NATGUG NEWS

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OFFICIAL JOURNAL OF THE

National TRS-80 & Genie Users Group.

INFORMATION ON THE GROUP

Membership of the Group is by subscription to the Newsletter, which is published monthly. Membership details are obtainable from the Group Secretary. Membership of the Group is open to anyone with an interest in the TRS-80 range of microcomputers, and compatible systems such as the Video Genie.

Details of the Group accounts and the constitution of the Group are obtainable from the Secretary.

Members requiring assistance with problems related to the TRS-80/Video Genie may call the Secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops are arranged from time to time in various parts of the country.

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time. Sub-groups also exist for medical and educational users.

The Group runs 80-NET, a computerised bulletin board service that is available to all users of microcomputers.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are obtainable from the Secretary. The medical and educational sub-groups maintain their own libraries.

A membership list is obtainable on disk from the Secretary.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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Future Workshops
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March NN Swindon - I am waiting on the hotel for a date.

April NN Cambridge - I would like to return to the University Arms perhaps with our BASUG friends.

May NN Edinburgh - the Scottish members would like us to make the effort and visit them. Laurie Shields wants to go, who else will join us ?

June NN Gloucester - the Gloucester Crest is a first class spot to meet.

July 26/27/28/29 York House - Milton Keynes. Brian Pain

August 18th Sunday Blandford Forum.

EDITORIAL

Since I have been sent masses of material in the last couple of weeks, we are able to get this issue to you well before the usual date. I shall make an effort this year to get the newsletter out at the end of the month preceding the cover date, although it might take a few issues before this is achieved.

Sorry about the missing Part 2 of the 68000 programming series, it was much easier to write up the other bits and pieces I have been working on. It will be in the next issue.

We no longer have anyone to act as Model III software librarian. More to the point, do we need software libraries for the Model III/IV or the 100? Please let me have your views. If there is such a need, doubtless someone will volunteer their services.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. If possible, send material in printed form.

2. Scripsit or Pencil disks/cassettes are acceptable.

3. Ensure your ribbon is in reasonable condition.

4. Printer output should be on A4 paper if possible.

5. If you send in hand-written material, write legibly.

6. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

LIBRARY INFORMATION

Model 1: Leighton Davies, 105 Caerau Road, Caerau, Glamorgan. Tel: (0656) 738337

Model II: Jim Hutton, 25 High Street, Stroud, Glos. Tel: (045 36) 4423

PROBLEM SECTION

Can anybody help with a problem I'm having on setting-up working double-sided disks on a Genie 3. Following the procedure outlined in the Genie 3 NewDos 80 manual using the DBLSIDE/JCL program produces a double-sided disk that will allow me to load M/L programs but I can't load Basic even though it's apparently on the disk. I get an error of the nature: LOAD FILE FORMAT ERROR.

I'm in most evenings except Wednesdays and also at weekends.

Robin Davies 13, Paget Rd., Wolverhampton.
Tel: Wolverhampton (0902) 23735

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does anyone have any idea if the TRS-80 version of the "counselling" programme called "Eliza" is available in this country, or from the U.S.A.?

If it is available, how can I get hold of a copy on tape? I have the basic 16K. Level II TRS-80.

Les. Tebb.

102, Keldregate,

Bradley,

Huddersfield

HD2 1TB.

I expect by now that several LDOS users will have answered your item in the Oct NATGUG but, just in case they haven't and as I'm writing anyway, I'll start by suggesting a reason why I think Bill Cowhig is having trouble and give the remedy.

I suspect that he is unaware of the LDOS double density foible: it writes the whole disc, including the BOOT sector 0 in double density and there in lies the problem. The ROM routine can only read single density and therefore BOOTing comes to a sudden halt because the ROM cannot do its job and hand over to SYS0. At least I hope that's all it is, because, if it is, then there's an equally simple answer. Buy the 'Sole' program by Roy Soltoff, which was

written just to overcome this LDOS double density problem. It can be obtained from :-

MISOSYS,
P O Box 4848,
Alexandria,
VA, 22303-0848
USA.

for $25. However, I've just had a notification from Molimerx that, as from Jan 84 they are going to stock all LSI supported progs, at USA equivalent prices, so it's worth him enquiring of Molimerx first.

Mervyn Baker

MODEL 4 OBSERVATIONS - Edward Rashbrooke

Since the Model 4 arrived around three or four months ago, it does seem to have built a good following of advocates. There is still a certain sense of deja-vu, when considering the use of Model 4 in its native mode due to the still scarce software.

Many of the notes in the newsletter about characteristics of individual machines do seem to apply mine as well.

This includes:

- Screen pull when performing disk access, until the machine has run for 20 minutes or so.

- Different screen intensities in M3 and M4 modes.

- Noisy disk drives (but then I was used to almost silent TEACS on my Model 3s).

- Rather hurridly prepared documentation (or so it appears). The main user guide does not have the same quality look as the previous Model 3 documents.

- Lack of technical information about what goes on inside the box (both hardware and software).

Having said all of these things the machine is still excellent to work with. As an LDOS user ever since it was first released for the Model 3, the switch to a Model 4 has been cushioned to a considerable extent. It means that I can now continue to use the Model 3 mode for many existing jobs and gradually migrate work across to the Model 4 mode as products become available. The media compatibility of the LDOS 5.1 and TRSDOS 6 operating systems will certainly assist this.

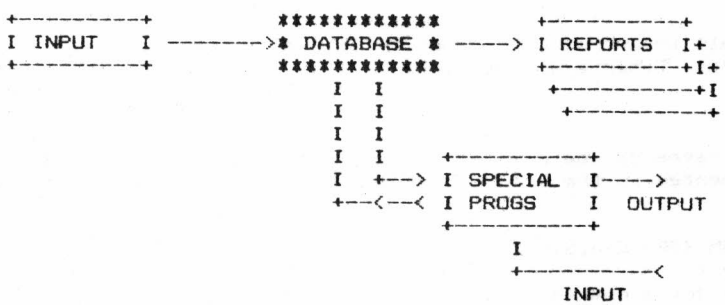
Logical Systems (LSI) also produced an upgraded LDOS 5.1.4 which can take advantage of the clock speed increase of the Model 4, and this does make a difference to certain types of work. LSI have also produced a version of their 'C' compiler and EDAS editor assembler for the Model 4, so things are beginning to move.

BASIC has already been described as causing a number of problems because of the different implementation in TRSDOS6. Personally, I see little benefit in converting many programs at this stage, and will probably re-write applications as necessary. Provided the DATA is transportable, there is still plenty of flexibility between use of the Model 4 as a Model 3 substitute, Model 4 or CP/M system.

The exciting thing about the Model 3 operating systems and general developments with the 3, is that there is now a maturity within the software available and this gives a very powerful set of facilities to the user. A few examples would be PROFILE 3 PLUS, NEWSCRIPT, LC, ALCOR PASCAL, VISICALC and of course the numerous operating systems.

For most development work that I undertake, the BASIC language is becoming a simple tool to write bridging programs whilst massaging data. In consequence, the portability of the programs is less important than it would have been say 2 years ago. Most data is now handled by a database program (i.e. Profile 3 Plus HD) and judicious interpretation of the ASCII files created enables many reports and summaries to be produced. The concept of DIF (data interchange format) also simplifies much processing, and again it is easy to produce simple bridge programs to handle DIF data.

I would strongly recommend many people to consider the use of a data base / data entry subsystem for the collection of data, rather than re-inventing the wheel. Such programs can simplify input requirements and perform essential editing of the data through a standard interface. This has an advantage when an "upgrade" such as Model 4 arrives. The database package facilities currently available in Model 3 mode will inevitably be very similar to those available on the Model 4. Therefore the transition can be handled by the substitution of a new "front-end" into the main data. The routines to then handle the main processing of the data will have far less processing within them and be consequently simpler to re-write.



Working with mainframes one is aware of the need for "upward compatability", to keep up with the regular routine upgrades of both software and hardware. The principles of this rather defensive approach to application development can also be applied to small systems to allow for the routine absorbtion of newer technologies.

As an existing LDOS user, I am also plugged into the LSI newsletter which has had a few TRSDOS 6.1 patches. I hope Roy Soltoff will not mind me quoting a few of general interest:

*** THESE ARE FOR TRSDOS 6.1 ***

```
. Correct free map display for hard drive
. Patch SYS7/SYS.LSIDOS
D05,38=C5 CD 4F 26
F05,38=CD 4F 26 c5
. End of Patch

. Lengthen drive check timing for file search
. Patch SYS2/SYS.LSIDOS
D00,E6=1F
F00,E6=15
. End of Patch

. Wide (A) directory display as default (like LDOS5.1.4)
. Patch SYS6/SYS.LSIDOS
D04,B0=FF FF
F04,B0=00 00
. End of Patch

. Change REMOVE back to KILL
. Patch SYS1/SYS.LSIDOS
D01,CB=4B 49 4C 4C 20 20
F01,CB=52 45 4D 4F 56 45
. End of Patch
```

I presume everyone has figured out that CTL-R repeats the last DOS command ?

You all know that DIR :2- means all DIR all drives from 2 upwards. Other examples would be DIR :1-:3 or DIR -:1. Try!

Step rates can be changed without patching the DCT as was documented in the last NATGUG newsletter. The command is:

```
SYSTEM (DRIVE=n,STEP=m)
where :
   n= drive number (0,1,..7)
   m=step rate 0 = 6ms
               1 = 12ms
               2 = 20ms
               3 = 30ms
```

To increase motor on delay on slow disk drive (some TEAC models), try the following:

```
SYSTEM (DRIVE=n,DELAY=ON)
where:
   ON = sets 1 second motor on time (OFF = .5 second)
```

I append a short DCT (drive code table) re-configure program written in 'C' which will enable hard-disk users to force LDOS to use drives 0,1,2,3 as the hard disk. This is done by swapping the DCT information the same way that the SYSTEM (SYSTEM=x) command allows for drive 0. Note that a full LDOS system must reside on the new LDOS platter 0!

This utility will allow access times for hard disk users to be improved by avoiding the normal floppy disk search for existing files. Of course, the floppy disks can be switched off completely under LDOS with SYSTEM (DRIVE=x,DISABLE), but this utility gives a slightly less restrictive facility.

This version of the program is written for LDOS 5.1.4, but could be easily adjusted for TRSDOS 6. Once run, the new DCT information can be stored using SYSTEM (SYSGEN) and then restored automatically on re-boot from the CONFIG/SYS file.

```
/* HARDDISK- a program to exchange disk control table
   entries.  This can be used to change the search order
   of disk drives.  Because LDOS's SYSTEM (SYSTEM=n)
   does extra checking, ensure drive 0 contains full
   LDOS system.
 1 Origin : SWAPDCT : C User group         02/06/83
 2 Revised:         : Redirect + Maxfiles 02/23/83
 3 Upload :         : Steve Hill          04/28/83
 4 Revised: HARDDISK: Edward Rashbrooke   11/14/83
 5 Revised:         : Remove (2)          12/11/83

        USAGE is:     HARDDISK

*/

£include stdio/csh
char hold[10];
int ifrom,ito;
£define DCTADDR 0x4700
main()
{
     fputs("HARDDISK : Swaps DCTs for hard disk ",stderr);
        ifrom = 1;
        ito   = 5;
        dctswap(ifrom,ito);
        ifrom = 2;
        ito   = 6;
        dctswap(ifrom,ito);
        ifrom = 3;
        ito   = 7;
        dctswap(ifrom,ito);
        ifrom = 0;
        ito   = 4;
        dctswap(ifrom,ito);
```

```
dctswap(ifrom,ito)
   int ifrom,
       ito ;
{
        ifrom*=10 ;     /*  offset into DCT  */
        ito*=10   ;     /*  offset into DCT  */
        move(DCTADDR+ifrom, hold, 10);
        move(DCTADDR+ito, DCTADDR+ifrom, 10);
        move(hold, DCTADDR+ito, 10);
}
```

USING THE 8253 PROGRAMMABLE INTERVAL TIMER

If you need to generate a wide range of frequencies, or use accurate time delays, the Intel 8253 is the ideal device to use. As can be seen from the diagram, it is very easy to interface to the Model I bus. Of course, one can generate long timing delays using the 50ms clock in the Expansion Interface, and shorter delays can be generated using software timing loops. The former technique cannot be used for short delays, and the latter method ties up the processor, so the use of a programmable interval timer such as the 8253 can be very helpful in certain situations.

The device contains three independent 16-bit software-controlled counter/timers, each one having a clock input, a gate input, and an output. The maximum clock rate is 2 MHz, hence the 4 MHz oscillator and divide-by-two flip-flop.

The 8253 is quite a complex device, and a full explanation of how to use it would take up all of this newsletter, so I will just explain how to use it in the simplest mode, as a programmable frequency divider. The frequency to be divided goes into the CLK 0 input. For the counter to operate the GATE 0 input must be held high. The divided frequency appears at OUT 0, where it can be monitored using an oscilloscope.

The following simple BASIC program is all that is needed to generate a wide range of frequencies, down to 30.5 Hz or so.

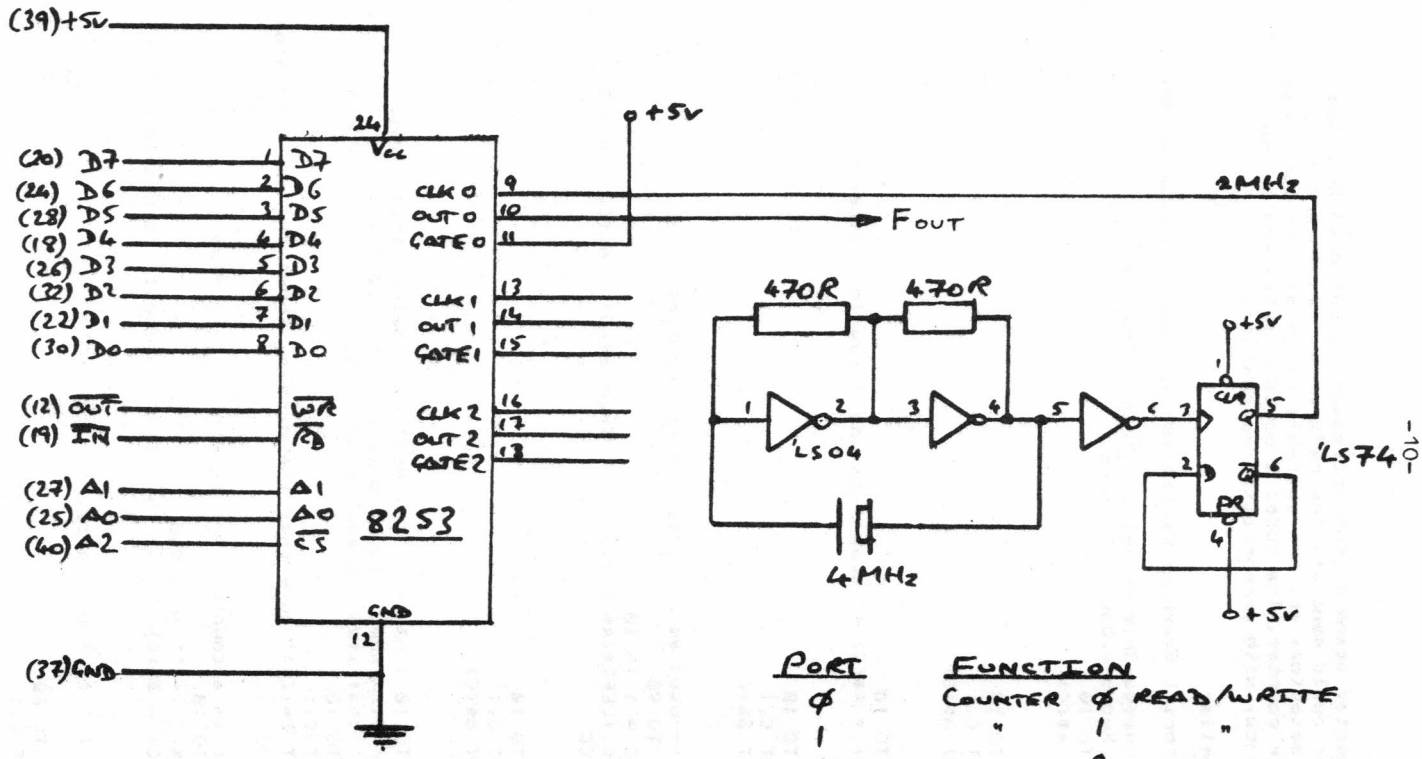
```
5 INPUT X,Y 'INPUT DIVISION FACTOR
10 OUT 3,&H36 'SELECT COUNTER 0, MODE 3, BINARY COUNT
20 OUT 0,X 'LOAD MS BYTE
30 OUT 0,Y 'LOAD LS BYTE
40 GOTO 5
```

If both bytes are zero, the maximum division factor of 65536 is placed in the counter.

Some applications of this circuit are:-

Wide-range signal generator
High frequency synthesiser using a phase-locked loop
Morse code generation
Bit-rate generator for a UART or USART such as the 8251
Frequency and time measurement

The second suggestion would not work too well for a communications receiver, say, due to the RFI generated by the computer, but it would be satisfactory for general test purposes, and to try out techniques that could later be



PORT	FUNCTION
Ø	COUNTER Ø READ/WRITE
1	" 1 "
2	" 2 "
3	CONTROL REGISTER (WRITE ONLY)

implemented using a CMOS processor to cut down RFI. One counter could generate the reference frequency for the phase detector, and the variable ratio divider could use another counter. The Model I could display the output frequency, with appropriate programming.

