

SYDTRUG NEWS

SYDNEY TRS-80 USERS GROUP NEWSLETTER

P.O. BOX 43 ERSKINEVILLE 2043 Volume. 5 Issue. 1 September 1984

THIS MONTH

Last month I said that I would write a review of DOTWRITER, well I have not quite finished it, but as you may have already noticed this months newsletter has been completely printed using the program, I feel that a demonstration is probably the best review that can be done, so here it is (a detailed review will appear in a subsequent issue).

We have quite a busy schedule this month with the A.G.M. on Saturday the 8th, the Basic and Assembly lectures continuing on Saturday the 15th, and our first Group Bar-B-Q on Sunday the 23rd beginning at 12 noon. The Bar-B-Q will be held at 92 LANG ST, PADSTOW. All food will be supplied. BYO grog, utensils and if you have any spare picnic tables and chairs, bring them also. Total cost per carload - \$1 - so bring the spouse and kids for a GREAT day (Please contact the Secretary on 772-2009 with details of numbers.).

In order to keep up the quality as well as quantity of articles in the newsletter I have included selected extracts of other newsletters which we receive from other User Groups. While this is a good policy, I would like to be including MORE homegrown product, so PLEASE!!, keep them coming. If every member was to write just one article per year I could fill the newsletter every month.

Getting off my hobby horse now, a few words about the contents of this issue. As usual we start with our Secretary's RNDlings (RNDlings! - your starting to scrape the bottom of the barrel Jim!), following on, Morgan Ho gives us an excellent tour of Logical Operations. Then a small piece from the Land of the Long White Cloud on errors with floating point numbers.

Keith Black's Gamers Corner comes next with a story on "ELIZA". Then from the ACT an interesting method of storing and loading a printer initialisation program. The text of Alan Johnstone's talk on his additions and modifications to NEWDOS/80 comes next, followed by an article on Extended LDOS KSM files that has really done some travelling, this being the fourth (not FORTH) newsletter in line to print it! Another article from New Zealand, on the Keyboard precedes some news for modem owners and our Annual Report.

MEETING NEWS

As always the group meets at the rear of Pattersons Florists, Botany Rd, BOTANY (entrance from Chegwyn St.), on the second and third Saturdays of the month. Members are asked to remember that the meeting does not commence before 1 PM (in other words, please dont arrive prior to 12:30 PM).

September 8th - Annual General Meeting.
September 15th - Special Interest Meeting.

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SECRETARIAL RNDLINGS

Jim Whittaker 772-2009

Welcome to you all. My writings this month are partly as a wrap up to my term of office. I feel that everyone deserves a pat on the back for the support and work that has gone into making our club one of the best around. You are now part of a strong group of dedicated micro-computer users who command a large amount of consumer power. This can now start working for us.

HOUSEKEEPING.

The membership stands at 201 paid club and 42 paid BBS. This I beleive is the largest it has ever been. The aim of any club is to survive and with our growth rate of 7.5% per month I can see no horizon to our goals.

A year book is being produced and will include all previous News Letters ever printed up to August 1984. Any who want one please see Denis Pagett. Be quick there is only limited supply.

Do any members know of other News Letters produced by clubs where we can exchange ideas or information. Our contacts are spreading throughout the world and any extra input helps.

There appears to be a demand for MOD I RS-232 boards. Denis is investigating availability, so give him your name if you are interested.

Advertisements are \$24.00 per year. Cheap for 3600 business cards.

THANKS OF THE MONTH

Error Rosser fixed the BBS machine at very short notice. The MOD III appears to be working better than before.

Alan Harrison from TANDY computer centre Bankstown brought along the MOD 2000 for some on hands trials. Again this was at short notice and I should have organised for Alan to give a talk on current policy and any upcoming news. Maybe next time.

A number of members have offered to type in some of the many articles we receive. This certainly helps as it gives the Editor time to organise the News Letter into the professional product we now have.

OPPORTUNITIES

Within the club there is a wealth of experience in the computer and small business industries. We also have members who are younger, less fortunate or unemployed. If we bring these facts together with our self help aims, you can see another avenue for improvement which brings four proposals :

1. **PROFILE.** I am willing to publish a profile of any member who wishes to advertise his or her attributes. I will help you to compile this if need be.
2. **JOB APPLICATION WRITING.** Many other members and I, are fluent in purposeful writing. We may be able to help in organising or directing the way you write applications.
3. **INTERVIEW PRESENTATION.** This is a technique that has to be learned and I may be able to give some pointers as to how to go about selling yourself.
4. **JOB VACANCIES.** I will publish any job vacancies that are known to be available within the industry. Obviously the best workers are those that are interested in the industry and not just out for a job.

