.

```
0200    C6 03 86 0D BD 18 A4 86   0A BD 18 A4 8D 05 BD 1C
0210    68 20 ED 8D 06 8D 0B 8D   02 8D 07 8D 0C 27 FC 7E
0220    18 A4 8D 05 26 FC 7E 18   A4 BD C1 32 84 1F 8B 41
0230    81 5A 22 F5 81 41 27 0E   81 45 27 0A 81 49 27 06
0240    81 4F 27 02 81 55 39
```

VERSION 2.

```
0200    BD 19 A4 86 02 BD 1A F5   86 0A 97 16 8D 0A BD 1A
0210    EE 7A 00 16 26 F6 20 EB   8D 06 8D 0B 8D 02 8D 07
0220    8D 0C 27 FC 7E 19 56 8D   05 26 FC 7E 19 56 BD C1
0230    32 84 1F 8B 41 81 5A 22   F5 81 41 27 0E 81 45 27
0240    0A 81 49 27 06 81 4F 27   02 81 55 39
```

(See Page 8 for a sample print-out.)

****

A-MAZE-ING (Cont)

```
0300    4CFF 22D0 4201 10A8   4200 10B0 8540 8532
0310    3500 1080 4401 650E   4402 6507 4404 650E
0320    4408 650D 8352 8430   C503 4500 6901 4501
0330    6902 4502 6904 4503   6908 8942 4900 1328
0340    8490 6902 F918 1080   A236 DAB1 123A 0000
0350    0000 0000 0000 0000   0000 0000 0000 0000
0360    0000 0000 0000 0000   0000 0000 0000 0000
0370    8A60 8B70 10B0 4080   86A0 87B0 0000 0000
0380    6200 6300 6D01 7A01   23BA 7BFF 23C8 6D02
0390    7AFF 7BFF 23BA 7AFF   23C8 6D04 7AFF 7B01
03A0    23BA 7B01 23C8 6D08   7A01 7B01 23BA 7A01
03B0    23C8 7BFF 00EE 00E0   1200 A236 DAB1 8EF0
03C0    DAB1 6F00 00EE 0000   6F00 A236 DAB1 8EF4
03D0    DAB1 6F00 4E01 13E2   3E00 00EE 7201 83D1
03E0    00EE 6E07 EEA1 1370   FE18 FE15 FE07 3E00
03F0    13EC 6E14 FE18 FE15   FE07 3E00 13F8 13E2
```

****

VIDEO TYPEWRITER (06C0 - 06FF)

ANDREW PERKINS.
VK7ZAP.

The results of the survey published in DREAMER No.10 showed that there are now a significant number of DREAMSOFT EPROMS in use and almost certainly these DREAMS would have extra RAM, so if you have added an ASCII keyboard, as described in DREAMER No.11 and Electronics Australia, here is a short program which can be loaded at 06C0-06FF, immediately before the ASCII keyboard routine, which is located at 0700-07FF.The routine allows DREAMTEXT to be written, using your new keyboard.

As branch locations in the EPROM can not be changed, I have re-written the first part of the DREAMTEXT program, from 1D00-1D32, with suitable branches and a test for the ESC key. Simply replacing BYTIN with ASCKEY routines causes one major problem, that all of the key information is seen as text. This means that inserting a delay, or a user character is impossible. Hence the test for the ESC key.

When you hit the ESC key, the program reverts, for one instruction, to the HEX keyboard. This allows you to write all your text using the ASCII keyboard, including ; Line Feed; Carriage Return; Form Feed; and Back Space; then use 'ESCape' to add delays etc.

The program is in Machine Code and is run 06C0, FN, 3., and only works in the RECORD mode. (Selected by an '0' on the Hex keyboard.) Playback can be executed as normal from 1D00.

For those people with a use for T.V.Typewriter, it is great as you can sit back with the ASCII keyboard and rattle away without having to stop to refer to tables, then enter two digit codes. You do not even have to go back to the DREAM keyboard. However, don't forget, that all the text is being stored in memory from 0200 and after a time (a long time) you will reach 06C0 and start overwriting this program.

In addition to the key functions described, there are three more key functions that can be recognised by the DREAMTEXT routines. These are 07 (BELL), (in our case 'bleep'); 11 (INV); 18 (CAN). The E.A. article shows two spare keys and an unused CONTROL key. These keys can be titled and the codes added to the 'look-up table'. It should be a straight forward task to sort out where to locate the codes. If your keyboard doesn't have any spare keys, you could add these functions as 'Shifted' functions and put the codes in the 'Shifted' key table.