Leon Heller

```
5 'A Simple Tutorial Swapping Variables  and Deleting from an Array
10 CLEAR 1000
100 DATA Pain,Knaggs,Shields,Heller,Christie,Mackie
105 DATA Young,Redford,Donald,Gibbons
110 FOR C = 1 TO 10
120       READ A$(C)
130 NEXT C
140 '
200 FOR C = 1 TO 10
205       PRINT C,;
210       PRINT A$(C)
220 NEXT C
230 '
300 FOR C = 1 TO 10
310       B$(C) = A$(C) :' swap from one array to another.
320 NEXT C
330 '
400 FOR C = 1 TO 10
405       PRINT C,;
410       PRINT B$(C)
420 NEXT C
430 '
490 D = 1:'------used as a counter in the routine
500 FOR C = 65 TO 90
510      FOR CC = 1 TO 10
520      IF ASC (LEFT$(A$(CC),1)) = C THEN B$(D) = A$(CC): D = D + 1
530      NEXT CC
540 NEXT C
550 '
600 FOR C = 1 TO 10
605       PRINT C,;
610       PRINT B$(C)
620 NEXT C
630 '
640 FOR C = 1 TO 10 : A$(C) = "" : NEXT C :' delete this array.
700 INPUT"Enter Item number to be deleted ( 1 - 10 ! ) :-";Q
710 B$(Q)="" :' that item now equals nothing.
800 FOR C = 1 TO 10
810       PRINT C,;
820       PRINT B$(C):' note that the display shows the no. with a blank.
830 NEXT C
835 '
890 CC = 1 :'cc is a counter used in the next routine
900 FOR C = 1 TO 10
910       IF B$(C) = "" THEN 940
920       C$(CC) = B$(C) : CC = CC + 1 :'increment the counter.
940 NEXT C
945 '
950 FS = CC -1 : ' fs = file size.
960 '
1000 FOR C = 1 TO FS
1010      PRINT C,;
1020      PRINT C$(C):'note that the display/file contains 9 items.
1030  NEXT C
1040 '
1050 'Brian Pain.
```

WE'RE ALL BEGINNERS SOMETIMES (AGAIN)

If you read my previous article in the July issue you will recall mention of help from and praise of GNOMIC and especially their Barry Dunn.A post-scrpit to my comments about the NATGUG help-line was that sometime after the article appeared during August I received a phone call from John Rutherford who turned out to be on the telephone and we had an interesting chat. I believe he was going to let Brian know his proper telephone number.

By the time the article appeared in print I was chewing my teeth to the gums with my system. I started having endless problems —zapping disks with endless HIT errors; Directory errors;parity errors and so on. I found that the system seemed better at certain times of the day than others but no way would it work reliably.

I got so fed-up that I took my whole system upto GNOMIC so that it could be tested thoroughly and so that I could also seek face-to-face help.

I was met at Durham station by Barry Dunn and driven out to the factory where everything was tested and everything worked perfectly! That was a frustrating experience but at least I knew the hardware was sound. I was grateful for the help and kindness shown by GNOMIC.

Back in Wolverhampton I tried to track down the problem. I laid a separate mains circuit and tried a Tandy mains interference supressor. Some improvements were noticable but in late October I took my set-up to school and had it there for a month where it worked perfectly in the computer room surround by 14 RML machines and monitors. I came to the conclusion that at home I was plagued with some interference to which my Model 1 was especially sensitive.

I therefore started looking at a replacement and selling mine to raise funds. I discovered two things: the market for second-hand Model 1 machines wasn't exactly lucrative and also it was difficult to come to any decision about a replacement. The new colour machines are very attractive in their way but their colour graphics are their only main difference. The range and standard of software is not there and if you have moved beyond the games playing stage then the choice seems to me to be between "serious" applications such as word-processing and data-bases and pure graphics. As my interests seemed to be moving towards the former, coupled with an interest in CP/M then a colour computer seemed less vital.

During November I cam across a Genie 3 in a well-established local stationers who had set up a computer department run by a very expert young man, ex-Tandy and ex-various computing jobs. I had looked with interest at the Model 4, offering its dual TRS-80 and CP/M software capability and here was a similar machine with some added advantages, namely: twin 80-track double-sided drives

RS232 port built-in 64 & 80 column display
8 Function keys
CP/M 2.2 included

all-in price of £1300 incl. VAT

Leaving aside the undoubted advantage of the 80-track drives, I found that the cost of installing an RS232 into a Model 4 and buying CP/M on top of the already higher price of a Model 4 compared with the lower price of the Genie 3 meant that I could save nearly £400—which would be useful as I hadn't got that £400.

The upshot of it all was that I arranged to try the Genie 3 at home over Christmas in case there were any problems of the sort I faced with the Model 1. There have been none at all and I have been able to copy my existing Model 1 programs and files over onto the Genie 3 and as from now it is my only machine as the Model 1 went away yesterday.

I would voice one criticism of the Genie 3 after two weeks use—NEWDOS 80—or rather the version supplied with the machine. It lacks 6 of the programs supplied with the standard NEWDOS 80 v.2.0—

SuperZap
Disassem
Edtasm
Aspool
Dircheck
Lmoffset —which is of no use as the Genie 3 doesn't support tape anyway.

These seem to me to be serious weaknesses.

I know that the TRS-80 Models 1 & 3 worlds seem to be divided into LDOS and NEWDOS camps and each has good points as must DOSPLUS, MULTIDOS etc., but having used LDOS for the past 5 months I find NEWDOS hard going—the manual is unbelievably obtuse. I really long for a version of LDOS for the Genie 3 but am told by Harding's that they have given up all work on the Genie 3 in preference for the Model 4. A great shame I call that.

I would welcome help from and contact with any Genie 3 owners and especially those who have successfully set up double-sided drive system disks. I've tried following the manual but attempts to load Basic give me "Load File Format Error" and I can't extend the Directory size. Edward Rashbrooke's article in the December Newsletter on Hard Disk versus Floppy indicated that there were some VG3 owners.

The recent articles weighing the BEEB against the TRS-80 were thought-provoking. I suppose it all depends on what you use a computer for: graphics or words; business or teaching, etc.

One point mentioned in passing was school use. In wolverhanpton, as in many authorities, the debate is very academic as very many areas have specified only one brand of machine to be supported. In an Education authority literally down the road from Wolverhampton—Walsall (home of Tandy U.K) they have gone for Tandy. In Wolverhampton, as in many, the choice is Research Machines. In my school where I am, as well as being Head of Upper School, Network Manager(!) we have an RML Network and 14 RML machines, mostly 480Z Link type with a Z80A processor, 64K Ram, 16K High Resolution Colour Graphics Ram running under MP/M and CP/Net plus RML Logo, Wordstar 3 etc., which to a die-hard Tandy enthusiast is a great shame. It grieves me that Tandy have completely missed the educational market—mostly with the obselete Model 3 (low-res graphics and black & white) and the over-priced Colour Computer. The wealth of software available for the TRS-80 stable just can't be matched by either RML or the BEEB stable. Wolverhampton won't touch the BEEB because of poor mechanical reliability, small memory, antiquated disk system.

The great thing about the TRS-80/Genie stable is that you can do so much computing on the machines. The machines are reliable, the software is reliable and so is the support, from both manufacturers and users. Talking about users and knowing that comparisons are both odious and invidious, the BEEB users' group advertising is something that must attract a lot of members. We don't seem to do the same. How about some aggressive advertising in the weeklies and monthlies.

It may be of interest to anybody that I have every 80-Micro if anyone wants to make telephone or letter enquiries and I'm working on setting up a database based on AIDS which will help me if anyone seeks some info. Is anybody interested in a copy of August 83 80-Micro? Also a copy of Load 80 for the Anniversary Issue.

Robin Davies: 13, Paget Road, Wolverhampton WV6 ODS 0902 23735

THINGS THAT GO BUMP IN THE ROM, LPRINT CHR$(10), DOS EXITS ETC.

In the September '82 issue of "Newsletter", I wrote a brief article about LPRINTING CHR$(0),(11),(12). To get all the facilities of the MX80, it is necessary to send these codes directly to the printer without any change by the TRS80. The article describes how this is done, and several people in later months commented on different ways of doing it. I thought that was it until quite recently. I was trying, in a BASIC program, to set up the Epson to do horizontal tabs, one of which was to column 10. For some reason, although I sent out the right codes, it always went to column 13. Try this little prog to see the problem. What should be nice even tabs isn't !!

```
10 '          **** TABSTEST/BAS ****
20 '
30 LPRINT"01234567890123456789" '          SOMETHING TO COUNT WITH
40 LPRINTCHR$(27)CHR$(68);       '  SET HORIZONTAL TABS SEQUENCE
50 LPRINTCHR$(7)CHR$(10)CHR$(13)CHR$(16)CHR$(255)'THE TAB POSNS
60 LPRINTCHR$(9)"X"CHR$(9)"X"CHR$(9)"X"CHR$(9)"X"
```

I then discovered further that, in Hires printing, if you sent CHR$(10) you got different results from what you were expecting. Suffice to say, it all came down to the fact that in the Level II ROMs there's a bit of "useful" code that, when you try to send CHR$(10) to the printer, decides that's not really what you meant and helpfully puts out instead CHR$(13). So how do we get round it ?

I think one of the reasons that the TRS80 has so many DOSs and Disk Basics, is that whenever the original ROMs were written, lots of "Exits" or "Hooks" were put in. The idea here is that instead of crashing around exclusively in the ROM for things like VDU & Keyboard drivers, the CPU jumps out at certain places to points in RAM where you can put clever bits of code to work in conjunction with the ROM. This is also the way that Disk Basic gets the extra commands (OPEN, LSET, MKI$, TIME$ etc) - it writes addresses in RAM that the ROM will look for when it finds these commands.

How far they had got with Disks when the ROMs were written I don't know, but it is a tribute that whatever Exits they put in seem to be useful ones. We're going to use one which the ROM jumps to just before sending a character to the Video, Printer or Tape. Whenever this is about to happen, we'll find ourselves in the ROM at address 032AH, with the character in the A register. I've disassembled and commented this.

```
      SENDCHR: EQU  $
032A           PUSH BC          ;WE'RE GOING TO USE C REG
032B           LD   C,A         ;NOTE THE OUTPUT CHAR IN C

032C           CALL 41C1H       ;** THIS IS THE DOS EXIT **
032F           LD   A,(409CH)   ;THIS HAS -1=CASS 0=VDU +1=PTR
0332           OR   A           ;SET FLAGS

0333           LD   A,C         ;PUT THE CHAR BACK INTO REG A
0334           POP  BC          ;AND RECOVER B & C REGS

0335           JP   M,0264H     ;WAS MINUS - DO CASSETTE BIT
0338           JR   NZ,039CH    ;WASN'T ZERO - MUST BE PRINTER

033A   CRTOUT: PUSH DE          ;THIS IS THE VIDEO BIT
033B           CALL 0033H       ;NORMAL VIDEO OUTPUT
                                ;SUBROUTINE CONTINUES HERE
```

All that this really does is to have a look at a byte in 409CH, and decide which device were sending the character to. If its the printer we end up at 039CH. Now lets have a look at that bit.

```
039C           PUSH AF          ;SAVE A FEW REGS
039D           PUSH DE
039E           PUSH BC
039F           LD   C,A         ;NOTE THE CHAR TO BE PRINTED
03A0           LD   E,00H       ;RESET A COUNTER = CHARS/LINE

03A2           CP   0CH         ;WAS THE PRINT CHAR CHR$(12) ?
03A4           JR   Z,SKIP2     ;YES - SKIP PAST NEXT BIT

03A6           CP   0AH         ;CHR$(10) ? - WHAT WE WANT !
03A8           JR   NZ,SKIP1    ;NO - DO ANOTHER TEST

03AA           LD   A,0DH       ;HERE'S THE CULPRIT -
                                ;A CHR$(13) !
03AC           LD   C,A         ;LET'S PRETEND IT WAS THERE
                                ;ALL THE TIME !

03AD   SKIP1:  CP   0DH         ;ROUTINE TEST FOR CHR$(13)
03AF           JR   Z,SKIP2     ;YES - SKIP ON AS BEFORE

03B1           LD   A,(409BH)   ;GET NO. OF CHARS IN LINE
03B4           INC  A           ;ADD ANOTHER ONE
03B5           LD   E,A         ;WE'RE COUNTING THIS IN E

03B6   SKIP2:  LD   A,E         ;COME HERE FROM SEVERAL PLACES
                                ;THE PRINTING CODE
                                ;GOES ON HERE
```

Now quite a lot of this is some nonense with a characters-per-line counter in the E register, and the fact that we want to reset it if we're going on to a new line whether by CHR$(10), CHR$(12), CHR$(13). You can see where things go wrong at 03AAH though.

So on to the fix. What I have done is to change the DOS Exit to do an early check of which device we're sending to. If its the printer, we go into the printer bit, but at a slightly different point to get round the CHR$(10) problem. If its anything else, we go off to the original DOS Exit, having discovered where it was when initialising. While doing this, incidentally, the opportunity is taken to install the original CHR$(0),(11),(12) patch. The only other thing is that the stack has to be kept right because we jump directly from the new DOS Exit CALL to the printer code. Here goes.

Page 1

```
                ;**** PRFIX/SOF ****
                ;**** 22/11/83 ****

                        ORG  OFFB6H

FFB6 21C0FF START:  LD   HL,SETUP      ;WHERE CODE STARTS
FFB9 2B             DEC  HL            ;GO BACK A BYTE
FFBA 224940         LD   (4049H),HL    ;SET HIMEM TO PROTECT
                    EXEC START
FFBD C32D40         JP   402DH         ;BACK TO DOS


             SETUP: EQU  $
FFC0 21FBFF         LD   HL,PATCH2     ;ADDR OF 0,11,12 PATCH
FFC3 222640         LD   (4026H),HL    ;REDIRECT PRTR ROUTINE

FFC6 21C141         LD   HL,41C1H      ;OLD EXIT CODE IS HERE
FFC9 11E7FF         LD   DE,POKE       ;WE'LL COPY UP TO
FFCC EDA0           LDI                ;THREE BYTES OF
FFCE EDA0           LDI                ;THE ORIGINAL CODE
FFD0 EDA0           LDI                ;INTO OUR PROGRAM

FFD2 21DEFF         LD   HL,NEWEXIT    ;NEW EXIT CODE START
FFD5 22C241         LD   (41C2H),HL    ;STORE FOR ROM TO USE
FFD8 3EC3           LD   A,0C3H        ;OPCODE FOR JUMP
FFDA 32C141         LD   (41C1H),A     ;STORE THAT TOO

FFDD C9             RET                ;BACK TO BASIC
```

```
29
30
31 FFDE F5      NEWEXIT:PUSH AF             ;DON'T LOSE THE CHAR
32 FFDF 3A9C40          LD   A,(409CH)      ;GET THE DEVICE BYTE
33 FFE2 FE01            CP   01H            ;IS IT PRINTER ?
34 FFE4 2804            JR   Z,PATCH1       ;YES - GO TO NEW BIT
35 FFE6 F1              POP  AF             ;RECOVER CHAR
36 FFE7 000000 POKE:    DB   00H,00H,00H    ;OLD EXIT CODE HERE
37
38 FFEA F1      PATCH1: POP  AF             ;CLEAR PUSH AT FFDEH
39 FFEB C1              POP  BC             ;EXIT CALL RETURN ADDR
40 FFEC C1              POP  BC             ;CLEAR PUSH AT 032AH
41
42 FFED F5              PUSH AF             ;HERE ON IS A
43 FFEE D5              PUSH DE             ;MODIFIED VERSION OF
44 FFEF C5              PUSH BC             ;WHAT'S IN THE ROM
45 FFF0 4F              LD   C,A
46 FFF1 1E00            LD   E,00H
47
48 FFF3 FE0C            CP   0CH            ;TEST CHR$(12) AS ROM
49 FFF5 CAB603          JP   Z,03B6H        ;DO THE SAME IF IT IS
50
51 FFF8 C3AC03          JP   03ACH          ;SKIP CHR$(10) TEST
52
53
54 FFFB 79      PATCH2: LD   A,C            ;FIX CHR$(0),(11),(12)
55 FFFC C3B405          JP   05B4H          ;BACK TO PRINTER CODE
56
57                      END
Exec Addr FFB6
```

To run all this, just run PRFIX from DOS to load the code and set HIMEM. Then load BASIC, and include an initialising line -

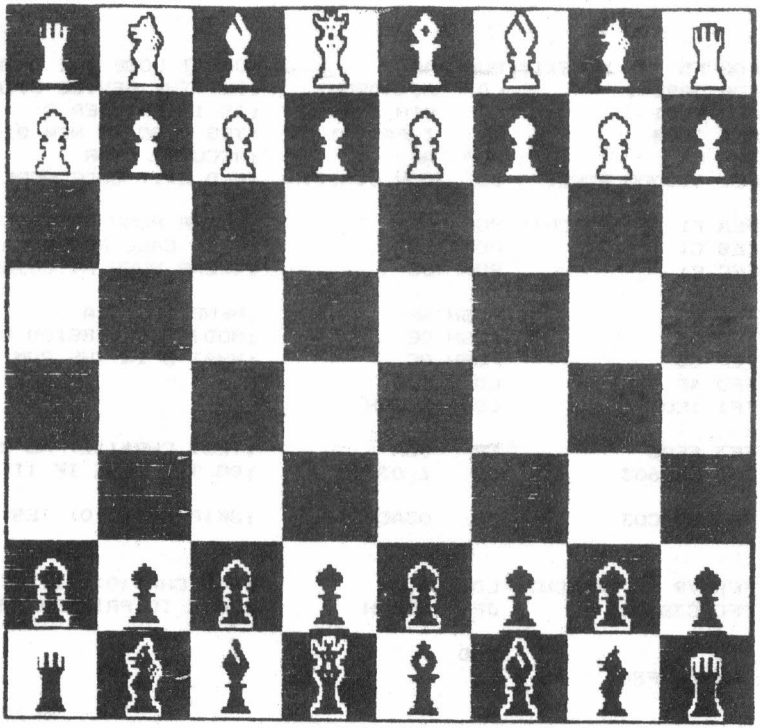
```
25 DEFUSR=&HFFC0:A=USR(0) 'FFC0H is the address at SETUP:
```

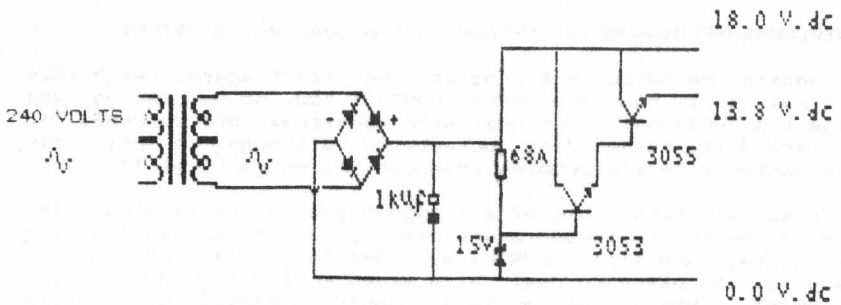
Try running the BASIC test prog at the start again, with this new line. It'll now cope with CHR$(0) too, so be daring and change the CHR$(255) (optional with Graftrax 80) to CHR$(0). I'm afraid its rather disk orientated, although in principle there wouldn't be any problem in a conversion to Level II.