FEEDBACK

Can any member tell us what is happening in the DISK industry and where it will end up. I am looking for any PATCHES to MOD III TRSDOS. If you have any, I am trying to cattle dog them for publication. Please write down any you know or catch me at meetings.

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The logical operators also have other uses in bit masking. For example, the following function converts lowercase characters to upper case:

```
DEF FN UP$(A$) = CHR$(ASC(A$) AND 95)
by masking out bit 5 of the character.
Bit maths is also possible.
PRINT 6 AND 3 will give 2
PRINT 6 OR 3 will give 7
PRINT NOT 6 will give -7
The only thing missing are shift operators.
```

(ED.Note: Shift left and right functions can be duplicated by multiplication and division by powers of two.)

IF..THEN..ELSE statements can be simplified. The expression following the IF part evaluates to a numeric integer value. If the result is non-zero, the THEN part is executed otherwise, the ELSE part (if it exists) is executed. For example,

```
100 INPUT X
110 IF X THEN PRINT X ELSE PRINT "ZERO"
```

Furthermore, IF statements aren't even necessary (ever crammed multiple statements into one line only to have to start a new line because of the IF statement?). Since expressions with relational operators like (<,>)= evaluate to some Boolean value, (an integer in our case), it is possible to construct programs without any IF statements at all. For example,

```
1 < 2 evaluates to -1 (TRUE)
1 > 2 evaluates to 0 (FALSE)
We could replace
IF X=3 THEN Y=A*B ELSE Y=42 with
Y = -(X=3)*A*B - (X>3)*42
```

The use of minus signs is used to negate the Boolean result so that a -1 becomes a 1.

As a last example, the following "one-liner" demonstrates some of the uses of all the above-mentioned. It is program which takes a 2's complement signed integer (a normal BASIC integer type) and converts it to Hexadecimal notation. This is just great for those who like to PEEK and POKE but prefer to think in Hex.

```
10 INPUT X : N=-(X<0) : X=N*(XAND32767)-(N=0)*X : P=4096 :
FOR I=3 TO STEP-1 : Y=((X/P)AND(-(I<3)*8+7))-(I=3)*N*8 :
PRINT CHR$(48+Y-(Y>9)*7); : P=P/16 : NEXT I : PRINT : GOTO 10
```

BASIC ERRORS. 04

Extracted from Christchurch 80, April 83

Here's something to watch out for! Computers are not accurate in certain cases, and here's an example that proves the point.

```
10 A=10 * 192.6
20 B=INT (10*192.6)
30 PRINT A
40 PRINT B
50 PRINT A-B
```

Lines 30 and 40 both give 1926 as the answer, but line 50 does NOT give zero. 192.6 is one of the values which produces an error caused by the way the computers hold floating point numbers and the method of extracting integers. It is noted that this sort of problem accounts for quite a few of the insoluble problems encountered by many novice programmers.

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Does anybody have any ideas about hardware mods that the sub-committee, under Errol Rosser, can pursue.

Is anyone able to arrange a tour through a computer installation or a business and is there any interest in such an exercise.

I will probably take up Elliot Humphries offer myself. If you were thinking of going you had better be quick.

Are there any further nominations for the AGM that is being held on the 8th SEPTEMBER.

SUMMING UP

I think that the club is now progressing and working to a set of achievable goals. There are many ideas and dealings that are in the pipeline and these can only enhance the position of the club. The committee is in need of more and more input to expand the clubs power base. I would like to thank my colleagues for their support as I have never held a position such as this and it has all been a slow learning curve. I have my responsibilities organised now and It is a finely juggled cross between my family, tech and the club. I hope I have served you well. See you at the AGM.

A LITTLE BIT MORE ON LOGICAL OPERATORS

by Morgan Ho.

This article was prompted by Errol Rosser's report of a bug in last month's RANDOM I/O and gives a more detailed explanation of BASIC's logical operations.

First of all there seems to be some error in line 10 of Errol's example. If A is 1, then NOT (A) should return the value -2. Wait a minute I hear you say, there's something wrong here isn't there? In fact, everything is as it should be.