A couple of hints ; DEL and will cause the lines to scroll up the screen as they have codes the same as the scroll functions in the EPROM. The first instruction to use after you have selected the record mode should be FF, (Form Feed), this will cause the cursor to move to the bottom left of the screen. Then, when you reach the end of a line, you can CR and LF and start a new line and still see the last few.

If you have relocated the keyboard routine, you will need to change 06DE/F (circled) to the first address of the GET ASC KEY routine.

If you do not have the DREAMSOFT EPROM, I can really recommend it!

```
06C0    CE 1D 70 BD 19 04 BD C2 C4 97 19 86 18 BD 1C EE
06D0    CE 02 00 DF 3C 7D 00 19 26 0F BD 1C BB BD 07 F0
06E0    C6 1B D8 30 26 03 BD C3 90 36 BD 1C BB DE 3C 32
06F0    A7 00 20 04 DE 3C A6 00 08 DF 3C BD 1C D7 20 D5
```

****

ASC KEY CHECK

(0200 - 0220)
ANDREW PERKINS,
VK7ZAP

Here is a short Machine Code program which displays the ASCII code for a key pressed on your new keyboard. It can be used to check that your keyboard and look up table are correct. The program is looped, so just run 0200, FN, 3, then press a key, and it will display the ASCII code on the bottom of the screen for a few seconds. When it disappears, press another key.

```
0200  BD C079  JSR Erase     (Chipos)
0203  86 1A    LDA A   $1A   (Set VY)
0205  97 2F    STA A   $2F
0207  86 20    LDA A   $20   (Set VX)
0209  97 2E    STA A   $2E
020B  BD 07F0  JSR Asckey    (Get key from keyboard)
020E  BD C3CA  JSR Shobyt    (Chipos)
0211  CE FFFF  LDX  $FFFF    (Create a time delay)
0214  09       DEX
0215  26 FD    BNE
0217  20 E7    BRA           (Go back to 0200)
```

****

ASCII TYPEWRITER

(05B0 - 0700)
Mr.R. VERDON,
[redacted]

This program allows you to use your DREAM as a Visual Display Unit for displaying text and characters. It uses the ASCKEY routines (0700 - 0800) given in DREAMER No.11 to receive ASCII codes from your keyboard, and then shows the corresponding pattern on the screen.

Backspace,(08), Line Feed,(0A), Carriage Return,(0D), Form Feed,(0C), are all defined. BS is non destructive, so you must overtype the same character to erase a mistake. A spare compressed digit pattern (see CHIPOS manual) can be added at 06FE if you wish to define your ESC or TAB key - call it ASCII 60.

RUN from 05B0, FN, 3. (Don't forget to load 0700 - 0800 first.)

```
05B0   BD C0 79 CE 05 E0 7E C0   05 CE 01 00 FF 06 73 CE
05C0   01 30 FF 06 71 A6 00 FE   06 73 A7 00 7C 06 74 7C
05D0   06 72 FE 06 71 8C 01 E8   26 EB CE 01 C0 7E 06 6C
05E0   6A 00 6B 00 A6 79 DA B5   07 F0 A6 79 DA B5 40 08
05F0   16 46 40 0A 16 26 40 0D   16 3E 40 20 16 1E 40 0C

0600   16 42 40 00 15 E4 06 60   06 10 DA B5 00 00 16 1E
0610   CE 06 7E 96 30 80 21 7E   C1 98 00 00 00 00 7A 04
0620   3A 40 15 E4 6A 00 7B 06   3B 1E 15 E4 06 65 A6 7E
0630   DA B2 07 F0 A6 7E DA B2   05 B9 6B 18 15 E4 6A 00
0640   15 E4 06 69 15 E0 3A 00   16 54 3B 00 16 58 6B 18
0650   6A 3C 15 E4 7A FC 15 E4   7B FA 16 50 7A FC 15 E4
0660   DE 3A DF 2E 39 BD C2 DF   39 CE 01 00 4F BD C0 7D
0670   39 01 E8 01 B8 BD C0 79   39 E0 E0 E0 E0 E0 C0 C0
0680   41 24 00 5A 14 50 5D F4   B1 1A FC A4 00 24 52 44
0690   44 94 15 50 0B A0 88 00   03 80 80 00 11 10 F6 DF
06A0   E9 64 F3 9F E7 9F 3E D9   E7 CF F7 CF 24 9F F7 DF
06B0   E7 DF 08 20 88 20 2A 22   1C 70 88 A8 41 9E FC DE
06C0   B7 DF D7 DD F2 4F D6 DD   F3 CF 93 4F F6 CE B7 DA
06D0   E9 2E F4 92 B7 5A F2 48   B7 FA B6 DE FE FE 93 DE
06E0   5E DE BB DE C5 46 49 2E   F6 DA 56 DA BE DA B5 5A
06F0   48 DA F1 1E D2 4C 05 40   64 96 02 A0 2B A2 C3 C3
```