This may all seem a bit of a sledge hammer to crack a nut (or worse - completely incomprehensible !), but it does demonstrate some points, and I can LPRINT my CHR$(10). I'm looking into extending the patch to deal with video output too, so that you can PRINT CHR$(X) where X>191 would normally give space compression codes. The need for this arises with the excellent HiRes Graphics kit advertised in the September 1983 issue of NATGUG NEWS (p43).

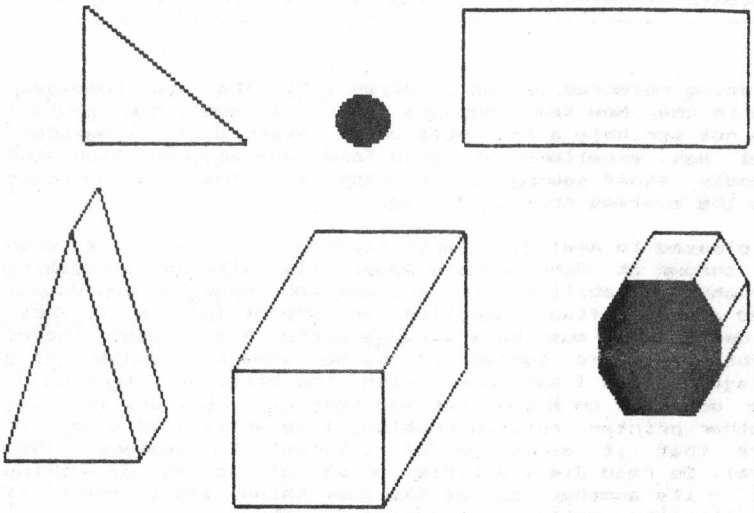
If anyone wants any further info on any of the above, please do get in touch ....

Don Bannister .... Tel 0232- 668899 (home)

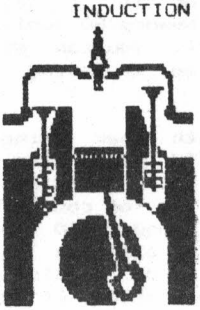




VOLTAGE SMOOTHED D.C. POWER SUPPLY



INDUCTION



Inlet valve open

Piston descends

drawing in

Air/Fuel mix

COMPRESSION

Valves

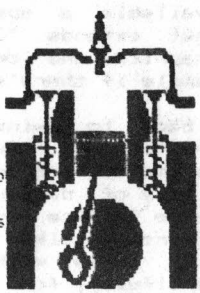
closed

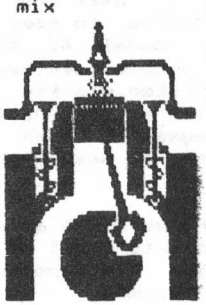
Piston

rises to

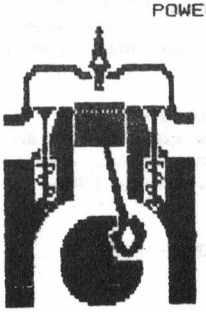
compress

Mixture





POWER



Compressed Gas

ignited by

Spark, expands

& pushes Piston

down

EXHAUST

Valve

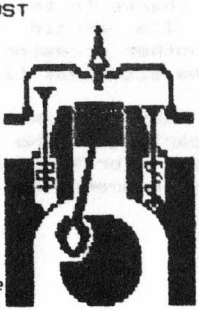
opens

Flywheel

pushes up

Piston to

expel waste



LATE NIGHTS AT SWINDON, HIRES GRAPHICS, BROKEN ELASTICS ETC.

After being referred to as a "doyen", by The Hon Commissar (omitted in the New Year Honours again I see), how could I possibly not scribble a few notes on my experiences in Swindon. The hotel was excellent with good food and accommodation, and the friendly staff seemed fairly happy with the odd few souls still in the systems room at 3/4 am.

I was pleased to meet Jim Bartholomew at an early stage when we were thrown at John Carne's Model III with multi-megabyte hires graphics capability, in a quest for Epson screen dumps. We looked at the software supplied for one of Tandy's printers, and decided that it must be a strange piece of equipment indeed - the Epson software turned out to be somewhat simpler. At a later stage, Jim & I sat down with the original intention of planning our talk on Epsons for the next day, but got involved with another printer related problem. I've written this up, in the hope that it might be of interest to someone. (See elsewhere). Do read Jim's article on p9 of the Dec '83 edition as well - its another use of the same thing and I think it explains it rather better than I have (so there !).

The (Microware) Hires Screen modification kit is all the rage over here in the Emerald Isle, and is proving to be of use to a number of us. Should anyone have a use for it, I have available a specially written SYS file for Newdos/80 (only) that extends "JKL" to do the Hires as well. You can mix graphics and ordinary alphanumerics, and I am enclosing a sample if there's room for it in the "News".

Back to Swindon though. Got carried away with other things and missed some of the lectures. (Pity - I'd particularly wanted to find out about Scripsit from Geof Smith). There were plenty of different machines to see. Model I's (of course), Genie 3 (Nice one Tim), Model 4, Model II, Model 100 and others. I liked Carl's speech synthesis device although his disk drive with the broken elastic was a bit of a blow ! Mercifully, few people saw my fascinating demonstration of how to recover a highly fragmented disk file that wasn't lost - this may have been because it was about 2am on Sunday morning. Ssssh Laurie.

Thanks to those who braved Jim & myself talking about Epsons - I'm afraid it turned into a bit of a marathon - perhaps on another occasion we'll have the opportunity to get onto some of the bits that time didn't permit.

Must finish though, and a few credits are in order. The Sparlings, who helped out and kept the coffee coming, Brian & Leon for keeping things running throughout the year, and all the members who make our group as good as it is. Happy 1984.

.... Don Bannister .... Tel 0232- 668899 ....

SUPERSCRIPT TYPE FACE CODES

SuperScript, that neat little patch to Scripsit by Acorn Software, gives typeface control, extra commands and the ability to access the Directory.

The instruction manual shows how to select a driver for your own printer.

CUSTOM/PAR is its multi-purpose, parallel driver. This asks for the hex codes that your printer needs for superscripts, subscripts, boldface, 10-pitch and 12 pitch. Then it modifies the original Scriptsit so that by typing, for instance @ Y, @ T you can change to 12-pitch printing; @ Y, @ B gives 10-pitch.

But do users realise that these hex codes are not sacrosanct ?

When CUSTOM/PAR asks for the code for 12-pitch; instead of answering correctly, you give it the code for any typeface that your printer can handle.

The Epson FX-80 gives a big, bold type on the command :-

```
CHR$(27); "!"; CHR$(56);    so you put this in hex :-
      1B     21       38

and emphasised pica is :-

CHR$(27); "!"; CHR$(8);      which becomes :-
     1B     21       08
```

No matter what the BASIC command is, you just translate it to hexadecimal. Now, after CUSTOM/PAR modifies Scriptsit, you can call up enlarged headlines with @ Y, @ T then go back to pica with @ Y, @ B

A second idea is one of those so simple that you wonder why you never thought of it yourself ... I watched John Kilpatrick making out a rota of members and times for his local ham radio club.

Me, I would have used Scriptsit and juggled about to get straight columns. John made out his list in Visicalc ... a program that everybody else uses just for numbers. Yet in Visicalc he had ready-made columns.

When he had finished, he just hit the Print command.

A nice bit of lateral thinking, John !

Arnold Handley
Colchester (0206) 241725

COMMUNICATIONS BETWEEN MODEL 100 AND MODEL I

Assuming you are using the Tandy RS-232 board, it is not advisable to just plug the cable from the Model I into the back of the Model 100. Both machines are configured as Data Terminal Equipments (DTE) and although you can reverse pins 2 and 3 on the RS-232 board in the Model I, the other signals will be trying to output to one another. This will not result in any damage, but will prevent proper hand-shaking between the systems. You will therefore require what is termed a null modem connector, with all the signals crossed over. Tandy can supply such a connector, or you can easily make one up for yourself.

Assuming you have a smart terminal program like ST80-III on the Model I, you set the system up for 300 baud, 7 data bits, even parity, 1 stop bit, transmit auto line feed ON, and receive auto line feed ON.

On the Model 100, select Telcom from the main menu, then set the RS-232 parameters using F3 (STAT: 37E1E). Now use F4 to get into terminal mode. Keys pressed on the Model I should be echoed on the Model 100, and vice-versa, showing that all connections have been made properly, and that the software on both systems is functioning.

If you are transferring a file from the Model I to the Model 100, you now get the file into the Model I buffer, using <cmd>G (<cmd> = shift). Respond to the transmission speed question with 1, to be on the safe side. On the Model 100, use F2 to select the download mode. The system will request a file name. After inputting the file name, F2 will be displayed in reverse video. Now press <cmd>O on the Model I keyboard, and the file will be transferred from the Model I to the Model 100, being simultaneously displayed on the Model I and Model 100 screens. When the file has been transferred ST80-III Ready will be displayed on the Model I display. If you press F2 on the 100, the file will be closed, and you can exit from Telcom by pressing F8 twice.

To upload from the Model 100 to the Model I, first set the Model I up for receive auto line feed ON (<cmd>B), and open the memory buffer (<cmd>C). Keying F3 on the 100 will result in the request for a file name. Input the file name, and respond to the width question with <ENTER>. UP will be displayed in reverse video, and the file will be transferred to the Model I, being displayed on the Model I screen as transfer occurs.

When the file has been transferred, UP on the 100 screen will change from reverse video to normal. Keying <cmd>X on the Model I will close the memory buffer, and the file can be transferred to disk using <cmd>F.

Leon Heller

RANDOM NUMBER GENERATION USING C

The C/80 compiler I use does not include a random number generator function in the library as supplied. I therefore wrote one for myself. The function rand() actually generates the random numbers (between 0 and 1) using a technique I filched from a Hewlett-Packard HP41 program. Although this technique is very simple, H-P claim it to be an excellent source of random numbers.

C/80 also lacks a function to return the fractional part of a real number, this is done by the function frac(). It made sense to define this as a stand-alone function, as I might wish to use it in other programs.

Multiplying by 100 and taking the integer part of the result produces random integers between 0 and 99.

In practise, the seed would be input by the user, or generated from the real-time clock, or Z80 refresh register contents.

```
#include <fprintf.h>

float num; /* define num as a global variable */

main()
{
    float rand();
    int i;
    num = 0.5;  /* seed for random number generation */
    while(1) printf("%d ",i = 100 * rand());
}

float rand() /* this function does all the work */
{
    float frac();
    num = frac(9821*num+0.211327);
    return(num);
}

float frac(n) /* return fractional part of a real number */
float n;
{
    int i;

    i = n; /* convert real to integer */
    return(n - i);
}
```

Leon Heller

TYPESET TEXT FROM SCRIPSIT

Your may recall that about a year ago I asked for help in typesetting the material that I had compiled with SCRIPSIT on my Model III in connection with a bibliography of firework books that I was working on.

I am pleased to be able to report that with the help of the inimitable computer polymath John Newgas and the Sun Printers I seem to have succeeded.

Unlike most simple blocks of text a bibliography requires numerous changes of type face and layout if it is to produce a page of clear and easily comprehensible material.

I already had an enhancement programme for SCRIPSIT that enables it to drive my Epson MX 80 and utilise the various typefaces available and I had produced the original version of my bibliography making use of this programme. In effect an ! followed by a character does not print but switches on and off the appropriate type mode. (To produce the ! in this text two spaces have to be added after the exclamation mark.)

As a first step therefore this coded text was transferred via the RS 232 output port to the Sun Printer's own computer utilising the all-singing all-dancing STERM RS 232 driver programme which enables any transmission format or speed to be used.

It was then only necessary for them to use Global Exchange commands to swap my exclamation mark codes for the appropriate printing code needed by the typesetting computer that they interface with in Cambridge. (These codes use a $ and some of them are shown at the head of the text samples provided.)

To illustrate the various stages of the process I am enclosing sample pages that show the various printings that are derived from the same coded text. (There are some variations in the text as they are not all derived from precisely the same version).

1. This shows the basic SCRIPSIT programme text printed using the "P,I" command that prints all the codes that appear on the screen.

2. The same text using the enhanced programme (MULMX80). (In view of the large number of different exclamation mark codes that are employed, the Epson responds with some curious characters which should be ignored. It would have been possible to use codes to which the Epson would not have responded but at this stage it was not important to me.

3. A sample page of text in which the ! codes have been globally changed by Sun Printers to typesetting codes.

4. The same page as typeset.

If any of your readers are interested in further details I would be pleased to give them more information.

Chris Philip.
19 Coolhurst Road,
London N8.

01-348 2015.

```
;LM=12 RM=76 TM=1 BM=65 J=N_
!+_
'a = a acute_
'e = e acute_
'c = c cidilla_
'o = o umlaut_
'u = u umlaut_
!'a = a grave_
!'e = e grave_
!'o = ö (o with a /. Danish)_
!!'a = a circumflex_
!!'e = e circumflex_
!!!'a = a umlaut_
!!!!'a = a with a squiggle on top. Portugese._
$/ = open square brackets._
/$ = close square brackers._
1/2T = half fraction T_
!B = Commence bold. (Author)          $Fa3$F11$$R2$1$_
!H = Close bold.                      $F1_
!1 = First horizontal rule.           $F2$P10$.$s115_
!2 = Second horizontal rule.          $F10$F25.$S150_
!3 = Commence small bold.             $T$T_
!4 = Close small bold.                $+_
!5 = Commence title type.             $F3$P09$F095$$R2$L$L_
!6 = Close title type.                $+$L_
!7 = Commence Roman numerals.         $P08_
!8 = Close Roman.                     $P09_
!9 = Preceeds all Publishers details._
!0 = Preceeds all book collations._
!40 = Book code line with more than 40 characters._
$' = Commence italics._
'$ = Close italics._
$" = Open double quotes._
$' = Open single quotes._
(####) =  To be answered. CLEAR FROM TEXT BEFORE PRINTING.
////////////////////////////////////////////////////////////_
!1_
!BA:!H J.L.v.  See!BCHERTIER:!H F.M._
!2_
_
_
!1
!BACHALUS!H James._
!2_
_
!5Handbook for Making Rockets and Fireworks.!6_
_
!9Pageant Press: New York 1960._
!027p. illus.  21cms._
                                      !3RLA011000 BL!4_

_
REF:- NUL Subject Catalogue. 1960.
```

!1_
!BADRIANUS:!H Romanus. See !BROMANUS:!H Adrianus._
!2_

!1_
!BALBERTI:!H Guiseppe Francesco Antonio.(1712-1768)._
!2_

!5La Pirotechnia: o sia Trattato dei Fuochi d'Artificio.!6_

!9G.B.Recurti: Venezia !7MDCCXLIX!8 (1749)._
!0TP+vi+128+21Pls.+ii(errori). 24cms._
!3NA0139502 BL8715.ff.38!4_

* SOT. $"Claiming to have modernised and improved the inventions of Frezier, Hanzelet, Henrion, Ozanam and Simienowicz"._

REF:- Du Pont. Berlin 3304. CP._

!1_
!BAMI(Y)OT:!H Joseph Marie. (1718-1793)._
!2_

!5Art Militaires des Chinois ... Tr. en Francois par le P.Amiot ... Rev.& pub. par M.Deguignes.!6_

!9Didot: Paris 1772._
!0xii+397+21Pls._
!3NA BL147.c.10. !4_

!5Memoires concernant l'histoire, des sciences ... des Chinois: par les Missionaires de Pekin. (Vols. 7 & 8. *'Travels in China and Chinese Fireworks'*.)!6_

!9Nyon: Paris 1782._
!0xii+x+396+ Pls._
!3NA0283075 BL146.b.5-19!4_

* Amiot was one of many 18th. century proselytising Jesuit missionaries whose travels throughout Asia resulted in a great quantity of information about the Orient being published in the West. Much of the material in the above works comes from his translation of the *'Wu Pei Chih'* of 1628. A revised translation of some of the Firework material was made a few years earlier by another Jesuit missionary, P. d'INCARVILLE, part of which appeared in ORVAL's *'Manuel de l'Artificier'* published by Jombert in 1757. REINAUD and FAVE also reprinted INCARVILLE's text in their *'Historie de l'Artillerie'*. Although Amiot's work is concerned primarily with the Military aspects of Chinese

a = a acute
e = e acute
c = c cidilla
o = o umlaut
u = u umlaut
a = a grave
e = e grave
o = O (o with a /. Danish)
a = a circumflex
e = e circumflex
a = a umlaut
a = a with a squiggle on top. Portugese.
*/ = open square brackets.
/* = close square brackers.
1/2T = half fraction T
= Commence bold. (Author)
Fa3$P11$$R2$1$
= Close bold. $F1
] = First horizontal rule. $F2$P10$.$s115
= Second horizontal rule. $P10$F2S.$S150
^ = Commence small bold. TT
= Close small bold. $+
= Commence title type. $F3$P09$F095$$R2LL
= Close title type. $+$L
= Commence Roman numerals. $P08
= Close Roman. $P09
9 = Preceeds all Publishers details.
[= Preceeds all book collations.
0 = Book code line with more than 40 characters.
*' = Commence italics.
'* = Close italics.
$" = Open double quotes.
$' = Open single quotes.
(****) = To be answered. CLEAR FROM TEXT BEFORE PRINTING.
//
]
A: J.L.y. SeeCHERTIER: F.M.