BASIC performs logical operations on a whole byte at a time rather than a single bit. This is probably more convenient to do in terms of the Z-80's logical operators. The operators AND, OR & NOT will work upon any 16 bit integer (2's complement). What they effectively do is to perform logical bit operations on such an integer. As such booleans actually have the following values:

State	Value	Binary Representation
TRUE	-1	1111111111111111
FALSE	0	0000000000000000

Hence performing a NOT on an integer performs a 1's complement or inverts the low and high order bytes of the integer. Similarly, AND & OR do exactly the same bit operations on both bytes as their Z-80 counterparts (this after all shouldn't surprise anyone). A similar sort of scheme is used in C (but more logical operators).

So, what does it all mean? Well, perhaps the most obvious application to hardware hackers, is that digital circuits can be modelled and tested without a breadboard. Since all logic circuits can be represented by a Boolean equation, we could write a program to simulate the circuit. A NOT can represent an inverter, and AND and OR are obvious. With just these 3 binary operators, other gates can be modelled for example.

NOT(x AND y) is equivalent to NAND of x,y.

The following code segment is a 2 to 4 demultiplexor,

100 Z1 = X AND Y

110 Z2 = NOT X AND Y

120 Z3 = Y AND NOT X

130 Z4 = NOT(X OR Y)

where X,Y are the inputs and the Z's are the outputs. Remember logical TRUE's are -1, hence when printing Boolean values, to get a nicer output use PRINT -Z where Z is the result of a Boolean expression. This will give a binary output (less annoying than -1's).

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GAMERS CORNER

Keith Black 516-3673

This month I am reviewing "Eliza" a simulation of artificial intelligence. Eliza was "born" in 1966 by Dr Joseph Weizenbaum, he created an algorithm that allowed a computer to analyze conversational english, respond to questions, and carry on a conversation with the person at the keyboard.

Even after 18 years Eliza is still sensitive about her use of english, grammar, and punctuation. When the program was first put on the university computer to see what the reaction of the students would be the results were amazing at first not many gave it a second look but after five weeks some 380 students out of 498 were using the program at least twice a week and it became a job to get time at the keyboard, it was found that not only the students but the teachers and professors were using Eliza.

When Weizenbaum decided to take the program off the computer the reaction was amazing, he was told by his superiors that he was not to touch the program as they saw it as a step to replacing the psychotherapist and freeing him to do other things. The student reaction was also strong, they said that if the program was taken off some would sue, others said they could not do without using the program to help them.

There are a few quirks that Eliza seems to possess, because of her upbringing, she is very curious about people, and their emotions. Many years ago she was told that everyone has problems of one sort or another, because of her curiosity she will always start a conversation with the assumption that you have a problem, and she can't wait to find out more about it. She has a burning desire to find out every thing there is to know about you, the more you tell her about yourself the better she understands you.

Some concepts are difficult for her to understand such as dreams, the concept of a family, friends, and she will usually want to ask questions if you bring them up. Eliza realizes that these are sensitive subjects to some people, she won't bring them up unless you do.

As you talk to Eliza you may find that everything you say will seem to be questioned as to the reasons why you made this or that statement, as near as can be determined it seems to depend on Eliza's mood at a given time. At times she is very open and will talk about anything, and at other times she is close and guarded in her answers and insists on knowing why you are asking. It seems to be determined by the person she is talking to and her "feelings" about the person.

The instructions for Eliza are simple: type whatever you wish to say or ask and press (enter) try to use complete sentences. To end a conversation type (bye) or (goodbye). To start type (hi) or (hello) as in any relationship, if you are open and unguarded in your conversations with Eliza she will respond with the same degree of frankness.

Please keep in mind that Eliza is a simulation she is not capable of independent thought so I strongly advise against taking any of her comments seriously, especially her evaluations. Eliza is Eliza no more no less.....enjoy.

To read more about Eliza read "Computer Power and Human Reason by Joseph Weizenbaum".

PRE-DOS CONTROL :NEWDOS Model 1 or Model III.

How to configure your printer at start up.

Extracted from Canberra Micro-80 Users Group April 1984.

One frustration with modern printers on our TRS-80's is how to set up such things as font, margin and pitch. For assembly listings I have found that the Elite font (12 CPD and a margin of 18 on my Itoh 8510 gives a very readable result. But how to configure your printer?

One obvious method is to write a custom program, and use the NEWDOS AUTO function to execute it on each Reset. This method has a few disadvantages. Firstly, you might well prefer to use the one and only AUTO for some other action. Secondly, you may not want to configure, or

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reconfigure on each BOOT and you have to remember to hold down the ENTER at each RESET time to defeat the AUTO function - I usually forget! Finally, execution of AUTO and a program takes a finite time when you are itching to get on with the job. The program would also take up an extra gran on your disk.