****

STARSHIP ENCOUNTER (0080 - 0400)

EDWARD PERATI,
[redacted]

To commence the game, the Energise button (E) should be depressed. The Starship and Fighter appear on the screen, then after three bleeps the enemy appears and the game begins.

The Starship does not move but has a forcefield to protect it in the event that the Fighter is not in the vicinity. This is energised by depressing Key E. (Energise Force Field; 0245).

The Fighter commands are 8 Left (0249) A Right (024B) 5 Up (024D) D Down (024F) and F Fire Laser (0247) The laser can only fire in the horizontal plane.

After a collision, the score appears on the screen and the game then continues, after three bleeps. The initial score is 10 Fighters and 0 Enemy hit. If a total of 20 enemy are hit, a game will be credited with Zero enemy hit and the remaining fighter(s) from the previous game.

At the completion of the game, the score will remain on the screen for the next contender and the depression of Key E will commence a new game.

MAKE YOUR MISSION SUCCESSFUL, ----- DESTROY THE ENEMY!

```
0200   650E E69E 1202 630A   6400 00E0 6518 660B
0210   A080 D565 6A00 6B00   6001 A3FF F055 A0F3
0220   DAB3 6514 660A F518   F615 F707 3700 122A
0230   F518 F615 F707 3700   1234 F518 A0ED 6C3D
0240   6D1D DCD3 650E 660F   6708 680A 6905 6E00
0250   E5A1 1300 E6A1 139A   E7A1 126A E8A1 1278
0260   E9A1 1286 EEA1 1294   12CC 22A8 6000 A3FF
0270   F055 7AFF A0F0 12A0   22A8 6001 A3FF F055
0280   7A01 A0F3 12A0 22A8   6002 A3FF F055 7BFF
0290   A0F6 12A0 22A8 6003   A3FF F055 7B01 A0F9
02A0   DAB3 3F00 134E 12CC   A3FF F065 4000 12BC
02B0   4001 12C0 4002 12C4   A0F9 12C6 A0F0 12C6
02C0   A0F3 12C6 A0F6 DAB3   6F00 00EE A0ED C003
02D0   4000 12E2 4001 12E8   4002 12EE 22FA 7CFE
02E0   12F2 22FA 7C02 12F2   22FA 7DFE 12F2 22FA
02F0   7D02 DCD3 3F00 134E   1244 DCD3 6F00 00EE

0300   22A8 6500 660D 6717   680A 6918 6E04 A085
0310   F51E D78D 23F6 F61E   D78D 3F00 1352 F915
0320   F007 3000 1320 D78D   A085 F51E 77F8 D78D
0330   6F00 751A 77FF 78FF   7EFF 3E00 130E 6A00
0340   6B00 6001 A3FF F055   A0F3 DAB3 12CC 73FF
0350   1354 7401 A0FD F433   A0FD F265 00E0 650E
0360   6611 F029 D655 6616   F129 D655 661B F229
0370   D655 A0FD F333 A0FD   F265 F129 6627 D655
0380   F229 662C D655 6680   F615 F507 3500 138A
0390   4300 1200 4414 1208   120A 6710 6518 660B
03A0   A080 D565 6F00 85A0   86B0 A3FF F065 4000
03B0   13B8 4001 13CE 13E4   75FF 7601 23EE 3F00
03C0   1352 23EE 6F00 75FF   4700 13E4 13BC 7503
03D0   7601 23EE 3F00 1352   23EE 6F00 7501 4700
03E0   13E4 13D2 A080 6518   660B D565 12CC 77FF
03F0   A0FC D561 00EE 7708   3F00 1352 00EE D801
```

See the bottom of Page 14 for 0080-0100.