]
ACKALUSKY: James.

Handbook for Making Rockets and Fireworks.

9Pageant Press: New York 1960.
[27p. illus. 21cms.

^RLA011000 BL

*

REF:- NUC Subject Catalogue. 1960.

]
ADRIANUS: Romanus. See ROMANUS: Adrianus.

]
ALBERTI: Guiseppe Francesco Antonio. (1712-1768).

La Pirotechnia: o sia Trattato dei Fuochi d'Artificio.

96.B.Recurti: Venezia MDCCXLIX (1749).
[TP+vi+128+21Pls.+ii(errori). 24cms.
^NA0139502 BL8715.ff.38

* SOT. $"Claiming to have modernised and improved the inventions of Frezier, Manzelet, Henrion, Ozanam and Simienowicz".

REF:- Du Pont. Berlin 3304. CP.

]
AMI(Y)OT: Joseph Marie. (1718-1793).

Art Militaires des Chinois ... Tr. en Francois par le P.Amiot ... Rev.& pub. par M.Deguignes.

9Didot: Paris 1772.
[xii+397+21Pls.
^NA BL147.c.10.
Memoires concernant l'histoire, des sciences ... des Chinois: par les Missionaires de Pekin. (Vols. 7 & 8. *'Travels in China and Chinese Fireworks'*.)

9Nyon: Paris 1782.
[xii+x+396+ Pls.
^NA0283075 BL146.b.5-19

* Amiot was one of many 18th. century proselytising Jesuit missionaries whose travels throughout Asia resulted in a great quantity of information about the Orient being published in the West. Much of the material in the above works comes from his translation of the *'Wu Pei Chih'* of 1628. A revised translation of some of the Firework material was made a few years earlier by another Jesuit missionary, P. d'INCARVILLE, part of which appeared in ORVAL's *'Manuel de l'Artificier'* published by Jombert in 1757. REINAUD and FAVE also reprinted INCARVILLE's text in their *'Historie de l'Artillerie'*. Although Amiot's work is concerned primarily with the Military aspects of Chinese pyrotechnics it is an important work in helping to understand the development of Fireworks in the Far East. A full description of Amiot's translation is given by PARTINGTON in his *'History of Greek Fire and Gunpowders'*(1960).

REF:- Backer.

]
ANDERSON: Robert.(1688-1696).

The Making of Rockets ... Experimentally and Mathematically Demonstrated.

9Robert Morden: London 1696.
[TP+xiv+48.
NA BL534.c.22.

9Facsimile ed. (1961?).
[48p. illus. 27cms.

* The title page adds that the book is in two parts, $"The first containing the making of Rockets for the meanest capacity", the other,$"to make Rockets by a Duplicate proposition, to 1000 pound Weight or higher." The dedication is to $"the Rt. Hon. Henry, Earl of Romney ... Master General of his Majesty's Ordnance ... ". The book goes into great detail concerning the manufacture of Rockets and is of a very practical nature. At the time of writing the author had had 25 years experience in $"all sorts of great Artillery".

REF:- Brock. Wing A3105.

]
ANGELO: T.

The Art of Making Fireworks by Plain and Easy Rules.

9J.Bailey: London c.1825.
[TP+FP1+28(-2). 17cms.
^NA0324136 BL1607/2116

9(3rd. ed.) J.Bailey: London c.1830.
[CoverTP+28(-2). 17cms.
^NSA0062348BLP033015

* The title page claims that Angelo was $"formerly of the Woolwich Laboratory", and the list of contents includes, $"directions for making Sky Rockets from 2oz. to 6lbs; Tourbilions, Balloons & Mortars, Roman Candles, Stars etc.", also $"Water Fireworks" and $"Waterloo Crackers" (Snaps).

REF:- Du Pont (c.1820). Brock.

]
ANON.

The following list of ANONYMOUS and PSEUDONYMOUS works can be found in alphabetical order under the name printed in capitals.

ANONYMOUS.

The **ART** of conjuring made easy ... With directions for making Fireworks.

The **ART** of making Fireworks ...

The **BOOK** of Fireworks and wonders.

BUCHSENMEISTER von Geschoss ...

Additamento ao VI. Volume da **COLLECCO DE RECEITA** segredos particulares, ... de Fogo D'Artificio.

The **COMPLETE** conjurer; with the whole art of making Fireworks.

ENDLESS amusements ... in the art of making Fireworks.

$Fa1$P09$$P0$M2500$S110$s150$$A$L
$$Ha bembo b univers med mx 11 25 DENSITY 8.5 PLEASE job no. E1072$$H$+$L
BEMBO$+$L
$$$D01$P07$F3@4$F1$P11DL
$$$T11$F1$M1407LT$L
$$$T12$F2$P09$$R2$M0103$LTL
$$$T13$M0404$LTL
$$$T14$M0001$LTL
$$$T15$M0409$LTL
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$P10$F2$.$S150
$F3$S100$$R1LLHandbook for Making Rockets and Fireworks.$+$L
$F1$P11$S110$$R2Pageant Press: New York 1960.$L
$$M$T27p. illus. 21cms.$T$TRLA011000$TTBL+
$$A$M2500$P85$S085$$R2$F2$*$F1$L
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$F3$P11$S110$$R1LLALBERTI: $F1Guiseppe Francesco Antonio. (1712-1768).$S0
$P10$F2$.$S150
$F3$S100$$R1LLLa Pirotechnia: o sia Trattato dei Fuochi d'Artificio.$+$L
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$$A$M2500$P85$S085$$R2$F2$*$F1 SOT. $"Claiming to have modernised and impro
of Frezier, Hanzelet, Henrion, Ozanam and Simienowicz".$s125$+$L
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$F3$P11$S110$$R1LLAMI(Y)OT: $F1Joseph Marie. (1718-1793).$S050$L
$P10$F2$.$S150
$F3$S100$$R1LLArt Militaires des Chinois ... Tr. en Francois par le P.Amic
Rev.& pub. par M.Deguignes.$+$L
$F1$P11$S110$$R2Didot: Paris 1772.$L
$$M$Txii$D01397$D0121P1s.$TTNAT$TBL147.c.10.$+
$$A$M2500$F3$P10$$R1$S100Me\moires concernant l'histoire, des sciences ... d
par les Missionaires de Pekin. (Vols. 7 & 8. Travels in China
and Chinese Fireworks.)$+$L
$F1$P11$S110$$R2Nyon: Paris 1782.$L
$$M$Txii$D01x$D01396$D01 P1s.TTNA0283075TTBL146.b.5-19$+
$$A$M2500$P85$S085$$R2$F2$*$F1 Amiot was one of many 18th. century proselyti
missionaries whose travels throughout Asia resulted in a great
quantity of information about the Orient being published in the
West. Much of the material in the above works comes from his
translation of the $F2Wu Pei Chih$F1 of 1628. A revised
translation of some of the Firework material was made a few years
earlier by another Jesuit missionary, P. d'INCARVILLE, part of
which appeared in ORVAL's $F2Manuel de l'Artificier$F1 published by
Jombert in 1757. REINAUD and FAVE also reprinted INCARVILLE's

ALBERTI: Guiseppe Francesco Antonio. (1712-1768).

La Pirotechnia: o sia Trattato dei Fuochi d'Artificio.

G.B.Recurti: Venezia MDCCXLIX (1749).
TP+vi+128+21Pls+ii(errori). 24cms. *N.40139502* *BL.8715.ff.38*

* SOT. "Claiming to have modernised and improved the inventions of Frezier, Hanzelet, Henrion, Ozanam and Simienowicz".

REF.- Du Pont. Berlin 3304. CP.

AMI(Y)OT: Joseph Marie. (1718-1793).

Art Militaires des Chinois ... Tr. en Francois par le P.Amiot ,.. Rev.& pub. par M.Deguignes.

Didot: Paris 1772.
xii+397-21Pls. *NA* *BL147.c.10*

Mémoires concernant l'histoire, des sciences ... des Chinois: par les Missionaires de Pekin. (Vols. 7 & 8. Travels in China and Chinese Fireworks.)

Nyon: Paris 1782.
xii+x+396+ Pls. *N.40283075* *BL146.b.5-19*

* Amiot was one of many 18th. century proselytising Jesuit missionaries whose travels throughout Asia resulted in a great quantity of information about the Orient being published in the West. Much of the material in the above works comes from his translation of the *Wu Pei Chih* of 1628. A revised translation of some of the Firework material was made a few years earlier by another Jesuit missionary, P. d'INCARVILLE, part of which appeared in ORVAL's *Manuel de l'Amateur* published by Jombert in 1757. REINAUD and FAVE also reprinted INCARVILLE's text in their *Histoire de l'Artillerie*. Although Amiot's work is concerned primarily with the Military aspects of Chinese pyrotechnics it is an important work in helping to understand the development of Fireworks in the Far East. A full description of Amiot's translation is given by PARTINGTON in his *History of Greek Fire and Gunpowder*(1960).

REF.- Backer.

ANDERSON: Robert. (1688-1696).

The Making of Rockets ... Experimentally and Mathematically Demonstrated.

Robert Morden: London 1696.
TP+xiv+48. *NA* *BL.534.c.22*

Facsimile ed. (1961?).
48p. illus. 27cms. *N.40304458* *BL*

* The title page adds that the book is in two parts,"The first containing the making of Rockets for the meanest capacity", the other, "to make Rockets by a Duplicate proportion to 1000 pound Weight or higher." The dedication is to "the Rt. Hon. Henry, Earl of Romney ... Master General of his Majesty's Ordnance ... ". The book goes into great detail concerning the manufacture of Rockets and is of a very practical nature. At the time of writing the author had had 25 years experience in "all sorts of great Artillery".

REF.- Brock. Wing A3108.

ANTONI(J): Domenico.

Trattato teorico, practico de Pirotecnia Civile.

Sambo: Trieste 1893.
xv+283+12FPls. 23cms. *NA* *BL*

* Although mentioned in Brock's (1949) bibliography I have not found it in either the NUC or BL catalogues. The Primo Catalogo Collettivo Delle Biblioteche Italiane (*Rome* 1967) give only one location, the Biblioteca Nationale in Firenze. There is also a copy in the Du Pont collection.

REF:- Du Pont. Brock. Pagliani.

ANTONIO: Carlos.

The Art of Making Fireworks as Displayed at Vauxhall.

J.Bushnell: London (c.1840).
Col.FPl+TP+24(-2). 19cms. *NA* *BL8716.aa.42*

* The title page informs us that ANTONIO was the "Author of several Treatise on the Art of Fire-Works". One has a feeling that he and ANGELO must either be the same person or he plagiarised. The coloured plate at the front has a strong family resemblance to that contained in ANGELO's work even to the boys shown dancing round a fire above which is suspended a hanging 'Guy'! Both books give details of making "Waterloo Crackers" and "Detonating Works" made with fulminate. A common pastime in the mid-19th century.

REF.-

ANGELO: T.

The Art of Making Fireworks by Plain and Easy Rules.

J.Bailey: London c.1825.
TP+FPl+28(-2). 17cms. *N.40324136* *BL1607/2116*

(3rd. ed.) J.Bailey: London c.1830.
CoverTP+28(-2). 17cms. *NS.40062348* *BLPO33015*

* The title page claims that Angelo was "formerly of the Woolwich Laboratory", and the list of contents includes, "directions for making Sky Rockets from 2oz. to 6lbs; Tourbillons, Balloons & Mortars, Roman Candles, Stars etc", also "Water Fireworks" and "Waterloo Crackers" (Snaps).

I buy US computer magazines, if I can get them, and drool over the prizes and products for TRS computers. Lately I saw quite a few bits and pieces appearing for Model 4. To start with October BYTE came a good description of Model 4. In there, there were a few bits of information, which are not available in the Tandy Manual.

Video.

Did you know that the video memory is not accessible to the Basic programs and, so, you cannot use POKE? I enclose (separately) a sheet showing memory maps for the Model 4.

Memory Expansion.

The same issue of the BYTE shows how to expand the memory from 64K to 128K - a very simple job. I enclose the sketch showing the back plate of Model 4. All that is required is to place eight Tandy 8040665 ICs and one Tandy 8075468 IC. This latter chip is referred to as PAL.

Actually the Tandy price for this expansion £99.95 plus the installation charge is very reasonable if one considers that DEC charges £428 + VAT for a similar expansion in the Rainbow.

The biggest problem with this Do-it-Yourself is getting hold of the PAL. Now LOGIX (PO Box 18982, Austin, TX 78760) can provide both the chips and the PAL for $89.95. I don't know what the shipping etc charges would be - maybe it is after all cheaper to let Tandy do it.

CPM.

I wonder how many people have heard that the CPM Plus for Model 4 will be available on the 30th February, 1984 (sic). At least so it says on the Tandy roneoed sheet advising their dealers of future releases. Well - this does not bode well for those of us who would like the CPM.

But one must not despair. CPM for Tandy machines is advertised in a big way in the good US of A. An improved version of the good 2.2 has been released for the Model 4. This is available for "immediate shipment" by Montezuma Micro (Redbird Airport, Hangar #18, PO Box 32027, Dallas, Texas 75232) for $199.95. This version is said to be capable of reading, writing and copying 20 different manufactures' disks formats and also includes MODEM7 among the usual CPM utilities.

Our friends at Molimerx also advertise that they have ample stocks of CPM 2.2 for Model 4 - only their version can read 22 different types of disks. Molimerx, very honestly, state that one can achieve transportability but not necessarily compatability. Molimerx sell their product for £171.35 (including VAT) but there is of course postage, packing and insurance on top of it.

The question is what to do now, as a big unknown is what will Tandy CPM Plus diskette contain? We know that it will not include the Basic, which is no great loss, as CBasic will be available at £69.95. Let's hope that the release date for CBasic is not also 30th February.

Tandy CPM is advertised at £79.95 but I hear a whisper that this may turn out to be £99.95. I think that, having waited so long, I will wait a bit longer and will finally decide on the value for money basis.

"But what about Model III ?" - did I hear someone ask ? Well if one wants CPM one could buy the BBC box for £399 (+VAT) and the Z80 Torch add-on for £750 (+VAT of course) and then wait about six months finally to finish with 64K machine capable of running DOS which is apparently compatible with CPM. But anyone too mean or too impatient can have CPM, 80x25 display and 124K. (See below)

Holmes Engineering, Inc. of 5175 Green Pine Drive (love these Yankee names - don't you?), Salt Lake City Utah 84107, advertise enhanced CPM, 80x24 display for $325. Additional options are 112K, 5MHZ Sprinter III, use of TRS DOS 6.1 and DOSPLUS. One can also have UCSD Pascal p. system. The board called VID-80 simply plugs in without any modifications, soldering or cutting.

Memory Merchant, 14668 Doolittle Drive, San Leandro, CA 94577, have Shuffleboard III, which plugs into the existing sockets with no other modifications. This board has 16K RAM, which turns Model III into 64K CPM computer. The cost of this board is $299 but 80x24 display appears to be extra.

Montezuma Micro (mentioned above) but this time located at PO Box 2169, Camp Verde (Lizard Flats), Arizona 86322, advertise Holmes VID-80 & 80x24 display for $249, Holmes CPM operating system for $120 or, if you wish, CPM conversion, 4MHZ speed up, 112K RAM, 80x24 video, clock/calendar with beeper, battery backup and CPM 2.2 disk with all manuals for $450.

In fact it may seem to some that TRS is an outmoded system but, it seems to me, that this outmoded system can have many options provided by the new generation micros. I don't know what the situation is with colour and sound but colour is bad for the eyes and, if one is married does one want the sound? (With apologies to the Female Member of our User Group).

Sound.

COMPUKIT of 16206D Hickory Knoll Houston, Texas 77059, advertise Model 4 sound upgrade for $29.95. Apart from stating that no soldering is required and the package includes instructions no details are given.

Words in Scripsit.

There was interest in that some time ago and the Newsletter contained a few programs which could count words in Scripsit files. I have never taken much interest in all that as my Proof-read program not only counts the words for me, but also tells me that it cannot recognise the word "recognise". But for those still interested 80MICRO (November) has a m/c program which, allegedly, does the job.

Printer ribbons.

According to some sources WD40 does refresh the faded ribbons - only Tandy maintain that this damages the head and that they will not repair the printer in such circumstances. I had this second hand so I cannot take any responsibility for the accuracy of this information.

Again in the dear, old US of A one can buy, for $3.95 only, RJ-100B applicator, which is said to be capable of re-vitalising fabric ribbons. The supplier is Design Colorants, PO BOX 612, Wayne, NJ 07470.

The most interesting product in this line is Mac Inker from Computer Friends, 100 N.W 86th Avenue, Portland, OR 97229. This is a small electric machine with a choice for any printer. This firm also supplies a lubricant ink which is said to be safe for dot matrix print heads. The cost is $54.95 and a brochure is available. I wonder if any firm in UK does import Mac Inker and, if not, why not ?

80MICRO.

Sometimes can be obtained at Smiths, London Victoria Station, on the way to Platform 1. The cost is £2.50.

Programs for Model 4.

ALPS, 23 Angus Road, Warren, New Jersey 07060 advertise Model 4 utilities to speed up the Model III mode to 4MHz, test memory up to 128K, clear memory routine and the use of sound (beep). They also have over 30 printer drivers to operate with SuperScripsit. (Cost $59 - Jaime Graham please note).

ANITEK Software Products, PO Box 361136, Melbourne, FL 32936 have now a word processing program for Model 4. It is called Le Script and works with TRSDOS 6.0. The text buffer is 90K (with the memory expansion), there are FORM LETTER and MAIL-MERGE capabilities and there are also over 60 different printer drivers provided with this program. These are claimed to perform proportional spacing and right margin justification.

DISKCOUNT DATA, 2701-C W. 15th St Suite 324, Plano, TX 75075 have the following programs for Model 4 running under CPM 2.2!