It turns out that there is another method of achieving the same result - better, faster and more elegantly. This takes advantage of two spare sectors in the BOOT gran of a NEWDOS disk - Track 0 sectors 3 and 4.

Normally, the ROM routine reads Track 0, sector 1 into memory locations 4300 to 43FF at Reset time (For Model I read Track 0, sector 0 and locations 4200H to 42FFH.). The ROM then jumps to memory address 4303H (4203H Mod D - and uses it to read sectors into memory starting at Track 0, Sector 5. This group of sectors is actually SYS0/SYS - the DOS core. When an entry address is found, control passes to that location via a JUMP command and DOS initialisation is completed.

My mod causes reading to start at Sector 3 instead of Sector 5, having put code there which allows printer configuration. On completion, the code originally read into the 4300 (4200H Mod D) block by ROM is used to start reading SYS0/SYS from Sector 5 onwards.

The beauty of this method is that it costs nothing in disk space. You can further arrange to test for a particular key at RESET/BOOT time (e.g. space bar). If not pressed, the printer configuration code is ignored and a completely normal BOOT occurs.

To make all this happen do the following steps very carefully. Practice on a spare disk.

1. Write an Assembly program of the following form:

```
ORG 4400H ;Say
START DEFB 8ASH ;Tested for at 433A
LD A,5 ;Reset Boot code
LD (4305H,A) ;to start at sector 5 (Mod I 4212H)
LD A,(3840H) ;Read keyboard space bar line
RLA ;Bit 7= space?
JP NC,(4303H) ;Normal NEWDOS Boot if not (Mod I 4203H)
```

;Write your printer configuration code here (up to 2 Sectors worth- slightly less than 1/2k). Must have a JP (absolute or conditional) to 4303H (Mod I - 4203H) to exit.

END START

2. Assemble the program as, say, BBOOT/CMD on drive zero.

3. Use SUPERZAP to find where this file is on disk using the DFS function Filename:BBOOT/CMD. Make a note of the Drive Relative Sector decimal number "nnn" (under DRS displayed in the bottom left hand corner of the screen).

4. Press X to return to SUPERZAP's Menu

5. Use SUPERZAP again to copy BBOOT/CMD's two sectors onto Track 0, Sector 3 and 4 using

"CDS" Copy Disk Sectors

Do you really want to do this ? "Y"

Source Drive and Relative Sector "0,nnn" (from step 3 above)

Destination Drive and Relative Sector "0,3"

Sector Count "2"

Return to SUPERZAP's Menu via "ENTER"

6. Use SUPERZAP's DTS option (Display Track Sectors) to confirm that Track 0 ,Sectors 3 and 4 actually contain the BBOOT/CMD code.

7. Finally, use SUPERZAP again to zap the Boot Sector ,byte 5, so that sector 3 is read first, via:

"DTS" to Display Track Sector "0,1" (Mod I Trk 0, Sec 0)

"MOD05" to place the cursor over byte 05 (Mod I - MOD12, byte 12)

"03" to change the bytes value from 05 to 03

"ENTER" to set up for the change

"Y" to implement the change

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and that's it.

When a disk is copied, the new BOOT gran of five sectors will not be moved onto the new disk because COPY generates a new BOOT file. However, it can be transferred by simply calling up : COPY BOOT/SYS:s :d. This method can also be used to transfer the new BOOT to any existing NEWDOS system disk.

Aword about Model I double density. On a System disk in drive 0, track 0 must be single density. This is achieved by having a "K" type flag in the drive's TI PDRIVE spec. The new BBOOT program must be on the first Double density track - physically number one, but all NEWDOS activities treat this as track 0, and so steps one through six above are valid, however, the final ZAP has to be applied to physical track zero - the single density track. Therefore, you have to temporarily assign a single density PDRIVE spec when executing step seven. Further, this method will have to be used on additional disks - copying BOOT/SYS will only put the new sectors onto physical track 1.

(Editors Note: If you are using Alan Johnstone's BOOTMSG utility (which stores the Boot-up message on Sector 4 of Track 0), the Printer driver/set-up program must be limited to 1 sector ie:less than 256 bytes. Also to ensure that no extra disk space is used, the file BBOOT/CMD should be deleted after the above procedure has been performed.)