****

EDUCATIONAL MATHS - ADDITION. (0200 - 0400)

PAUL FLYMEN,
[redacted]

This program is designed to teach children basic addition. The computer selects two numbers at random, between zero and 64, and adds them together. The sum is displayed on the screen, and the child punches in the answer, via the keyboard. If the answer he selects is correct, then the computer ticks the answer, and proceeds to the next sum. If he is incorrect, the computer flashes a cross. The child has three attempts to obtain the correct answer. If he or she fails to get the correct answer, it is shown momentarily on the screen after the third attempt, then the computer proceeds with the next problem.

The program has full leading zero suppression, to enable the child to answer as he would normally.

If you wish to change the number of attempts, change 0227 from 03 to the number required. The program uses 0080 - 00FF as workspace.

I have found this program to be beneficial to my youngsters, and it has definitely improved the speed of their addition. Someone may be able to improve on this by extending it to multiplication, division, etc.

```
0200   2300 6A18 6B00 2334   8430 2300 6A18 6B09
0210   2334 8344 2304 6A0C   6B09 A2B2 DAB5 6A17
0220   6B10 A2B8 DAB2 6903   A090 F355 4000 1238
0230   F80A 5800 1254 123C   4100 1242 F60A 5610
0240   1254 F70A 5720 1254   230C A328 6A24 6B13
0250   DAB6 1264 A32E 6A24   6B13 DAB6 79FF 3900
0260   126C 2342 12A6 1264   00E0 1200 A32E 6A24
0270   6B13 6C10 FC15 FC07   3C00 1276 6D10 FD18
0280   DAB6 6E05 7EFF 6C05   FC15 FC07 3C00 128A
0290   DAB6 6C05 FC15 FC07   3C00 1296 DAB6 FD18
02A0   3E00 1284 1228 6C60   FC15 FC07 3C00 12AA
02B0   1268 1010 7C10 1000   FF00 DAB5 F129 131E

0300   6300 C33F A080 F333   F265 00EE 6A14 6B13
0310   F029 4000 1318 12BA   F129 4100 1320 2322
0320   F229 7A04 DAB5 00EE   0408 10A0 4000 8850
0330   2050 8800 F129 3100   DAB5 7A04 F229 DAB5
0340   00EE 6A14 6B13 F029   4000 1350 DAB5 1362
0350   7A04 F129 4100 135A   DAB5 7A04 F229 DAB5
0360   00EE 7A04 F129 1358
```

****

STARSHIP ENCOUNTER (0080 - 0100)

```
0080   FE92 3892 FEFF 8080   8080 80FF 0000 0000
0090   0000 8080 8080 8080   8000 0000 0000 00FF
00A0   8080 8080 8080 80FF   0000 0000 E020 2020
00B0   2020 2020 E000 0000   00FF 8080 8080 8080
00C0   8080 80FF 0000 F808   0808 0808 0808 0808
00D0   F800 00FF 8080 8080   8080 8080 8080 80FF
00E0   FE02 0202 0202 0202   0202 0202 FEA0 40A0
00F0   20C0 2080 5080 4040   A0A0 4040 8000 0007
```

****

STRIP JACK NAKED (0080 - 0400)

LINDSAY R. FORD,
('DREAMCARDS')
[redacted]

This is the classic card game in which you lose clothes rather than dollars (luckily there is no Chip-8 subroutine to punish a Dreamer who cheats by not stripping.) The computer deals the player and itself 27 cards each (a full deck with Jokers), sets the scores at 10 and then "tosses a coin" to see who plays first. If it tells 'YOU' to play, press any key to deal a card onto the centre deck. The DREAM then responds by putting a card on top of yours, (and so on).

If either you or the Dream play a Royal card the other player has only a fixed number of cards to play a Royal card himself or lose a point. (An item of clothing!) The values of the Royal cards (i.e; the number of cards you have before losing a point if another Royal is not dealt) are;

JACK = 1, QUEEN = 2, KING = 3, ACE = 4, JOKER = 5.

If one player loses a point, the other player takes all the cards in the centre deck and gets first deal in the next round. A player loses if he runs out of either points or cards during the game.