WordStar, Mailmerge, SpellStar, Starindex, InfoStar, ReportStar, DataStar, SuperSort and CalcStar.

Finally conversion of programs from Model III to Model 4!

Educational Micro Systems Inc, PO Box 471, Chester, New Jersey 07930 have a program called CONV3TO4. This program is said to insert the necessary spaces, re-calculate PRINT@ and TAB(), insert correct exponential symbols and flag and list unresolved line numbers. The program is also capable of removing REMs, comments, down arrows and unnecessary spaces - or inserting down arrows and indents between multiple functions.

ADEL Computer Mart, Dept 10 Box 195, Hartly, DE 19953 advertise a program called CONVERTR. This program eliminates unnecessary spaces, inserts all required spaces and lists the lines which contain the key words either not supported or handled differently by Model 4. There is an option to list the program and the error table on the printer.

Tandy are likely to release Superscripsit for Model 4 this month. I wonder whether an upgrade will be available for the existing owners?

TRSDOS 6.00.01 is now out and I have been given a copy by my friendly Tandy shop. The only trouble is they could not tell whether or what is the difference between the version 6.0 and 6.00.01! Does anyone know?

Idle gossip.

"What is happening to Tandy? They don't advertise computers! Why?" - questions like that have been asked in the past and it is true that Tandy do not advertise much. Such adverts, as do appear in the press, are mainly for printers or programs. I think I found the answer in the January issue of the Personal Computer World. One of the research firms released the list of the ten top personal computer manufacturers and their estimated sales' figures for 1983. These are below (in millions):

IBM	1,400
Apple	1,100
Radio Shack	1,100

It seems that Tandy can sell all the computers they produce without much advertising.

Interface Age (September) thus describes Model 4:

"...the Model 4 is a very powerful, flexible computer system. It can be used equally as well in a home as in a place of business. Either way, it is well worth the ...price".

Will the BBC model be still BBC computer in 1984 when the Acorn contract expires? And will there be an ITV computer? Those are the questions!

Anon.

```
 10 'A simple tutorial on left$ & right$ where names with initials
20 'need to be sorted in alpha. order.
30 READ A$
40 DATA B.C.Pain
50 A = LEN (A$)
60 LPRINT"The length of a$ = ";A
70 DU$ = LEFT$ (A$,1) :'------ du$ is used as a dummy string, to be reused.
80 LPRINT DU$
85 '
90 FOR C = 1 TO 8
100 DU$ = LEFT$ (A$,C)
110 LPRINT DU$ :'------ note how du$ builds up to the full length.
120 NEXT C
130 DU$ = RIGHT$ (A$,1)
140 LPRINT DU$
150 FOR C = 1 TO 8
160 DU$ = RIGHT$ (A$,C)
170 LPRINT DU$ :'------ note how du$ builds up to the full length.
180 NEXT C
185 '
190 FOR C = 1 TO 8
200 DU$ = RIGHT$ (A$,C)
210 IF LEFT$ (DU$,1) = "." THEN RS = C-1 : GOTO 250 : EXIT THE LOOP.
220 '------rs = length of the 'surname' without the preceding '.'
230 NEXT C
240 '
250 LS = A - RS :'------length of left string - the initials
255 DU$ = RIGHT$ (DU$,RS):'------strip off the unwanted '.'.
260 D$ = LEFT$ (A$,LS) :'------here another dummy string is used.
270 LPRINT"The surname is :-";DU$
280 LPRINT"The initials are :-";D$
```

Sample Printout

```
The length of a$ =  8
B
B
B.
B.C
B.C.
B.C.P
B.C.Pa
B.C.Pai
B.C.Pain
n
n
in
ain
Pain
.Pain
C.Pain
.C.Pain
B.C.Pain
The surname is :-Pain
The initials are :-B.C.
```

```
1 CLEAR 1000
2 'A$ = ORIGINAL NAME READ FROM FILE SUB-ROUTINE 1
3 'D1$ = TEMPORARY STRING FOR SURNAME SUB-ROUTINE 2
4 'D2$ = UNUSED
5 'D3$ = SURNAME IN ARRAY SUB-ROUTINE 2
6 'D4$ = INITIALS IN ARRAY SUB-ROUTINE 2
10 ' Simple tutorial using left$, right$ and ASC to sort names
20 ' in alpha. order.
30 ' read file in first.
40 FOR C = 1 TO 10 : READ A$(C) : NEXT C : '------sub-routine 1
50 '
60 DATA B.C.Pain,L.Knaggs,L.Shields,L.Heller,J.Christie,R.Mackie
70 DATA A.Young,K.Bedford,A.Donald,M.Gibbons
80 '
90 FOR C = 1 TO 10 : PRINT A$(C) : NEXT C :'--print out file.
100 '
110 GOSUB 1000 :'-------Divide a$ into initials & surnames.
111 '
120 LPRINTTAB(20);"Sample Printout"
130 LPRINTTAB(20);"================"
140 LPRINT" "
500 FOR C = 65 TO 90 :' ASCII for A to Z.
510       FOR CC = 1 TO 10 :'---length of file.
520       IF ASC (D3$(CC)) = C THEN LPRINT D4$(CC)+D3$(CC)
530       NEXT CC
540 NEXT C
590 FOR C = 1 TO 5 : LPRINT" " : NEXT C
598 LPRINTTAB(5);"Brian Pain"
599 END
1000 FOR C = 1 TO 10 :'------subroutine 2
1010       FOR CC = 1 TO 15  :'------length of name.
1011 '
1020       A = LEN (A$(C))
1021 '
1025       PRINT A;:'------debugging info.
1026 '
1030       D1$ = RIGHT$ (A$(C),CC)
```

```
1031 '
1035       PRINT D1$;:'------debugging info.
1040 IF LEFT$ (D1$,1) = "." THEN RS = CC-1:LS = A - RS : D3$(C)=RIGHT$(D1$,RS)
1041       IFLEFT$(D1$,1)="."THEN D4$(C) = LEFT$(A$(C),LS):GOTO1080
1051 '
1070      NEXT CC
1080 NEXT C
1085 PRINT:'------sub-routine 3
1090 FOR C = 1 TO 10 : PRINT D3$(C),D4$(C) : NEXT C :'------debugging info.
1091 '
1100 RETURN
```

Sample Printout
===============

```
K.Bedford
J.Christie
A.Donald
M.Gibbons
L.Heller
L.Knaggs
R.Mackie
B.C.Pain
L.Shields
A.Young
```

Brian Pain

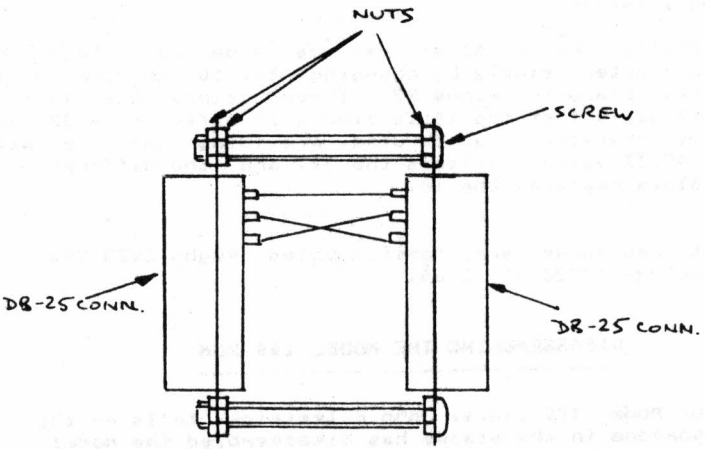
MAKING A NULL MODEM

If you are connecting one computer to another via their RS-232 serial ports, you need a device called a null modem. This is a cable with appropriate connectors, wired in such a way that each computer appears as a modem to the other computer. You can buy such a cable from Tandy or Inmac. I don't know how much Tandy charge, but Inmac charge around £20. With a couple of DB-25 connectors, a few pieces of wire, two screws and a few nuts you can easily build a null modem for under £5 and about 20 minutes work.

All you do is place the two connectors back to back, and link the pins between the connectors according to the following table:-

SIGNAL	PIN	PIN
GND	1	1
TD	2	2
RD	3	3
RTS	4	4
CTS	5	5
DSR	6	6
GND	7	7
CD	8	8
DTR	20	20

You then fix the two connectors together using the screws and nuts like this:-



If you want to be really posh, you could use studding and spacers, of course.

I used a male and female connector, as this enables me to connect my Model I or Model II to most other systems. By wiring the pins on a one-to-one basis, with connectors of the appropriate gender, you can easily make what is termed a gender-changer.

Leon Heller

Basic flash routine

Here's a solution to G. Brittain's request for a one line flasher routine in Basic (October '83 P.15). If X is the screen location (address in memory) then

```
POKE X, 32-10*(PEEK(X)=32)
```

will produce a flashing asterisk. By incorporating the line within a repetitive section of code, the speed of the flash can be adjusted.

If you're not au fait with boolean expressions (that's the code inside the brackets) then this is how it works. Assuming that you understand the statement POKE X, Y, then it can be seen that the section of code 32-10*(PEEK(X)=32) simply replaces Y.

The interpreter in effect says:-
IF PEEK(X)=32 THEN the arithmetical value inside the brackets evaluates to -1 (logical TRUE) ELSE the arithmetical value inside the brackets evaluates to 0 (logical FALSE). This certainly applies to Model 1, although I am not sure if the arithmetical values are identical for other models.

By simple substitution, TRUE will give 32-10*(-1) i.e. POKE X, 42 (42 being the ASCII value of '*'), whereas FALSE will give 32-10*(0) i.e. POKE X, 32 (32 being the ASCII value of a space). It can therefore be seen that each time the code is executed, the character in location X will toggle between a space and an asterisk.

Incidentally the routine can be made to flash any printable character simply by changing the 10 to the ASCII value of that character minus 32. Indeed since the routine works on the basis that the 10 is simply an offset from 32, any two printable characters can be used, providing the one with the smaller ASCII value replaces the 32, and the difference in the ASCII values replaces the 10.

Clive Wright, Red House Farm, Marston Doles, Rugby CV23 8SS.
Telephone Southam (0926 81) 3364.

DISASSEMBLING THE MODEL 100 ROM

One of our Model 100 users, John Kilpatrick, tells me that whereas someone in the States has disassembled the Model 100 ROM, and published several ROM routines in 80-Micro, these routines do not seem to work on his Model 100. It looks as though Tandy, besides using a different PCB for the UK machines, are also using different ROMs.

Although I have not got the time to try it out, and I have only got the use of a Model 100 for a few days anyway, here is a suggested technique for disassembling the Model 100 ROMs.

Using the following program on the Model 100:-

```
5 CLS
6 OPEN "COM:37E2D" FOR OUTPUT AS 1
10 FOR I=0 TO 1000
20 PRINT PEEK(I);
25 PRINT £1,PEEK(I)
30 NEXT I
```

dump the ROM contents out of the Model 100 into, say, a Model I, via a serial link between the two machines. Then save the dumped decimal ASCII values to a disk file. Now write a program for the Model I (in BASIC, or whatever) that converts this file to binary in RAM, and save the binary file to disk. This file can now be disassembled in the usual way.

Of course, a few of the 8085 op. codes are different from the Z80, so you will have to be a bit careful. If anyone would like to give this a go, feel free to ring me on (0908) 613004 to discuss any problems you might encounter.

Incidentally, this article was written on a Model 100, and uploaded to my Model I for tidying up and printing, using Scripsit.

Leon Heller

ELECTRIC PENCIL 2 AND PENCIL PLUS.

I bought my Model 1 as a retirement present to myself in 1980 with two objects in mind. First, inspired by Christopher Evans and "The Mighty Micro", I wanted to find out how computers work, and discover if I could to use one in my every day life. Secondly, I was conscious of the fact that for the first time since the War I should be without a secretary, and would have to type my own letters, keep copies and do my own filing. In other words, I should need to use it as a word processor. So I had lower case fitted and acquired a tape version of the Electric Pencil.

I went through the usual problems with casettes and the unreliability of the early version of Pencil, and finally decided to take the plunge, get disks and swop my Microline 80 for an Epson MX80F/T. Then in June 1982 I bought a Pencil 2.0 in the States, and have been using it ever since.

I should perhaps explain that I write about five letters a day, quite often to the same people, and occasional articles. I need to maintain an extensive data base of addresses, with supporting detail, and periodically to prepare and submit accounts. I can type quite fast but inacurately, and if I can do any thing wrong with the computer I will do it. So a Word Processor for me has to be simple and as nearly bomb-proof as possible. I do my routine letters on top quality Telex paper, which I slice with a photographic guillotine, which lives on my desk. Some letters I do on ordinary writing paper.I need good, though not necessarily superb, print quality. For this, the Microline, with its lack of descenders, was not good enough, but the Epson, in Emphasised Mode, is entirely adequate.

Pencil 2 in many respects is ideal for me - though for others with different requirements it might not be so good. I find it very simple to use; my daughter learned how to use it well enough to produce an address list in half an hour. It uses very little memory,so that it can take about 34 K of files. It has some handy features like a word count, which seems to be something that Scripsit users, for instance, have to go to great trouble to patch in to their system. I find that, when I am not using right margin justification, if I set the left margin to 9 and the line length to 62 I get in the print out precisely what I see on the screen, so that one can center titles etc by eye. This is as well, for unlike some word processors, Pencil has no centering command. Wrap around is automatic and positive. Cursor speed can be varied. Pressing (clear)"B"gives an instaneous return of the Cursor to the beginning of the file. (Clear)"N"takes it to the end of the file. "Clear" K followed by CLR clears all text; CAA clears all text after the Cursor, CAB all text before the Cursor. I find the CAA command very useful in correspondance, because I often have an earlier letter on file to the same Correspondent. By changing the date and moving the Cursor to a spot after the correspondent's name,typing of the address can be avoided. For all my main correspondents (such as my Bank

Manager!) I have a separate program which automatically activates Emphasised type, types my own address and telephone number at the head of the paper and the Correspondent's address.

Block moves are very easy. This can be handy for keeping address lists up to date, for there is no automatic sorting by fields. I use the "Search For" Command a great deal. In my Address list I insert Markers, such as AAA, AMA, BAA, ZMA. In the appropriate place.The "Search For" Command immediately places the cursor on one of these, and it takes no time to get to say "Robinson" by searching first for RMA. Of course it will also find "Robinson" directly - but there may be several Robinsons and I find it well worth the extra trouble to tag a data base in this way.

One of my interests is research into the Ageing process. I have constructed a data base which enables me to find Articles on the subject. By using "Search For"-(Clear)"V"- I can quickly see any references to a Company such as Biotech or a subject such as Genetic Engineering. When I get round to it I shall use Electric Pencil to index my collection of Gramophone Records. Perhaps a more formalised Data Base Management system would enable me to do it more easily and I would be able to enter the items at random, sorting afterwards, but I see no reason why Pencil should not do it completely adequately, with no restricting predefined "fields" to limit the information I put in about each record.

I do little Basic programming, but when necessary I do any editing with Pencil.

Pencil 2 as sold has one major snag - one cannot embed commands to the printer in the text. If one wants to change to Emphasised or Condensed type after starting to construct a pencil file, one must exit the program, go into Basic, give the appropriate command to the printer, and then hope that one can get back to Pencil without losing the program. Actually by typing PENCIL * on returning from DOS the former program is automatically returned to the screen, and the system works well. But it is laborious,and of course, one cannot vary types in the middle of a line.

Fortunately that problem has now been overcome by Pencil Plus - a program by Dan Robinson of 162 Higgins Way, Pacifica, California 94044 - which was published in the May 1983 number of 80 Micro. If you wish you can get a disk with the program and various samples to correspond with the Magazine article by sending $25 to him for his school funds, and I highly recommend it. With Pencil plus, one can not only change type styles, but also margins, justification, line spacing, all in mid text without exiting Pencil. Conditional hyphens are possible, which is a great advantage for right justified layouts. File merging and the insertion of "boilerplate" paragraphs is easy. Indeed the combination of Pencil2 and Pencil Plus results in a simple, reliable, idiot proof word processor, which suits my requirements admirably and enables one ot take full advantage of the facilities of a smart

printer.

I have recently been trying out "Zorlof", which is somewhat cheaper than Pencil. It has some desirable features that Pencil lacks -somewhat easier loading of files, no problem about embedding printer commands, a Zap-Processing function which enables one to edit machine code files by displaying the file in HEX-ASCII format, an audible "click" each time a key is depressed, which does seem to reduce the number of my typing errors. But it takes up much more memory, so that my main address data base will not fit in, and moving the cursor around or finding appropriate bits of a long file is much slower. Indeed I found it takes me much longer to write and print a document in Zorlof than in Pencil - though in fairness I must say that probably this is largely due to my own relative lack of experience in using it. I think, too, that its ability to deal with lines longer that 62 letters, and keep track of the position of tabs and colums so that one can see them on the screen before printing is superior to Pencil's. Indeed, if one were going to do reports on a wide printer, with many columns I think Pencil would be an unsatisfactory word processor, whereas one could certainly "get-by" with Zorlof. But me, I have gone back to Pencil, until I have to produce a document with columns or long lines.

Maxwell Stamp.

CPM 2.2 FOR MODEL 4

This has been widely advertised in 80-Micro and by Molimerx Ltd. It has the distinction of being the first implementation of CPM for the model 4 due to Tandy's delay with CPM Plus. The version is a standard version of CPM together with some extra goodies. Here are the highlights.

The RAM disk makes it extremely quick providing you have copied the files to it previously. This may not be practical or might involve a longer boot....near Model 16 proportions perhaps?

The interchange program looks good. I have experience of a similar program on the Osbourne and that was a boon. The Modem program seems to be a waste as there is one provided free with Trsdos 6.0.

To sum up.... If you need CPM desperately and are willing to pay the premium then this is for you.

CPM PLUS FOR ANOTHER MACHINE

The version I have access to comes in an IBM style box about 2/3 A4 size. It contains a user, programmer and systems guide in a three ring binder of matching grey colour. The documentation is well produced and to a generally high standard.