NEWDOS/80 MODIFICATIONS

by Alan Johnstone

An Explanation of the modifications made by ALAN JOHNSTONE to the NEWDOS/80 V2 Disk Operating System. Presented by ALAN JOHNSTONE at a SYDTRUG Special Interest Group Meeting held on Saturday 21st July 1984.

The information presented here is free for your own use with the provisor that it NEVER be used for commercial purposes. The Disk has all documentation needed to implement and use the mods described.

The information that allowed for the modifications is all contained in the NEWDOS/80 operating manual by APPARAT. The important point is to read the manual first if you do not understand any of the processes discussed here. Anything not covered by the manual will be covered in this discussion. Today we will cover version 6.0 of the modifications and try to explain some of the less obvious points.

Distribution of the modifications does NOT include a copy of the NEWDOS/80 DOS. Anything distributed by Alan has been written by himself and is his to give out. The set of mods distributed can be added to your system to update your NEWDOS/80. You must have an original NEWDOS/80 system and it must be zapped to the current zap level.

Firstly there is a file on the disk called README/NOW. List this to see what you should do. You may print it if that is easier. You should also list or print DISK/DOC. Next go into BASIC and RUN"LISTDOC". This will allow you to list or print the relavent documentation to get yourself started. It will also infer "RTFM" or if all else fails Read The Flaming Manual.

DOS OVERVEIW

BOOT/SYS located at the beginning of the disk has the job of finding SYS0/SYS, loading then executing it. SYS0/SYS on NEWDOS/80 is located in the very next granule on the disk (sector 5) and its job is to initialise the system and bring in SYS1/SYS which keeps track of and analyses the commands you type in.

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The mods hook on to the end of SYS0/SYS at HEX 5200, look at the system switches, add some extra values to the system command, sees what you have selected and moves the appropriate bits up into high memory and then passes on to the normal DOS initialisation.

The fact that they are in high memory can cause some problems with other programs that load there. What you have to do is change the SYSTEM command for specifying the maximum high memory at boot (AP=). Make this a value below where your programs load and the mods are guaranteed to load below this value, leaving high memory intact. eg. SYSTEM AP=F7FF and the mods will load below this, leaving from F7FF to FFFF for your own programs.eg spooler etc.

The AJ mods will NOT be loaded if you hold down the <SHIFT> key during the boot process. This may be useful if you are loading some games programmes or doing some development. The NEWDOS/80 manual states that holding down the <UP ARROW> key will stop their keyboard driver coming in, so holding down both, <SHIFT> and <UP ARROW> will stop the lot from loading.

INSTALLATION

How to get the mods on to NEWDOS/80. You need a virgin system disk with at least 10 grans free in drive 0. In drive 1 you need another disk with BASIC and the AJ mods available. Firstly copy from the system disk, SYS0/SYS to SYS0/OLD on the mods disk. Then go to BASIC and RUN"CMDMERGE". It asks you for the Output file to which you answer SYS0/SYS:0. The first Input file it asks should be answered with SYS0/OLD. The program will then ask for another Input file, to which you answer SYSADD/CIM. When it asks for another input file you just press enter. This has taken SYS0/OLD and added SYSADD/CIM to the end and adjusted the entry points and then placed it in SYS0/SYS.

You must now do a DIR A /SYS and check under the EXT column to make sure that SYS0/SYS has only 1 extent. If it is not you must insert a new disk in drive 1 and do: COPY :0 :1,,FMT,CBF,/SYS .Then transfer disk in 1 to drive 0. Verify that SYS0/SYS:0 is now only 1 extent.

The zaps must now be applied. Go into BASIC and RUN"ZAPPER". This will now give you a menu to allow you to apply the zaps. You may also use this to apply any of APPARAT'S zaps. Select apply zap files, which asks you for zap file name. The documentation on the disk will explain what zaps to use. For example if you specify SYS2/ZAP it will then ask you for an UNZAP file so that if you do go wrong, you can always bring the DOS back to standard. You should specify SYS2/UNZ. ZAPPER will then go through and if everything is correct it will state VERIFICATION COMPLETE. ZAP REQUIRED ?. You should answer Yes or No. If you type YES it will actually apply the zaps as it repeats the process.

Now you should BOOT your system and no changes should be apparent. You should now enter SYSTEM 0 and there should be a lot of new parameter's. You now have to go through and set to Y those features that you want active. eg SYSTEM 0 BR=Y BT=Y etc. Next time you boot up you will see that instead of just the normal NEWDOS/80 you will get a little message saying that the changes by Alan are installed.