Note that the basic program was written so that it could be played on 1K DREAMS and so no room was available to memory map the card deck. This means that the same card may come up twice or even several times in a game, although the frequency with which any given card will occur is the same as if cards were dealt at random from a card deck.

```
0080   0001 0001 0309 0000   09FF FFFF FFFF FFFF
0090   FFFF F8F8 F8F8 F8F8   F8F8 F8E0 A0E0 A0A0
00A0   C0A0 A0E0 A0A0 E040   2020 20A0 E0E0 0A0A
00B0   0A0E 44EE FE7C 7C38   1038 7CFE 7C38 1038
00C0   7CFE FED6 3838 FEFE   FE10 38AE AAEA 4A4E
00D0   A0A0 A0A0 E040 4040   E0FB AAAB AAAB 8000
00E0   0000 80AB A9A9 A9FB   B929 2928 A900 6B00
00F0   6005 DAB5 7A08 F01E   DAB5 7A08 00EE 0000


0200   620A 630A 641B 651B   C701 22F4 2400 00E0
0210   4200 13DC 4300 13CE   6600 6C00 6A00 2300
0220   7A19 3ACB 121E 22BE   22CE 22DA 22D4 22C6
0230   3700 1276 8DC0 7D01   22F4 4400 13DC 23BE
0240   F00A 23BE 6E19 22F6   22CE 74FF 22CE 22DA
0250   7601 22DA 3601 2330   2316 3C00 1276 4D01
0260   1276 3D00 1236 6E19   FE18 22BE 72FF 22BE
0270   8564 6701 120A 8DC0   7D01 6E19 22F6 4500
0280   13CE 23C6 22F4 23C6   6E19 22F6 22D4 75FF
0290   22D4 22DA 7601 22DA   3601 2330 2316 6E04
02A0   FE18 3C00 1234 4D01   1234 3D00 1278 6E19
02B0   FE18 22C6 73FF 22C6   8464 6700 120A 8020
02C0   6A03 6B0B 12E0 8030   6A35 6B0B 12E0 8040
02D0   6A03 12DE 8050 6A35   12DE 8060 6A1C 6B1B
02E0   A080 F033 A081 F165   F029 DAB5 7A04 F129
02F0   DAB5 00EE 6E32 FE15   FE07 3E00 12F8 00EE
```

STRIP JACK NAKED (Cont)

```
0300   6B07 A089 DAB9 7A08   A092 DAB9 7A38 7B09
0310   3B19 1302 00EE C001   A083 F055 C003 A084
0320   F055 C00F 400F 1322   400E 1322 A085 F055
0330   A085 F065 8900 A083   F065 4000 1342 4900
0340   13AA 4900 1322 6B09   4901 1390 490D 1396
0350   490C 139C 490B 13A2   A086 F933 A087 F165
0360   390A 136E 6A1C F029   DAB5 7A04 1370 6A1E
0370   6C00 F129 DAB5 A084   F065 A0B2 4001 A0B8
0380   4002 A0C4 4003 A0BE   6A1C 6B10 DAB7 00EE
0390   A09B 6CFC 13A6 A09E   6CFD 13A6 A0A3 6CFE
03A0   13A6 A0A8 6CFF 6A1E   1374 A0A8 6A1A 6B08
03B0   DABA 7A08 7B0A A09E   DAB5 6CFB 00EE 6A01
03C0   A0CB 20EE 00EE 6A34   A0D9 20EE 00EE 22F4
03D0   00E0 6A10 6B0C A0CB   20F0 13E8 22F4 00E0
03E0   6A14 6B0C A0D4 20F8   A0E3 20F0 6000 6E03
03F0   FE18 6E03 22F6 7001   3010 13EE 2404 1200
```

****

STRIP JACK NAKED - GRAPHICS SEQUENCE (0400 - 0600)

This sequence adds a little realism (curse those 'chunky' graphics!!) for Dreamers with 2K to spare. If you are a feminist, a prude or lacking a sense of humour, you should either alter the display data (04FC-05A1) to suit your particular inclination, or forget this sequence completely and tell anyone who sees you playing the game that it is really 'Snap!'.