The minimum system required is 32k for non-banked system (e.g. Model 12) or 96k for a banked system (e.g. Model 4). Digital research say that it will take "a few hours" to implement the non banked system but "several weeks" to implement the banked system. I think they are being optimistic.

The principle behind the new version is not to increase program space but to increase the number of commands and to add disk caching. The latter is much better than a RAM disk for constant access to the disk. It is also transparent to the user.

New commands added to CPM together with a small revision on the old ones makes CPM easier to use than before. It also makes it more powerful. For instance device re-direction is possible with the PUT command. The line
PUT_print_output_TO_file_FRED
sends the printer output to a disc file called fred. This is an example of both the new ease of use (its understandable) and new features (device re-direction).
Some other new commands, features are:-

1. Help - Comprehensive and reasonably useful.
2. Date and Time Stamp - Useful for data files and different versions of programs.
3. Re-direction - Limited but fairly useful.
4. Editing of Input line - Allows you to delete, insert etc. if you have a banked version of CPM.
5. Recall of the last command - Only banked systems.
6. No more Control C for each floppy disk.

To sum up .... CPM 2.2 to CPM plus is similar to comparing Newdos+ to Newdos 80 version 2. Both work but I would prefer to use the latter.

Anon.II

FOR SALE

SINGLE TEAC DRIVE. 40 TRACK, SINGLE AND DOUBLE DENSITY, WITH CASE AND POWER SUPPLY. ALMOST UNUSED. £150 O.N.O.

'PHONE COPDOCK 454 EVENINGS AND WEEKENDS.

R. KENDALL,
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VIDEO GENIE + 32K EXPANSION BOX + TRS-80 BOOKS (VALUE £25 PLUS) + A FEW CASSETTES.

P.B. LAWS,
TEL: (0727) 59242 EXT. 3231 (OFFICE HOURS)
(0296) 668375 (EVENINGS)

Odds from Brian Pain
Eric Hartley can still supply the RS232 boards and lower case mods. His correct number is :- 0200 22880
The stock exchange rules are being put together; if interested please give me a ring in case I have missed an obvious point.
Leighton Davies has hooked the TRS VOX BOX to a tank, which does something on receipt of an instruction.
We now have some stepper motors, which are group property. Their first outing will be at the February workshop.

NATGUG NEWS

Volume 5 No. 8 February 1984

OFFICIAL JOURNAL OF THE

National TRS-80

& Genie Users

Group.

INFORMATION ON THE GROUP

Membership of the Group is by subscription to the Newsletter, which is published monthly. Membership details are obtainable from the Group Secretary. Membership of the Group is open to anyone with an interest in the TRS-80 range of microcomputers, and compatible systems such as the Video Genie.

Details of the Group accounts and the constitution of the Group are obtainable from the Secretary.

Members requiring assistance with problems related to the TRS-80/Video Genie may call the Secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops are arranged from time to time in various parts of the country.

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time. Sub-groups also exist for medical and educational users.

The Group runs 80-NET, a computerised bulletin board service that is available to all users of microcomputers.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are obtainable from the Secretary. The medical and educational sub-groups maintain their own libraries.

A membership list is obtainable on disk from the Secretary.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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EDITORIAL

Well, it looks like Sinclair have produced a decent system at last. I have never been all that keen on Sinclair's machines, although to give them their due, they represent excellent value for money and are very well designed. However, the new QL, even if it only does half what is claimed for it, is a very nice computer that will sell in enormous quantities. Brian and I were so impressed by the QL that we have formed IQLUG (pronounced EYE-KEW-LUG), an independent users' group for QL owners.

This is not to say that we will be abandoning NATGUG. We will be putting ourselves up for re-election at the forthcoming A.G.M. at the workshop later this month, and will, providing we are re-elected, continue to run NATGUG so long as there is a demand for its services.

However, with the possible exception of the Model 100, I do not feel that Tandy any longer produce any interesting machines. Nothing as interesting as the new QL, anyway. The last straw as far as I was concerned was the Model 2000. A nice machine, but just another I.B.M. PC clone, when you come down to it. The only other company doing anything interesting at the moment, apart from Sinclair, is Apple. Their new Macintosh, whilst expensive, is equally as innovative as the QL.

Many NATGUG members have ordered QLs, and have already joined IQLUG. It shows every sign of taking off in a big way, especially when Sinclair actually start shipping machines, instead of glossy advertising brochures!

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. If possible, send material in printed form.
2. Scripsit or Pencil disks/cassettes are acceptable.
3. Ensure your ribbon is in reasonable condition.
4. Printer output should be on A4 paper if possible.
5. If you send in hand-written material, write legibly.
6. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

LIBRARY INFORMATION

Model I: Leighton Davies, 185 Caerau Road, Caerau, Glamorgan. Tel: (0656) 738337

Model II: Jim Hutton, 25 High Street, Stroud, Glos. Tel: (045 36) 4423

PROBLEM SECTION

With reference to our telephone conversation on 5th February, concerning the output of sound through the aux plug of the level 2; the sort of tones we are talking about are say 1200Hz for about 5mS ($5x10^{-3}$ seconds). I realise that the duration is related to frequency but I am really looking for a programme which will allow me to change out-puted frequency/duration and the maths to allow me to make all relevent calculations.
I am at present using the Tandy Tape Editor Assembler and apart from not finding this very satisfactory am now looking for a Disc Editor Assembler, and I wonder if you have any comments on makes and sources.

As another completely separate point, when is the next fools guide to machine code in the workshop.

Ian Collett.

125 Mandeville Road,
Freezywater,
Enfield, Middx.
EN3 6SQ

(* Can anyone help Ian with his tone generation problem. I have seen programs for music generation via the cassette port, but the generation of arbitrary tones and durations is a little tricky. You could always use the 8253 circuit I described recently. This is probably the most accurate way to do it, if you are into hardware construction.

My favourite assembler is Microsoft's Macro-80, which you should be able to get from Tandy. They sell it as the disk Editor/Assembler package. It is intended for use by experienced programmers, so a better bet if you are a beginner is Zen, which is sold by Laurie Shields. Laurie can be contacted on (0246) 75568. Laurie is giving a session on Assembler for beginners at this month's workshop. LFH *)

I am looking for a patch to LEVEL II BASIC that is also compatable with the Aculab Floppy Tape.

I wish to place a patch in memory at 0F000h to enable me to use DEFFN statements within my programs. This area of memory is hardware protected in my Genie so it seems the logical place to put the patch.

My initial thoughts as to the method of implimenting the patch would be to lift the necessary code from one of the DOS's es but as I haven't got discs it is a bit difficult. Can anyone out there help?

KEN ROBINSON

65 School Drive,
Newton Longville.
Milton Keynes.
MK17 0DD
(0908) 75479

I cannot get very enthusiastic about "C" from what I have read in your articles - it appears to require almost a cryptogram mentality - one stroke and it will not work: but I suppose this is true of Assembly code! As far as I can recall, you have not as yet dealt with the 'bread and butter' aspects, entering data into memory (the equivalent of DB and DW), printing on various locations on the screen, asking for a character or words to be entered (CD 60H etc)- but I must re-read your articles with more attention.

Much appreciation to members, and particularly Mervyn Baker, for suggestions and help with my early problems of LDOS DD. My troubles only lasted a few days. The disk SOLE (Roy Soltoff) mentioned by Mervyn Baker is described on page 80 (April 1983) of Molimerx catalogue (£17.50 + VAT), so has evidently been available for some time.

W.T.COWHIG,
21, Priory Road
SALE, M33 2BS,
Cheshire

(* You are right about C being somewhat cryptic. Since I am still learning the language I tend to write C programs as clearly and straightforwardly as possible. If you really go to town on a C program it is easy to make it completely incomprehensible, even to the programmer who wrote it!

As you say, debugging C programs can be difficult. I use a process of "stepwise refinement" when writing in any language, and find that this works very well when writing in C. One writes the main function, which calls several subsidiary functions. The subsidiary functions are initially coded as dummy stubs:-

```
main(){
        cls();
        menu1();
        c = getkey();
        switch(c){
                case '1': fred1(); break;
                case '2': fred2();break;
                . . .
                default: break;
        }
fred1(){
        puts("FRED1 EXECUTED");
}
```

The subsidiary functions, fred1, fred2, etc. are then coded and debugged one by one, until a full working program results.

I find that most of the code I write in C works first time, but I occasionally encounter a bug that can take perhaps half a day to correct. It usually turns out to be something quite trivial. Other C users tell me that they have similar problems. When C becomes more widely used, I would think that debugging utilities will become available.

DB and DW are really irrelevant as far as C is concerned, as it is a high-level language. Printing on different parts of the screen is not part of the language; you usually have to write your own functions for this sort of thing. I use a function called prstring(x,y,s)to print a string at the point (x,y), and a function called getstr(x,y,l,s)to get input from the user into a string of length l, with the field length indicated by dashes, with all the usual editting features available. A modified version of the latter function allows integer and floating point input, also.

To really appreciate C you really have to sit down and use it, like any other language. LFH *)

After subscribing to the newsletter for some time and being just a silent reader here goes at my first attempt to see my name in print.

My system consists of a Model I with 2 x 35 track drives and an Epson MX-80 printer usually running TRSDOS 2.7DD. I plan to expand the system to incorporate an RS232 interface and a modem. This should happen quite soon since I am building the RS232 board and I have recently been in touch with a company launching a modem (Feb/March) which will work at 1200/1200, 300/300, 1200/75 and 75/1200 and will retail for approximately £100.00 (more details when available).

Now comes the point where someone reading this may be able to help me.

1) I run Model I PROFILE which is a very friendly package but when sorting it loses all its bonus points. A set of 500 records takes 60-90 minutes with the drives turning all the time. Does anybody have a solution that will save either me or my disc drives. I have the relevant details on the file storage format etc. but need some help in writing the software for a faster sort.

2) I am fed-up using cassette Scripsit (and cassettes in general), has anyone a copy of Scripsit of Super-Scripsit that they are willing to sell, note limited budget since most of the grant is spent!!!

3) One final point has anyone got into TRSDOS 2.7DD, I have several patches that I wish to place if only I knew where. The operating system is so tightly protected I can't even find the file name and SUPERZAP won't run under Double Density.

Thanks in advance for any help anyone can give me, and also to the regulars who keep the newsletter full of interesting and thought-provoking articles

Mike Meller,
174 Astonville Street,
Southfield ,
London SW18 5AG.
Tel: 01-874 2394

P.S. I have for sale EDTASM the Tandy Z80 Editor Assembler for Model I and Model III cassette. OFFERS ??

Sorry I have taken my time to answer but your second letter arrived soon after your first, before I had had time to properly assimulate all the info (I'm that slow!!) and then, when your second letter came, I was eager to have sorted the RS/modem problem and be able to report back when I wrote.

First thank you for all your trouble and the wealth of info and, to the RS/modem. Well not being very agile, not even agile enough to use a screw driver, it has taken me all this time to pluck up the courage to carry out the RS test you gave. I found that it was the RS which was the trouble but it took me even longer to even suggest, let alone persuade, that my helper went anywhere near electrics: a computer at that and, with a screw driver!!

You'll never guess what we found!! It was nothing more than that somehow the TERM switch was not making good contact. A quick flick to the printer position and back to the TERM position and I was back in business again. Even so, I am still far from happy with RS 232's and I only risked writing to say 'all sorted', only after I had checked it was still working and re-run a successful Test run again.

As regards the I/O board and the very kind synthesisor offer. Things have been happening this end which dictate that, for the moment, I can only say thanks for the info and offer and, 'Yes I would be delighted to try the synthesisor some time but not just now. Not until I have sorted what I am doing about my computer'.

No, I'm not giving up computers!! It's that, as I keep the databases for an international charity, the number one priority for me is a 5 megabyte Hard Disk. For some time, I have been corresponding with a retailer who thought he could persuade Cumana to adapt their Rodime drive for use with a Model I and sell it at 1400 to 1500, incl VAT and delivery. About a week ago, I got a letter from him to say that he thought he was never likly to persuade Cumana and the difficulties were greater than he had intially thought anyway. He went on to suggest that my best solution was to snap up one of the second-hand III's which were now coming on market and at very reasonable prices.

The outcome was that I am now pursuing a trade in deal with Blandford's for a IV and naturally, till I've sorted whether it's on or off, all else is in abeyance. After weighing it all up, going the whole hog and going to a IV, seemed a better all round and cost wise, solution than buying a second-hand III. Especially as Blandford's do trade in's and I know Leo Knaggs well.

Now that I have my communication link going again, I will, of course, be able to converse with Blandford's, during the discussion stage, thro' Leo's Bulletin Board. He's given me his parameters, I had his BB No (out NATGUG) and we've discussed it all on the phone. My helper asked the questions and I listened to the answers.

That reminds me, I must fix up my headset. I've had it for two months now and all it needs is screwing together and plugging in to my three way phone jack adapter. Then I will be able to listen in on phone conversations made on my behalf with no trouble.

Anyway, thanks once again for your help, particularly in sorting out my RS/modem and I'll be in touch when I know if it's to be the I and DD or the IV and a hard drive.

Mervyn Baker.

Herewith my renewed subscription. May I begin with a note of dissention? I seem to be the only member who doesn't like the new A5 format for the Newsletter, but I have always kept them in A4 ring binders for easy reference and am now at a loss as to what to do with them. Any suggestions?

I now have my DP2000 D/D disk from Gnomic up and running after many problems, the last of which was the power supply as mentioned by R.G.Grantham in the November issue. It was all worth while though, the benefits of disk operation being so great.

I am anxious to contact any TRS80/VG freaks in this area, possibly with a view to forming a sub-group. By the time this appears I will have moved to 6 Manor Cottages, Easton, Winchester, Hants. and can be contacted on 0962 56467 during the day.

Lastly, has anyone interfaced one of the old Diablo hard disks to a VG (or TRS80)? Any info. or documentation would be appreciated.

Bernard Mantell

57a Fraser Road,

Kingsworthy,

Winchester,

Hants.

Tel. 0962 56467

P.S. FOR SALE. An Audio Computers 32k in keyboard RAM extension.

Cost £46 for sale at £25. B.M.

FOR SALE
EPSON MX 80 III F/T, new, unused, manual, lead, spare ribbon. £265 +£3 p.p
A.Walbridge.(0308) 862241.

Further to my letter dated 4-11-83, I own a 48k Model III tape based system and I am looking for some particular software. I would be grateful if you could tell me if the following are available via the Model III library or, if not, if you could recommend a suitable source for these programs.

1). A patch for MIII tape scripsit to enable access to the various print commands of the Epson MX80 FT3 printer.
2). A renumber/merge program which will preferably renumber goto's, gosub's etc.
3). An editor/assembler program.

I am still very interested in information relating to the Educational Subgroup when it resumes.

I have a problem which someone may be able to help me with. My Model III has a 60Hz. clock and consequently does not run correctly on a 50 Hz. supply. Does anyone have a solution?

Gerry Joy.

862, Oldham Road,
Thornham,
Rochdale.
Lancs.
OL11 2BN

I have a "Video Genie System EG3003" computer with EG3013 expansion interface with Aerocomp Double Density board fitted. The expander board unfortunately has not got the chips fitted to supply a RS232 interface and I now wish to link my computer to Micronet 800 and Prestel, as well as being able to converse with other computer users via modems and British telecom network. I am ignorant of hardware matters although at one time I was professionally involved in software. I wonder if the Group can advise on the best way to link my machine to a modem, and what modem the group reccomends to meet my current requirements.

I can obtain a Video Genie version of the PCR - 81 RS232C interface manufactured by 3 - Line Computing, (indeed I have currently borrowed one with a option to buy,) but I am not sure if the use of this would interfere with the operation of the EXPANDER EG3013 and the LDOS operating system I use.

What software will I be able to use? Can I use the LDOS RS232 driver? Does the Group have any specialist software that I could obtain if so who from and how much?

If you have articles etc which would answer all these questions and would rather supply them than answer direct then please supply and charge to my access acount.

John Walton
Tel: (0438) 65714

(x I think the PCR-81 should work satisfactorily with the EG3013 and LDOS, but it might be best to give Frederick Brown a ring to see if there are any problems in store. You cannot use the LDOS RS-232 driver, but you should be able to patch the PCR-81 software into LDOS without too much trouble. Can anyone help with this?

Eric Hartley can supply an RS-232 kit for the Genie that should be compatible with LDOS. Give him a ring on (0208) 2280. LFHx)

SW LONDON GROUP - MEETINGS PROGRAMME

MARCH 6	PRINTERS
MARCH 15	INTERFACING AND CONTROL
APRIL 3	DBASE 2
APRIL 19	OPEN FORUM
MAY 1	MODEL II APPLICATIONS

Ron Everitt,
2A Lonsdown Lane North,
Ewell,
Surrey.

TANDY CTR80A CASSETTE RECORDER - PLAY BUTTON REPLACEMENT.

As commented on before in the newsletter, the play button on this recorder suffers from rapid wear in that it ultimately will not lock in the down position. Being faced with this problem and not being in easy reach of a repair centre it was decided to "have a go" at its replacement, a new button having been obtained from Tandy. These notes on its fitting are offered for those in the same position who feel competent for a bit of D.I.Y. !