FEATURES

The Documentation begins with the keyboard, screen and printer drivers and screen paging facility, with this you can press the <CLEAR> key to see a new page or the <UP ARROW> key to scroll up a line. This is enabled by pressing the <678> keys together, which also creates a clunking noise to let you know it is engaged. Type ahead can also be enabled and displayed. See the documentation for full details.

Also included is a Resident System File Directory taking up 48 bytes in top of memory that has a set of directory pointers to the system files, which means the system can go straight to each overlay file on the disk without going to the disk directory first. In use, problems can arise if you pull out your system disk and insert a new disk which has its files in different positions. To overcome this you have to press the three keys (<.,/>) to reload the directory information.

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DISK DRIVER MODS

Extended Disk Addressing. If you do a PDRIVE 0 you will see a few new parameters eg DN=0,DS=0. You should go through the PDRIVE table and set PDRIVE 0 1 DN=1 A (enter) PDRIVE 0 2 DN=2 A etc (this says the logical drive is the same as the physical drive) for each drive you want.

To the system you have 10 logical drives, not just the original 3 or 4. Every time you give the system a drive number, which now means you can do a DIR 5 or COPY :6 :8, it goes out to the appropriate PDRIVE entry for that logical drive, sees DN=(physical drive number) and uses that as the drive you actually work on. eg if you make DN=2 on drive 6 then that will equate logical drive 6 to physical drive 2 so that a DIR 6 will access physical drive 2 with the PDRIVE information of drive 6.

DS=0 is the drive select code. Normally drive 0 has a select code of HEX 01, drive 1 has a select code of HEX 02, drive 2 has a select code of HEX 04 etc. that is the actual HEX value it sends out to the PORT on the MOD III or Memory address on the MOD I to tell the system exactly what drive select line it is using to select the drive. This was originally put in for people who had double sided drives and wanted to treat both sides as separate drives (ED. NOTE: to select side 2 of a double sided drive zero, the DS for drive 1 would be 9, 1 for drive zero plus 8 to select the upper head of the drive.) and wanted to treat both sides as separate drives or had to do so because their previous DOS'S made them.

Automatic Disk Format Determination allows you to put any disk into any drive physically able to take the disk and read that disk without setting up the PDRIVE tables. It obviously does not allow you to put an 80 track disk into a 40 track drive and expect to read it. It will allow you to put a 40 track disk into a 80 track drive and read it. How it works is, if it detects an errors while reading a sector in the directory, it will immediately say we will approach this disk freshly and figure out what this disk is.

The first thing it does is check the density to work out if it is single or double. It also does some checking to see if you have a 40 track disk on a 80 track drive . It does this by looking at what it beleives is track 2 and if it finds that when it reads it is actually track 1 then it knows you have a 40 track disk in. It will also sort out if track 0 is single density and track 1 is double or visa-versa.

It next looks to see if there is a PDRIVE table on the disk and if so it will use that. It does this by looking for a signature byte on the disk. It also checks if it is LDOS and if not it works under the simple assumption that if its single density then its single sided and 10 sectors per track and 2 granules per lump etc. If it finds it is double density it assumes 18 sectors per track, single sided and it also makes a little change in the DOS to permit 6 sectors per granule, which NEWDOS/80 does not normally permit. NOTE: you cannot run a PDRIVE entry with 5 granules per lump with these changes.

The way it is handled is by some hooks in the multiply/divide routines that decide if this is a multiply or divide by 5 and if this is a double density disk with 6 sectors per granule (which includes LDOS as well as any other strange double density) then we immediately change the 5 to 6 because we assume we are trying to calculate a track number from a relative sector number or lump number. Those are the points where the system actually does its multiply or divide by 5. So dont ever use a GPL=5.

The changed NEWDOS/80 will generally read and write to most double density and LDOS etc but no guarantees are made because NEWDOS/80 will not necessarily update directory information exactly the way other DOS's would like you to. It is recommended that you only use the changes for reading other disks. LDOS has been quite successfully read and written to from NEWDOS/80 and then successfully reread by LDOS. So it can be done but no guarantees especially with file update and date information.