At 020C Insert 2400 into main program.
03FC Insert 2404 into main program.

```
0400   3700 00EE 00E0 2462   22F4 4500 143C 4300
0410   248A 4301 249C 4302   24A6 4303 24B0 4304
0420   24BA 4305 24C6 4306   24CE 4307 24D6 4308
0430   24DE 4309 24E6 6E96   22F6 00EE 248A 1436
0440   6002 DAB2 145C 6003   DAB3 145C 6005 DAB5
0450   145C 6009 DAB9 145C   600F DABF 7A08 F01E
0460   00EE 6A18 6B00 A4F2   2440 2440 6A10 6B09
0470   244C 6B02 2458 2458   6B09 244C 6A10 6B1E
0480   2440 6B11 2458 2458   00EE A53E 6A10 6B09
0490   244C 6B0A 2458 2458   6B09 244C A566 6A1B
04A0   6B0D 2446 2446 A56C   6A18 6B12 2452 2452
04B0   A57E 6A1B 6B0B 2452   2440 A589 6A13 6B0A
04C0   2440 2452 2440 A596   6A18 6B1D 2446 A599
04D0   6A22 6B1D 2446 A59C   6A12 6B0B 2440 A59C
04E0   6A2B 6B0B 2440 A59E   6A18 6B00 2440 2440
04F0   00EE 0F3C E078 207F   F77F 2008 0A08 090C

0500   1E0E 04FC FEFF 3E3F   3E3F 20A0 2020 60F0
0510   E040 7FFF FFF8 F8F8   F808 FCDE FC08 0101
0520   1E11 3F7F 7F7F 7F7F   7F7F 2424 FCFC F4F0
0530   10F8 FCFC FCFC FCFC   FC48 487E 7F5F 207F
0540   C07F 2080 40B0 7070   7060 4040 3413 1008
0550   0100 0304 1B1C 1C1C   0C04 0458 9010 2000
0560   0008 FC06 FC08 EBAA   E380 8080 162F 5F40
0570   505C 5B5B 5BD0 E8F4   0414 74B4 B4B4 41E3
0580   0000 081C 7F00 0000   8000 3F22 B61C 0800
0590   0800 0877 00FE 38F8   08E0 F880 C000 0830
05A0   2018
```

****

CRASH (0080 - 0400)

TONY HORNCASTLE,
[redacted]

Two cars drive around a track. Car A goes clockwise, Car B goes anti-clockwise. To start the game, key in the car you wish the DREAM to drive (A or B). The winner is the first car to score 250 points. The score for Car A is on the LEFT.

If you are driving Car A, the object is to COLLIDE with Car B. For each collision, car A scores 25 points. Car B scores 2, 3, 4, or 5 points for each quarter lap completed, depending on which lane the car is in. (2 for innermost, 5 for outermost). Car A will change lanes only if Key 0 is depressed when the car passes an intersection. Car B changes lanes randomly.

If you are driving Car B, the roles are reversed and you must AVOID Car A. Scoring is the same. Car B will change lanes only if Key 3 is depressed when the car passes an intersection.

```
0080    A0B0 3E00 A0B7 00EE  4900 00EE 2362 8894
0090    2362 00EE CD03 9D50  1094 00EE C0C0 F000
00A0    00F0 0000 F080 9292


0200    2396 233C 6700 6800  235C 2362 FA0A 6E01
0210    3A0A 2230 6E00 2230  6E01 2230 6E00 2230
0220    6E01 2230 6E00 2230  6E01 3A0A 2230 120E
0230    2080 6900 F665 0000  0000 2390 3300 1244
0240    7001 1256 3340 124C  71FF 1256 3380 1254
0250    70FF 1256 7101 2390  3F01 1260 2326 00EE
0260    72FF 3200 126E 6B00  2276 4B01 00EE 2080
0270    F655 2088 00EE 3401  128A 6400 6D40 3E01
0280    6DC0 83D4 86D4 22D0  00EE 6401 3E00 12A2
0290    3A0A 1298 CD03 12B6  6C00 EC9E 12C4 2094
02A0    12B6 8950 7902 3A0B  12AE CD03 12B6 6C03
02B0    EC9E 12C4 2094 0000  85D0 2390 22EA 2390
02C0    4F01 12C8 22D0 00EE  2326 6B01 00EE 0000
02D0    6205 6D00 9D50 12DE  7D01 7203 12D4 4340
02E0    00EE 43C0 00EE 7210  00EE 6D00 3600 12FC
02F0    6114 9D50 00EE 7D01  7103 12F2 3640 130C

0300    6034 9D50 00EE 7D01  7003 1302 6D03 6C01
0310    9D50 131A 7DFF 7C03  1310 3680 1322 81C0
0320    00EE 80C0 00EE 6D30  FD18 2390 A0B0 4E00
0330    A0B7 F665 2390 235C  7719 235C 601E 611D
0340    621D 6380 6401 6503  6600 2390 A0B0 F655
0350    6020 6300 2390 A0B7  F655 00EE 630E 8670
0360    1366 6326 8680 640E  A0C0 F633 F265 F029
0370    D345 7304 F129 D345  7304 F229 D345 3002
0380    00EE 3105 00EE 6D20  FD18 F00A 00E0 1200
0390    A09C D012 00EE A0A5  6400 6100 621F 6340
03A0    8040 23E8 410C 13B2  7403 7103 72FD 73FD
03B0    13A0 6000 623F 6401  631F 8140 23F4 400C
03C0    13CC 7003 7403 72FD  73FD 13BA A09E 601E
03D0    6103 D017 6116 D017  A0A6 610F 6003 D012
03E0    6036 D012 00EE 0000  D011 D021 7001 5030
03F0    13E8 00EE D011 D211  7101 5130 13F4 00EE
```