1) With the recorder upside down and the keys towards you. Remove the base. (Three screws, one in battery compartment)
2) Note routing of the red battery lead and unsolder both red and black leads at the battery compartment end to free the base. (This is not essential but makes later work easier !)
3) Note routing to clear handle of the Grey/Whi/Yel/orange leads to LED & Mic. at PCB right front, remove the handle, and uncoil the leads to gain slack.
4) Uncoil the blue speaker leads.
5) Remove the chassis securing screws, two self tapping screws at chassis front, and two BA screws, one on motor platform and the other (under the black tape) through the PCB at top right.
6) Carefully remove complete chassis from case and place alongside correct way up, keys towards you.
7) Remove the circlips from each end of the bar on which the keys pivot.
8) Slacken off the two screws that hold the pivot bar support bracket at the Record button end.
9) Ease the pivot bar out of its bearing holes in the slackened and fixed brackets, and remove the two washers from the bar at left (record) button end.
10) Carefully slide the pivot bar to the right releasing the record button first, continue until the bar is clear of the play button.
11) Remove the u/s play button by gently pulling upwards, and replace with new.
12) Slide pivot bar back into original position and replace the two washers on left (Record) end.
13) Locate bar back into its bearing holes in both brackets and re-tighten the left bracket screws.
14) Refit the circlips to both ends of pivot bar and check that button operation is ok.
15) Whilst easily accessible, clean tape heads capstan and pinch wheel by approved methods !
16) Ease complete chassis back into case watching routing and possible fouling of leads (as in 3 above)
17) Refit the four chassis securing screws.
18) Refit handle with slot downwards over the stop pegs and ensure leads to LED & Mic. do not foul.
19) Coil the slack of the LED & Mic., and speaker leads back into their original positions.
20) Resolder the red and black battery leads and locate the red lead in its clips.
21) Refit the base (three screws) and ensure no leads are trapped.
22) Test recorder operation. (If you have a de-magnetiser use it on the heads first !)
23) Good Luck !

Ken Rogers, 8,The Crescent, Worlebury, Weston-S-Mare, BS22 9SR (0934 24070)

News about Xenix

For those not deep in to the latest technical jargon, Xenix is the name of the multi-user operating system developed by Microsoft but based (closely) on UNIX a fairly ancient but increasingly popular mini-computer operating system. Microsoft's claim to fame is in eliminating many bugs and producing code compact enough to run on the larger micro-computers such as Radio Shacks Motorola 68000 based Model 16.

Under Xenix on a model 16 with 512k memory (do not try smaller!), I have used Microsoft's Multiplan spreadsheet but not much else! There seems to be so much potential but the main problem is software or rather the lack of it although an integrated accounting system has just appeared and multi-use Scripsit and Profile are 'close'.

I have now had over six months experience of use of Xenix and performance issues aside, the system does provide an effective solution to the problem of sharing expensive resources such as printers and hard discs as well as avoiding unecessary duplication of software. The design concepts are good and the code appears very robust especially so given the complexity of Xenix versus that well known dog CP/M. However what is now lacking is knowledge and guidance on how to use it.

Once again Radio Shack have missed out on marketing the potential of this system. A typical IBM PC user will have spent a similar amount to a model 16 and typically will want a spread sheet and word processing. All of this is available on the Model 16 but Xenix provides a multi-user feature which will never appear on the PC with its current hardware although PC + will probably go the UNIX way. Xenix opens the door to a rich base of software although appreciation of this will be limited to the the true hacker rather than those who read the glossy literature! The Model 16 with its 1.2 megabyte floppies and the Xenix 'tar' routine provides a viable approach to backing up a 12 megabyte disc - not the ultimate but very useable. The IBM PC with its 360k floppy disc will take 4 times as many discs - possible but very much less acceptable.

Although the IBM's MS DOS 2.0 has some of the Xenix architecture, it does not have a 'System Manager' feature to control who does what with what! MS DOS allows free access across the system (Why restrict a single user system?). This approach while acceptable on a hobby machine is not so acceptable in a business environment if the machine is being used for serious applications.

However this was not meant to be a 'Why buy IBM' article but rather what are the great unanswered questions with Xenix - All answers to Leon please.

1) Where is the integrated software that Microsoft promised - I think it has all gone down the MSDOS hole!

2) Where does the LPRINT & LLIST go to from mbasic before it reaches the line printer spooler (Not until an END statement however). There is an improvement if you print to a file and then cat file!lpr& but why is this necessary?

3) Why is there a 256k process limit ? Radio Shack says config will alter this but neither config nor its associated files are on my development system. Does any one out there know how to use config or where it is?.

4) Why is there such a small limit on multiplan memory allocation - is it beacuse of 3?

5) Microsoft have written both Xenix & Multiplan but the Xenix I/O redirection does not work within multiplan - Tough for those users with a large number of linked multiplan sheets. No batch runs as promised??

6) Why does the mbasic interpreter run at the same speed as the model 2 except for disc access speed which is truly amazing!

7) Is there ever going to be a Microsoft mbasic compiler. Bad vibes on this from Tandy UK. In desparation (because I do usually insist on integrated software) I shall try out the interesting BASTOC utility which translates BASIC source code to C source code. BASTOC can not cope with machine specific instructions such as PRINT @ and CLS. Neither will it cope with ON ERROR. However it will allow C modules to be linked to emulate these functions. Has any one got there yet with the model 16? If so there must a good market for a compiler that matches all of the mbasic facilities.

8) Why have Tandy not yet supplied any terminal emulation programs for the model 2/12/3 range to allow their use as full screen terminals with Xenix ie. can be used with products such as multiplan. However there is one available from OPTRONICS, 50 Holly Road, Twickenham, London , (01 - 892 8455).

9) What exactly has Bob Snapp done with Xenix. If anybody can then he will actually make it all happen - news?

Now for a change of subject - Model 2 Scripsit - Much matured!

Radio Shack have not produced a lot of good software (although Model 2/12 TRSDOS was a brave attempt to rid the world of that evil CP/M) but Scripsit is one of their best attempts. As a part programmer I admire the boldness of moving away from the 'In memory' edit an ASCII file approach as with Wordstar, PeachText, Electric Pencil etc.

There were three major innovations in terms of a low cost micro based system:-

1) The visual what you see is what you print approach with a true page based presentation.

2) An internal filing system which provided a decent interface to document storage/retrieval.

3) One of the first useable print spoolers - useable because you had to spool so there was only one approach to learn. Unlike almost all the other systems there is no need to print an additional file to disc although the hard disc version has moved away from this approach but for a good reason (On the hard disc there should be plenty of disc space, transfer is fast and you can now edit the document in background print).

Most of the other products use the operating systems features for the filing interface ie. each document is a system file. In Scripsit everything is in DOCUMENT/CTL and ony Scripsit (and fortunately now SCRIPFIX) know where anything is. The first approach is simple but the poor old user has to be part systems programmer. With Scripsit the filing interface is much more suitable to the secretary until things go wrong!

There is no doubt that the early Model 2 Scripsits were flaky but as from version 2.1 the software has now been stable for some time. However because of the amount of disc use, the hardware needs to be absolutely ok. It has been said that Radio Shack used Scripsit as a quality control check program!

In recent times two other software packages have appeared:-

1) Backup utilities such as RACET's FASTBACK which will back up a Scripsit disc in under a minute although as from 4.2 TRSDOS Radio Shack have gone a similar way.

2) Document recovery software such as SCRIPFIX.

The most encouraging feature is that Radio Shack have kept on extending Scripsit through all their new machines and with added features and (this is a very big and) it works with all their printers.:-

Spelling check
Plotter interface - a truly amazing way to produce overhead projector slides on the RS plotter - Try using each page for different pen colour overlays - The possibilities are infinite.
Boiler plate and column manipulation - touches of visicalc in the midst of word processing.

(* In my opinion CP/M is robust enough, in that there are no real buss in it. It is a "user-hostile" and primitive operating system, however.

The fact that BASIC on the Model 16 under XENIX runs at the same speed as Model II BASIC implies that the XENIX BASIC is the Model II BASIC, running as a task on the Z80. However, a recent statement from Tandy in BYTE magazine implied that the XENIX BASIC was different! I really do not know who to believe. UNIX, from which XENIX was derived, does not have a proper BASIC, just a rather primitive version of the language. One really should use C with XENIX, anyway.

Disk access on the Model 16 under XENIX is very fast probably because the Z80 with its 64K RAM is being used for I/O, with DMA between the Z80 and the 68000 RAM. Can anyone confirm this? LFH *)

FOR SALE: Model I Level II Keyboard unit with 48K internal memory, lower case conversion and lots of cassette software. Offers around #200.

Also Aculab Floppy Tape unit with wafers and special software. Offers around #50.

Ernest Bebbington 01-263 6760

ALPHAMETIC PROBLEMS

From time to time, some of the computing publications have a puzzle section which includes a numerical puzzle often called an alphametic. Alphametics consist of a numerical calculation, such as the addition of two numbers to produce their sum, with the digits replaced by letters of the alphabet forming words in such a way that a unique solution results, and the words convey something meaningful. A typical example is TWO + TWO = FOUR.

An interesting problem is to write a computer program to solve alphametics.

Listed below are some problems I have come across over the years. More years ago than I care to remember I used to work for EELM Computers Ltd., now ICL, hence the references to KDF9, LEO 326 and System 4. It is fairly easy to use a 'brute force and ignorance' approach, but a much more interesting technique would be a simulation of the way a human being solves such puzzles. I am not sure if anyone has actually succeeded in simulating human behaviour with respect to these problems, but it might be fun to try!

```
    CROSS          LEO326          SATIRE
+   ROADS        +   KDP10        -  LIBEL
  DANGER             KDF9            BBC3
                 +   KDF6
                   EE-LEO

    EE-L-M         SEND            TWO
+   OFFERS       +  MORE         +  TWO
  SYSTEM4          MONEY           FOUR
                                   given W = 2

    LYNDON         KDN2
x       B          KDF9            FLOG
  JOHNSON          KDF6          x     U
                 +  KDP10          GOLF
                   CAREER
```

Leon Heller

MODEL 2000 AIMED AT IBM MICRO USER

As reported by Leon last month Tandy has unveiled its Model 2000 high-speed 16-bit machine. This was at the Comdex/Fall '83 show. According to the December 5th edition of US publication ComputerWorld "...it is not compatible with IBM microcomputers but can run many of the same programs written for MS-DOS." CW went on to say that it is positioned between the entry-level Model 4 and the Model 12/16 machines and quoted a price of $2,700 for a basic 2000 system with 128k RAM and two 5 1/4 inch floppies totalling 1.4Mbyte. A 2000HD system with a single floppy, 256k RAM and built-in 10Mbyte hard disc and controller costs $4,250. Both systems can include either a 12in. high-res. monochrome or 14in. high-res. colour monitors at $249 or $799 respectively.

Adrian J Morant, Edaware. (01 952 7991)

INTERFACING STEPPER MOTORS TO THE MODEL I

As the first step (sorry about that) towards controlling the Tandy Armatron robot arm by the Model I, I have interfaced a single stepper motor to my system.

The motor I am using is an Astrosyn 23BB-H052, which is a low-cost (£14 or so) 12 volt press construction type motor, using a permanent magnet, and giving 7.5 degrees rotation per step. It is very similar to the motors used in 5 1/4" disk drives.

The motor is a 4-phase type, with four windings, which have to be pulsed in sequence, a pair at a time. There are more complex energisation techniques which give more torque and speed, but this method results in a very simple circuit. The energising pulses may easily be derived using software, but I chose to use a special driver chip, the SDB-520, also obtainable from Astrosyn for about £3. This chip is very flexible, and can be used for driving virtually any type of stepper motor, by appropriate pin connections.

The SDB-520 only requires two inputs: pulsing the Cu input drives the motor clockwise if Cd is held low, and vice-versa.

The two inputs may be driven from a simple output port; I used a 74LS175 quad latch. You could even use the printer port. If you drive the SDB-520 directly from the latch output, you will not be able to have the motor all that far from the computer since TTL does not like driving long lines, and it is not really advisable to have long leads going to the motor - they take quite a lot of current. I used RS-422 driver and receiver chips connected by twisted pairs, which, in theory, would work up to about 10,000 metres or so. Two meters is about what I am using.

The software is quite trivial and some simple test programs follow, that should serve as a starting point if any of you decide to have a dabble.

```
10 '              * * * STEPPER1/BAS * * *
20 '
30 'SINGLE STEP CW OR CCW BY PRESSING LEFT AND RIGHT ARROW
KEYS
40 '
50 CLS
60 K$=INKEY$:IF K$="" THEN 60
70 V=ASC(K$)
80 PRINT@ 32,V
90 IF V=8 THEN GOSUB 120
100 IF V=9 THEN GOSUB 130
110 GOTO 60
120 OUT 0,0:OUT 0,1:OUT 0,0:RETURN
```

```
130 OUT 0,0:OUT 0,2:OUT 0,0:RETURN
```

```
10 '                          * * * STEPPER2/BAS * * *
20 '
30 'ACCELERATE STEPPER MOTOR UP TO MAXIMUM SPEED
40 '
50 N=20
60 OUT 0,0
80 OUT 0,1
90 GOSUB 120
100 N=N-1
110 GOTO 60
120 FOR I=1 TO N:NEXT I:RETURN
```

```
10 '                          * * * STEPPER3/BAS * * *
20 '
30 'USE LEFT AND RIGHT ARROW KEYS TO CONTINUOUSLY ROTATE
40 'STEPPER CW OR CCW. ANY OTHER KEY STOPS ROTATION.
50 '
60 CLS
70 K$=INKEY$:IF K$="" THEN 70
80 V=ASC(K$)
90 IF V=9 THEN PRINT@ 32," CCW" ELSE IF V=8 PRINT@ 32,"
CW" ELSE PRINT@ 32,"STOP"
100 IF V=8 THEN 110 ELSE 130
110 OUT 0,0:OUT 0,2
120 K$=INKEY$:IF K$="" THEN 110 ELSE 80
130 IF V=9 THEN 140 ELSE 70
140 OUT 0,0:OUT 0,1
150 K$=INKEY$:IF K$="" THEN 140 ELSE 80
160 GOTO 70
```

We hope to be able to loan a single motor and interface hardware to members. You will have to provide your own 5V and 12V power supply, however.

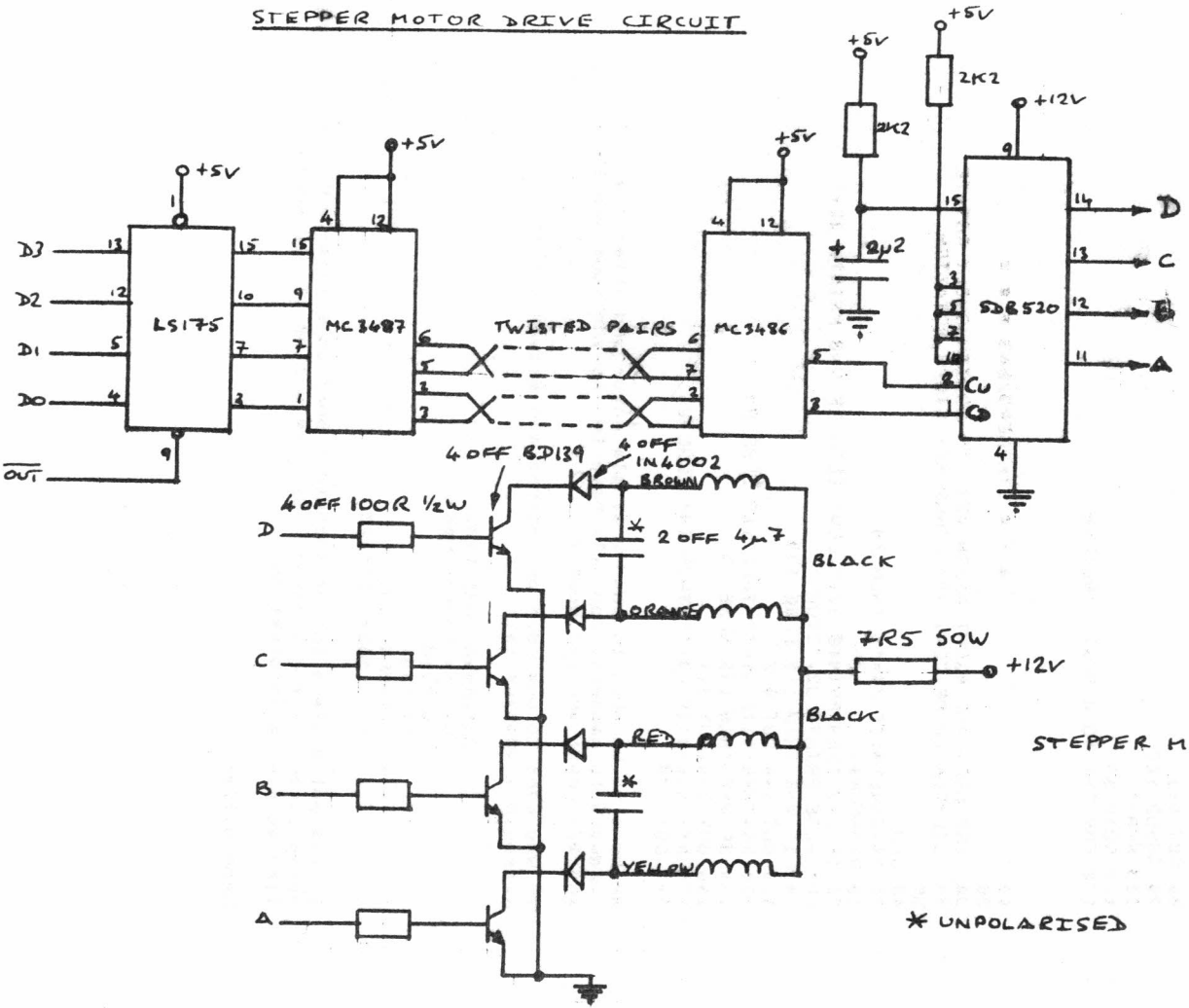
If you want to buy your own motors and driver chips, Astrosyn's address is:-

Astrosyn (UK) Ltd.,
The Old Courthouse,
New Road,
Chatham,
Kent ME4 4QJ.
Tel: (0634) 815175

I have got quite a lot of technical bumf on stepper motors, drive circuitry and software. Give me a ring if you would like some more information.