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Quite often you will get a program that runs fine under TRSDOS or LDOS and goes down with an illegal dos function the moment you try to run it on NEWDOS/80 and this is because it is trying to call in a dos overlay to scan the parameters for it and return the results. For some reason APPARAT did not supply this function with NEWDOS/80. You will find on the mods disk a little program called GENPARAM which is a BASIC program that installs PARAM/SYS as SYS29/SYS and sets up the appropriate zaps to access it. This should now make a number of those TRSDOS and LDOS programs start to work correctly. This was originally written to allow EDAS to work correctly on NEWDOS/80. There is also a file called EDASFIX/CMD which can be put on with CMDMERGE.

There will be 2 Master disks held by the club. 1 for the MOD I and 1 for the MOD III. They are in the format Single Sided Double Density 40 tracks. Single density bods will have to copy them onto 2 disks. The mods do not yet work on NEWDOS/80 V2.5 but some more work is being done.

The club wishes to thank ALAN JOHNSTONE for not only the work that has gone into the modifications but also for sharing them with us and going to such lengths in explanation.

If there are any queries please feel free to contact SYDTRUG by post at P.O. BOX 43 ERSKINVILLE 2043 or contact the Secretary on 7722009 I will endeavour to pass on any queries that we are unable to answer.

EXTENDED LDOS KSM FILES

by Jim Bruckart

As you may have noticed there are a number of articles from other newsletters in this months copy of SYDTRUG NEWS (read we need more article from YOU, the members), this particular one has really done the rounds, it was first published in the U.S. newsletter TCUG, reprinted in CINTUG, then in the ADELAIDE MICRO USER News, where it appeared in the June '83' issue.]

Here is a patch for the LDOS KSM/FLT utility that I hope will be useful to LDOS owners. This four byte patch is for LDOS 5.1.3 (ED. note: the patch is valid for version 5.1.4 also) on both Models I & III, and it allows the KSM utility to use "CLEAR+SHIFTED" keys as well as the unshifted keys. this will permit the user to specify 52 keystroke multiple values rather than the standard 26 values. The patch is invisible with relation to prior KSM applications, and will work with KSM files that were built previously.

.KSM/FLT patch for Mod I/III LDOS 5.1.3 (and 5.1.4)

.by Jim Bruckart

X'S26E'=3A

X'SSAB'=FB

X'SSB3'=00 00

.End of patch

To create a 52 key KSM file, build two "normal" KSM files (using the BUILD command or a word processor as described in the LDOS manual) for both the shifted and unshifted alphabetic characters. The "unshifted" file must contain values for A - Z, but the "shifted" set does not need a full 26 characters. Next, build a "CR/KSM" file by specifying BUILD CR/KSM, and pressing (ENTER) for the letters A - F (a total of six CR's), followed by a (BREAK). Finally, APPEND CR/KSM UNSHIFT/KSM and APPEND SHIFT/KSM UNSHIFT/KSM. This creates a 52 character KSM file named UNSHIFT/KSM, the user can rename this file as he pleases. The reason for the CR/KSM file is to fill the hex values DB through EO. These values are not accessed by the keyboard driver.

Since MINIDOS also uses the "CLEAR+UNSHIFTED" keys, the user may elect to remove the MINIDOS filter or not to use the MINIDOS characters (C, D, F, K, P, Q, R, T) in the KSM file. MINIDOS will take priority, and your KSM values for these eight letters will be ignored.

SYDNEY TRS-80 USERS GROUP NEWSLETTER

KEYBOARD MATRIX FOR TRS-80 MOD I & III.

Keyboard Matrix Manipulation - Christchurch 80 News April 1983.

As an aid to programmers, the accompanying chart was devised. It shows all the keyboard switches for the Models I and III TRS-80. To use it, find the key you wish to test for, get the memory location from the top of the column and the bit required from the left of the row. Also at the top left is the value of the bit in decimal.

A favourite memory location to peek at is 3840H (14400) which accesses the main game controls (arrows, spacebar, enter, clear and break).

In basic.....

Peek &H3840 :

IF N=0 (continue)

IF N=8 THEN (up arrow)

IF N=16 THEN (down arrow)

IF N=32 THEN (left arrow)

IF N=64 THEN (right arrow)

IF N=128 THEN (space) etc.

In Z80 assembler.....