****

CHIP-8 INSTRUCTIONS DISPLAY AND EDIT PROGRAM (0200 - 0280)

KRIS ZALKALNS.

To use, first load Block or Program to be checked/edited at locations 0002 - 0005 as for Tape Load/Dump, then GO from 0200. (0200, FN, 3.)

Key C = 1 line SCROLL UP
Key D = 1 line SCROLL DOWN
Key E = EDIT TOP ROW displayed.
(Press Key E, then required data.)

OPTION: For 4 lines display, change data at 0227 to 8607, and at 022B to 811C.

The program is re-locatable without modification.

```
0200   DE 02 DF 40 BD C0 79 DE   40 7F 00 2F 7F 00 2E DF
0210   12 96 2F 97 42 96 12 8D   20 96 13 8D 1C 8D 2A A6
0220   00 8D 16 A6 01 8D 12 86   06 9B 2F 81 1E 27 22 97
0230   2F 08 08 9C 04 27 1A 20   D3 36 44 44 44 44 8D 01
0240   32 BD C3 D2 96 42 97 2F   39 BD C3 DC 20 F6 BD C2
0250   C4 81 0D 26 0A DE 40 9C   02 2F F3 09 09 20 A3 81
0260   0E 26 0E DE 40 BD C3 90   A7 00 BD C3 90 A7 01 20
0270   EC 81 0C 26 D9 DE 40 08   08 9C 04 27 D1 20 DE
```

****

DISPLAYED CHECKSUM (0700-0780)

RAY SCHMIDT, [redacted]

This program was adapted from M. Bauer's DREAM INVADERS checksum to display OKAY or NOGO depending on the state of the load. First load DREAM INVADERS, then key in the following...

```
0700   CE0200 4F E600 1B 8C06FF 2703 08 20F5 81AA
0711   271E CE0719 7EC005 00E0 6A14 6B00 A76A
0721   274F A771 274F A75C 274F A771 274F F000
0731   CE0737 7EC005 00E0 6A14 6B00 A771 274F
0741   A763 274F A755 274F A778 274F F000 DAB7
0751   7A06 00EE
0755   20 50 88 88 F8 88 88
075C   70 88 80 80 98 88 78
0763   88 90 A0 C0 A0 90 88
076A   88 C8 A8 98 88 88 88
0771   70 88 88 88 88 88 70
0778   88 88 50 20 20 20 20
```

(The unusual presentation is to simplify dissassembly for those who would like to.)

Now make a new tape from 0200 to 0780, and anytime the new tape is loaded in, press 0700 Fn 3 and if message is OKAY, press 0200 Fn 3 to run DREAM INVADERS.

****

IDEAS

RING BINDERS AND STORAGE PROBLEMS

SAM WILSON, [redacted]

This is not an original idea of mine, but borrowed from a friend, who is also an avid reader of the 'Dreamer'.

The idea is that you can buy from any stationers plastic 'wallets' that fit in ring binders (with a large number of holes already punched to suit different binders), that are suited to any document (e.g. Dreamer) for storage without punching or damaging the document, for a few cents each.

I have taken this idea a step further by separating 'Dreamer' into sections, such as Introduction, Programs, etc., and putting an Index with each set of folders or binders.

As you can see, this is quite a flexible idea because it is only limited by your imagination, as is the DREAM 6800.

The folders I have are from "ADVANCE", Serial No.045255, suitable for Foolscap copies etc., and made in Australia. Cost about 7c each, will hold at least one copy of 'Dreamer'.

P.S. The idea came from LAWRIE McKENZIE, but he is a bit shy.

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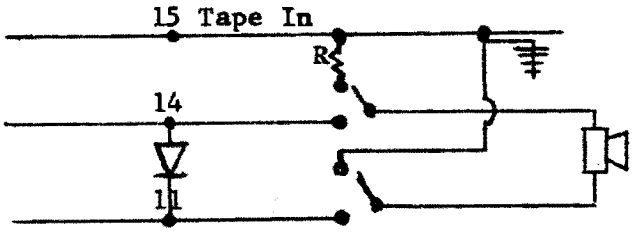
SWITCH IT

R.G. DAVIS, [redacted]

Following on from the article in the December issue of 'Dreamer' on how to modify your tape recorder to hear the program dump while loading, here is an idea that I have used on my DREAM for quite a while and it works O.K. You can also use it to switch the sound off.



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CLEAR VARIABLES

FRANK REES, [redacted]

To clear all Variables at start of program -

Chip-8. 0200 - A100 FF65 ⟶

The screen is cleared at start of program by Chip-8 interrupter A100 sets the Chip-8 Pointer to start of screen memory locations which have just been cleared. FX65 instruction loads all variable locations from 0 - X in this case 0 - F from screen memory locations 0100 - 010F. From this point on any variables which have to be other than 00 can be (set) initialised with 6XKK instruction.

If you have any questions or are not quite clear on the above, please write direct to Frank Rees, at the above address.

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DREAM 6800
PROJECTS and PROGRAMS
from ELECTRONICS AUSTRALIA

ED. FARRELL.

	EA NUMBER	PAGE NUMBER	ADDRESS START	ADDRESS END	LOADED ON CASSETTE?
Calculations Chart for Hex Displacements	Jan. 1979	80,81	0000	0000	
Dream 6800 Video Computer — First Article	May 1979	82 to 89	0000	0000	
Dream 6800 — Second Article	June 1979	82 to 88 & 125	0000	0000	
Chipos Interpreter Monitor Program	June 1979	87	C000	C3F0	
A Power Supply for the Dream 6800 Computer	June 1979	90,92	0000	0000	
Dream 6800 — Third Article	July 1979	84 to 90	0000	0000	
Kaleidoscope	July 1979	87	0200	0278	
UFO Intercepter	July 1979	87	0200	02E0	
Wipe Off	July 1979	87	0200	02CD	
Block Puzzle	July 1979	89	0200	02B8	
Concentration	July 1979	89	0200	0386	
Secret Number	July 1979	89	0200	0304	
TV Typewriter	July 1979	90	0200	02C0	
Tank Battle	July 1979	90	0080	0400	
Dream 6800 — Fourth Article	Aug. 1979	83 to 87	0000	0000	
Chip 8 Programming Chip Interface for Motorola 6800 KD2 Kit	Dec. 1979	89	0000	0000	
4K Ram Expansion for the Dream 6800	Dec. 1980	87 to 90	0000	0000	
Alarm Clock	April 1980	75	0200	02E0	
Secret Number	April 1979	77	0200	03C0	
Reaction Timer	April 1979	77	0200	0320	
Note: Secret Number, Reaction Timer headings are transposed in EA.					
Using the Dream 6800 for RTTY Display	Jan. 1981	78 to 89	0000	0000	
Dream 6800 Expansion Kits	Feb. 1981	122	0000	0000	
Dream 6800 Tape Motor Controller	May 1981	86 to 93	0000	0000	
More Programs for the Dream	June 1981	86 to 92	0000	0000	
Space Invaders	June 1981	86 & 92	0200	0320	
Pools Numbers	June 1981	86 and 92	0080	03E4	
Tattslotto Selector	June 1981	86 & 92	0200	02A8	
Morse Code Trainer	June 1981	86,87 & 92	0080	0400	
Life	June 1981	87 to 92	0200	0300	
NOTES & ERRATA					
Dream 6800 (June, 1979)	Sept. 1979	133			
6800/D2 to Chip 8 Adaptor (Dec. 1979)	Jan. 1980	117			
4K Ram Expansion for Dream 6800 (Dec. 1980)	Jan. 1981	133			

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