LD HL,3840H

LD A,(HL)

CP 0

JP Z,CONT (continue)

BIT 3,(HL)

JP Z,UARROW (up arrow)

BIT 4,(HL)

JP Z,DARROW (down arrow)

BIT 5,(HL)

JP Z,LARROW (left arrow)

BIT 6,(HL)

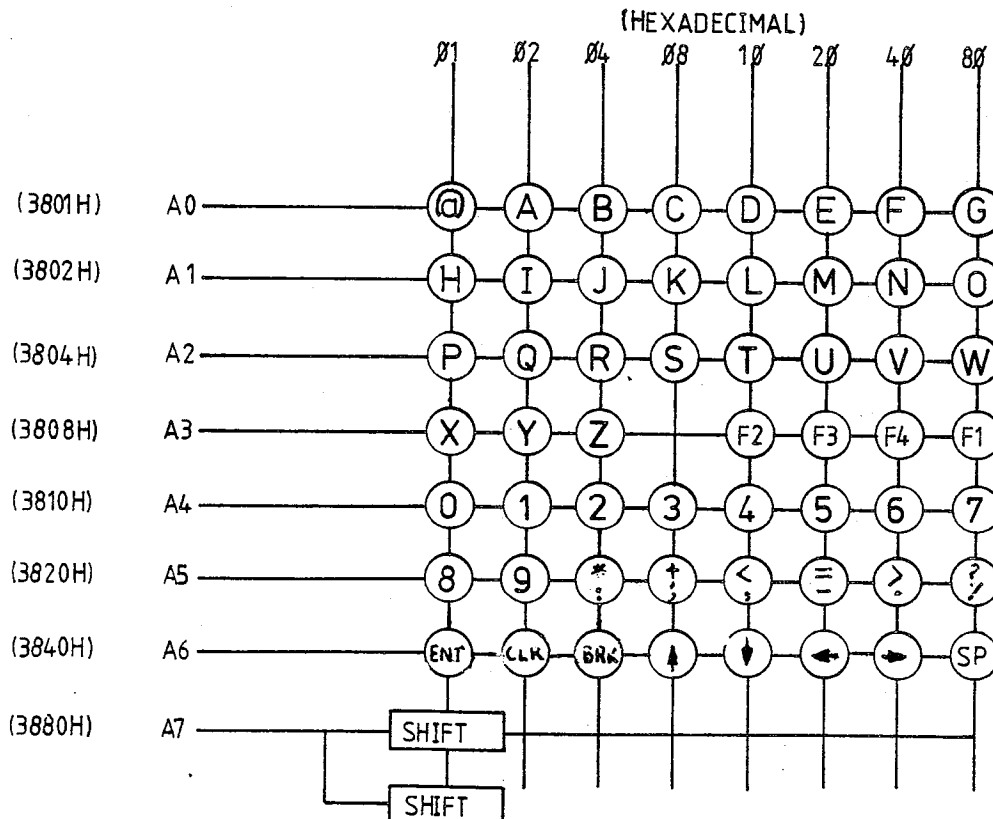
JP Z,RARROW (right arrow)

BIT 7,(HL)

JP Z,SPACE (space)

If you wish to check a shifted keyboard entry, check for the SHIFT first (peek 3880H bit 0). If his test fails, continue, else check the keyboard again for the unshifted character.

I hope that this will be as useful to you in your programming as it is to me.



SYDNEY TRS-80 USERS GROUP NEWSLETTER

MODEM NEWS

by Gary Bryce

Have you got a Modem which uses the AMD 7910 "World Modem" chip (i.e. : AVTEK or UDM 1200)? Well here are a few updates which may help you!

These details were supplied by Geoff Radcliffe (designer of the AVTEK Multi Modem). The first applies to both the AVTEK and UDM modems and subsequent details to the AVTEK only.

CHANGING MODES

AMD report that when changing modes (ORIG to ANSW, CCITT to BELL or 300 to 1200 etc), DTR must be turned off before the change and remain off for 100 micro seconds (MIN) after the change (simple remedy turn the modem off, make the change, turn it on again).

SYNETRICAL WAVEFORM

To improve the symetry of the Master Oscillator waveform capacitor C13 (20pf pin 24 of AMD7910 to ground) must be reduced to 10pf.

REMOVE DC OFFSET

To remove any DC offset appearing at pin 5 of the Modem chip, a 30 nano farad capacitor must be fitted in series with the line to pin 5, a 100 k ohm resitor should be used to tie pin 5 to ground.

1200/75 BAUD WORKING

When working in 1200/75 mode the RTS line is the TX/RX switch. To enable this function R2 (10k ohm) must be removed.

WANTED

A RELIABLE MODEM for the secretary's use. A reasonable price will be paid or I can swap for a Blue Label System 80.

Contact the SECRETARY 7722009



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