Leon Heller

STEPPER MOTOR DRIVE CIRCUIT



A SIMPLE 68000 PROGRAM

Following on from the description of the 68000 architecture in the December issue, here is a simple 68000 program.

```
      A68K  1.9  11/08/82 -- Run on ??/??/??
      00004000          PROGRAM EQU     $4000
      00006000          DATA    EQU     $6000
                        *
004000                          ORG     PROGRAM
004000  3039 00006000           MOVE.W  NUM1,D0         *GET FIRST NUMBER
004006  3239 00006004           MOVE.W  NUM2,D1         *GET SECOND NUMBER
00400C  D240                    ADD.W   D0,D1           *ADD NUMBERS
00400E  33C1 00006008           MOVE.W  D1,SUM          *SAVE SUM
004014  4E41                    TRAP    £1              *RETURN TO MONITOR
                        *
006000                          ORG     DATA
006000  00006000        NUM1:   DC.L                    *STORAGE FOR
                                                        *NUMBER 1
006004  00006004        NUM2:   DC.L                    *STORAGE FOR
                                                        *NUMBER 2
006008  00006008        SUM:    DC.L                    *STORAGE FOR
                                                        *SUM
                        *
    0 Errors detected
                                END
```

The program takes two 16-bit numbers from locations NUM1 and NUM2, places them in registers D0 and D1, and then adds register D0 to register D1, placing the sum in D1. The contents of D1 are then saved in location SUM. It is assumed that before running the program, NUM1 and NUM2 are loaded with the two values to be added. The TRAP instruction initiates a form of software interrupt which is vectored through location $84. Such a vector would normally be provided by a monitor program, and the TRAP instruction would result in a return to the monitor, enabling the contents of SUM to be examined.

68000 assembly language format is considerably different from that used for the Z80. Hex values are prefixed by a dollar symbol, and the current value of the program counter is represented by an asterisk. An asterisk also indicates that any text following it is to be disregarded by the assembler; such as comments. A hash preceding a symbol indicates that direct addressing is ocurring, that is,

```
      ADD £$1000,D0
```

means that D0 is to be loaded with $1000 (1000 hex).

```
      ADD $1000,D0
```

means that the CONTENTS of location $1000 are to be added to D0.

Another difference is that all movements of data are from left to right, the opposite to Z80 assembly language.

Since the 68000 can deal with bytes, words and long words, it is advisable to indicate the size of the data object as in the DC.L statements in the program. They reserve space for 32-bit quantities. For some reason the

assembler I am using does not like DC.W, which would be more appropriate in this case. MOVE.W indicates that the registers are to be loaded with 16-bit quantities. In fact, the assembler defaults to 16 bits if the size is not indicated, but it is good programming practice always to indicate the size.

We'll look at a more complex program in the next issue.

Leon Heller

MAGAZINE LIBRARY

Last August I described how Natgug was forming the nucleus of a magazine library by acquiring some early 80-Micro (or, as it was known then, 80-Microcomputing) magazines. Elsewhere in this issue should be details of the library service, here I just wish to say

PLEASE HELP US TO HELP OTHERS

In that article we asked for any spare copies of computer magazines that members might have - and only one man responded! OK, many of you very understandably wish to hang on to your own copies, but surely, with all this talk of defection to the IBM or the Beeb, somebody can help us? !

It would be nice to build up a spare set of 80-Micro's, but is more important at the moment to acquire copies of March 81, April 81, September 81, and January 1982, these being the gaps in our collection.

We would also be grateful for Byte issues between September 78 and December 81, Creative Computing, Computronics etc. Any contributions (how about 80 Micro's Encyclopaedia?) will be gratefully received and acknowledged on behalf of Natgug and it's members. If postage or transport is a problem, give me a ring and I may be able to arrange collection via our transport network. During the day my number is 0202 671122 (8.30am - 5.30pm, usually lunch time as well), and in the evening or weekend you can leave a message on 0202 423864 (a courting man doesn't stay at home) You could always bring your donations along to one of the many workshops that Brian is arranging this year. Please don't worry about the appearance of your old issues - it is the inside that we want, not the cover!

Thanking you in anticipation,

David Washford, 1 Alexandra Road, Bournemouth, BH6 5JA.

FOR SALE
Microline 80 printer-recently overhauled-£ sign spare ribbons. £120.00 O.N.O. Eric Brandes
46 Field Way Chalfont St Peter SL9 9SH Tel (0753) 882982

MAGAZINE LIBRARY

At last - the main Natgug Magazine Index is available from the Secretary. It covers only one magazine, 80-Micro, from January 1980 through to December 1983 with only a few omissions where some pages were removed from some 1981 issues - see appeal elsewhere.

The Index is available in hardcopy form, for 1.00 inc postage. Alternatively, thanks to Roy Hughes from Earlsfield, you can have a 61 granule text file and a 4 granule Basic interrogation program if you supply a single density formatted disk and 50p to cover postage. Roy also kindly donated some magazines, including some early copies of Byte and Creative Computing which should be on the very next Index release.

Photocopies of articles can be obtained from David Washford, 1 Alexandra Rd., Bournemouth, BH6 5JA. The Index shows the number of pages occupied by each article, and a remittance of 7p per page, plus postage, should accompany all requests. As mentioned in August, efforts have been made to catalogue all subsequent corrections or amendments to articles, and - where and when applicable - these will be included.

David Washford

SUN, SAND, AND MICROCOMPUTERS.....

If you are over 26, and have a few years experience programming microcomputers (CPM, BASIC, DBASE 2, spreadsheets) you can join Dr Calogero's team in Jamaica, working on Government applications. Depart in a couple of weeks. Work in Kingston for at least 6 months (up to 12 months), programming TRS 80, Kaypro, Apple, Epson, etc. . Earn and save 1000 pounds per month worth of fees while all your expenses are paid locally.

Interested ? Phone or write to :

Dr V. Calogero, 44 Alma Square, London NW8

Tel. 286-6289 or 286-6580,

not later than 3rd March 1984

@SCRIPTSIT

Futher to the recent correspondence regarding word counting in cassette Scripsit. I enclose a disassembly of the necessary mods to the Aculab version of Scripsit - @Scripsit. It may also interest those using @Scripsit that the warm start address is 25476. This should return you to Scripsit with the text intact.

The patch is placed into a buffer at 7060H and moved into high memory for running with the code at 7050H. Others may find it necessary to poke the mods in after @LOADing @Scripsit then saving the mod'ed version before running it. I have found that the Monitor programs if loaded from Aculab interfere with @Scripsit.

I hope other members of the diminishing band of Aculab users find the patch useful.

Anon.

```
4700  C35070    CPo    JP    7050H
4703  ED53D66E  mSVn   LD    (6ED6H),DE


5D76  CDD34E    MSN    CALL  4ED3H
5D79  C360F0    C`p    JP    0F060H
5D7C  C5        E      PUSH  BC


7050  216070    !`p    LD    HL,7060H
7053  1160F0     `p    LD    DE,0F060H
7056  017000     p     LD    BC,0070H
7059  EDB0      m0     LDIR
705B  C35748    CWH    JP    4857H
705E  00               NOP
705F  00               NOP
7060  3A456F    :Eo    LD    A,(6F45H)
7063  FE5A      ~Z     CP    5AH
7065  C26C63    B1c    JP    NZ,636CH
7068  C5        E      PUSH  BC
7069  010000           LD    BC,0000H
706C  2A065E    * ^    LD    HL,(5E06H)
706F  7E        ~      LD    A,(HL)
7070  FE20      ~      CP    20H
7072  2820      (      JR    Z,7094H
7074  FE8D      ~      CP    8DH
7076  281C      (      JR    Z,7094H
7078  FE3E      ~>     CP    3EH
707A  2011               JR    NZ,708DH
707C  1807               JR    7085H
707E  00               NOP
707F  00               NOP
7080  2B        +      DEC   HL
```

```
7081  FF        ▮     RST   38H
7082  FF        ▮     RST   38H
7083  FF        ▮     RST   38H
7084  FF        ▮     RST   38H
7085  2B        +     DEC   HL
7086  7E        ~     LD    A,(HL)
7087  23        £     INC   HL
7088  CB7F      ◄▮    BIT   7,A
708A  2015            JR    NZ,70A1H
708C  7E        ~     LD    A,(HL)
708D  FE00      ~     CP    00H
708F  2818      (     JR    Z,70A9H
7091  23        £     INC   HL
7092  18DB      [     JR    706FH
7094  03              INC   BC
7095  23        £     INC   HL
7096  7E        ~     LD    A,(HL)
7097  FE20      ~     CP    20H
7099  28FA      (z    JR    Z,7095H
709B  FE8D      ~     CP    8DH
709D  28F6      (v    JR    Z,7095H
709F  18D7      W     JR    7078H
70A1  23        £     INC   HL
70A2  7E        ~     LD    A,(HL)
70A3  FE8D      ~     CP    8DH
      ----
70A5  20FA        z   JR    NZ,70A1H
70A7  18EC        l   JR    7095H
70A9  ED43D86E  mCXn  LD    (6ED8H),BC
70AD  C1        A     POP   BC
70AE  21B4F0    !4p   LD    HL,0F0B4H
70B1  C3C25D    CB]   JP    5DC2H
70B4  0B              DEC   BC
70B5  57        W     LD    D,A
70B6  6F        o     LD    L,A
70B7  72        r     LD    (HL),D
70B8  64        d     LD    H,H
70B9  2063        c   JR    NZ,711EH
70BB  6F        o     LD    L,A
70BC  75        u     LD    (HL),L
70BD  6E        n     LD    L,(HL)
70BE  74        t     LD    (HL),H
70BF  3A0000    :     LD    A,(0000H)
70C2  00              NOP
70C3  00              NOP
70C4  00              NOP
70C5  00              NOP
70C6  00              NOP
```

ODDMENTS

(Model 4 and other bits of information cribbed from the magazines)

Model 4 - cleaning

In December NATGUG someone wanted to know how to clean this machine. I can understand the problem. The grey and black machines were nice and smooth and very easy to maintain. Model 4 has a rough surface and the dirt is difficult to dislodge. There are however two firms (as far as I know) which can supply the CRT terminal cleaning kits. They are Inmac and Willis. After my experience with Inmac when, as a result of my order for 12 pads of Cobol programming paper, they not only sent me 12 steel programming rulers but then they were dunning me for some £60 though I had returned them straight away and, in the end, I had to write to the Trading Standards Officer to sort them out (which he did), I stopped dealing with them. Willis (Freepost, Bishop's Stortford, Herts CM23 1BR) provide a very efficient and quick service. The CRT cleaning kit is not cheap but it works. The complete set (cat No CCL 214) which contains 3 aerosol terminal cleaners and 50 lint free

cloths (400mm x 400 mm) cost me £23.42. The alternatives is CCL 114 (Terminal cleaner - pack of three cans) and CCL121 (100 lint free cloths 100mm x 100mm, which is big enough). Costs are £15.92 and£ 5.04 respectively. In addition there is also CCL115 (3 cans of dust remover) - price £9.99.

Superscripsit.

Although this is a very nice word-processor there are some dangers in it. There is no getting out of the program without using the "Q" command. If by some chance a loaded text does get distorted in the memory, whilst being worked upon, this text has to be written to the disk. Removing the data diskette and re-booting will make the file unreadable.

Lately, after using Superscripsit for almost two years, I started destroying my files through sheer carelessness such as leaving write-protect tab on the master disk, forgetting to close the drive and so on. Actually the program is very tolerant and lets one recover from such mistakes if one only takes a time to look what is wrong.

Tandy.

After a period of little activity in the new product line Tandy new (?) models start appearing like the proverbial mushrooms after rain. The Birmingham show saw the unveiling of the Model 16B, should have seen Model 4P, Practical Computing just published a review of 64K Colour Computer (slightly jaundiced as is their custom as far as Tandy products are concerned) and Model 2000 is promised for sometime this year.

It is nice to see the old company on the move again. Not so good news is that Tandy went for the software protection racket. All software for Model 4 will be provided on two diskettes which cannot be backed up. I had a look at their Nominal Ledger program and the only thing, which stopped me from buying it, is the inability to backup the program disk. It is all very well to say that "if the disk goes wrong you can send it to Headquarters where it will be re-recorded without charge" but this could be an awful nuisance. I remember the occasion when I did send my Cobol diskette to have it patched. Four or five weeks later, and after several telephone calls, I got it back. No doubt it has been patched but the DECLARATIVES still won't compile.

I am a bit old-fashioned and cautious by nature so I hold well over 100 disks and looking quickly through them I found some seven or eight copies of Superscripsit - not counting the master diskettes. As far as the Nominal Ledger is concerned the question is, what happens if both of our program diskettes develop faults at once? Does one have to wait - keeping accounts manually - for some four or so weeks? Furthermore if I remember the manual the program disk also contains the transaction file in two disk drive system. A bit dangerous I would have thought.

At the present my Taranto Associates integrated accounts are liveable with - after I have written some additional modules to display accounts' balances or transactions on any account. Once the CPM+ will appear I will look for some unprotected accountancy programs.

Passwords.

I dislike passwords as much as I dislike protected programs. I am happy to say therefore that my SU+ has successfully removed all the passwords from TRSDOS 6.00 and 6.00.1. For those not having SU+ and disliking the passwords as much as I do below is the method of removing passwords on the TRSDOS 6 diskettes, working of course on a copy of your master diskette!

1. At TRSDOS READY type DEBUG (ON,EXT) <ENTER>. Press <BREAK>
2. Type F6000,7800,00 <ENTER>
3. Type 0,14,0,R,6000,17 <ENTER> (This loads the directory on track 14H into the memory and displays memory starting at 6000H.
4. Using ; increment the memory until 6200H is displayed. This should display BOOT SYS6, MEMDISK, REPAIR, COM, TAPE100, LOG.
5. The line on which the ASCII file name appears represents the start of the directory entry. The first byte of the line, which may be 15 or 16 defines the protection level. Full access is 10H for utilities, 58H for System programs and 18H for invisible files.
6. To un-protect Memdisk type E6240 and press the space bar then type 10 <ENTER>.
7. Using ; and E commands un-protect any utilities you wish. All these changes occur in the memory.
8. Type 0,14,0,*,6000,17 to re-write the disk directory.
9. Type O <ENTER> and turn off the DEBUG.

(From 80MICRO Dec 83)

Speed-up in Model III mode.

POKE 16912, 104 - to speed up
POKE 16912, 40 - to slow down.

Program listing below, when assembled toggles speed on and off from DOS READY:

```
00100           ORG     0FF00H
00110           LD      HL,(16912)
00120           LD      A,(16912)
00130           CP      104
00140           JP      Z,LP1
00150           LD      (HL),104
00160           JP      LP2
00170   LP1     LD      (HL),40
00180   LP2     JP      402DH
00190           END     0FF00H
```

This must be a simple program as, even I, seem to understand what it is doing.
(Once more courtesy 80 MICRO)

I have tried the BASIC Poke trick and it works. One can see straight away the increased speed of the blinking cursor. But having said that I notice that some of my programs crash when run at the at the higher speed. These are normally the programs, which do a lot of the I/O to random files. I wonder if, in the Model 4 operations, the clock is slowed down when reading or writing the disk?

Programs.

As no doubt most readers know Tandy has now enhanced Visicalc, Multiplan and the accounts suite for Model 4. These come in the usual brown covers similar to Scripsit, Cobol or Model 4 manuals. In addition I have seen two smaller white folders - one of which is a smaller version of Visicalc.

80MICRO reviewed in December "Monty plays scrabble" for Model III - not available in UK, The Statistician (Models I, II and III) for business forecasting or statistical analysis supplied by Quant Systems, Box 628, Charleston, SC 20402, and also Newbasic 2.1 (Models I & III) which adds some 49 new commands. The distribution disk does contain a Creator program. This, when run, shows each Newbasic command with a brief description and asks whether this command should be included - thus giving the opportunity to the owner to create his own version of the Newbasic. Most of the commands are concerned with graphics but there are also sound commands, RS232 initialisation and I/O, pre-defined and definable keys, disk spooler, 2-byte Peeks and Pokes, string searches and changes. Newbasic is supplied by Modular Software Associates, 209 18th St., Huntington Beach, CA 92684.

Powersoft, 11500 Stemmons Fwy, Suite 125, Dallas, Texas 75229 supply SU+ 3.2 with the directions for use on Model 4 and PowerMail Plus which they term a true Model 4 program.

Mumford Micro Systems, PO Box 400, Summerland, CA 93067, have an Instant Assembler - apparently ideal for the novice assembly programmer. This program assembles the code as it is typed in. There is also ,in addition to the Editor, built in symbolic debugger and linking program, which allows for writing separate modules and linking them into one, single program.

If you wish for cartoon calendar you can order tape or disk from Blue Print Software, 100 Wauwepex Tr., Ridge, NY 11961. This will print a calendar for any year together with a chosen, graphic picture of a cartoon character. Available for 80, 133 or 80 condensed 133 characters printers.

Portable Computer Support Group, 11035 Harry Hines Blvd, No 207, Dallas, TX 75229, advertise five new programs for Model 100. Those are DATA+ ($59.95) being a data base, TYPE+ which permits direct printing or editing on the screen before printing, TUTOR+ intending to teach keyboard skills whilst playing games, SORT+ sorting in the RAM data compiled with PUT+ or DATA+ and TENKY+ which turns the numeric pad of Model 100 into a desk calculator. 80Micro also gave a good review to Businesspak+ (from the same firm). This contains a word processor (Write+), spreadsheet (EXPNS+), text entry program (PUT+), sorting program for PUT+ entries (Sort+), telecom package (Telex+) and Graph+ which, if you have Tandy's DMP-100 printer, will graph the data entered in EXPNS+.

Producer Software, Box 1245, Arlington, TX, now have Producer (a program writing program) for Model 4 at $ 199.95.

B.T. Enterprises Dept 1-L, 10 Carlough Rd., Bohemia, NY 11716, have DOSPLUS 4 for Model 4. Allegedly additional features are provided in addition to those in 3.5 version, Microsoft Basic is included and performance is said to show 100% improvement on TRSDOS 6.

Alternate Source, 704 N. Pennsylvania Avenue, Lansing, MI 48906, can supply Video4 a screen driver for Model 4. This program, whilst not strictly Model 4 program, toggles Model III ROM into the RAM and permits the use of Model III programs whilst taking advantage of the "superior features" of Model 4. It does not work however with any program, which does not use the standard video control block (Visicalc, Scripsit etc.)

Lazy Writer can now be run under TRSDOS 6 with 80x24 display. Available from AlphaBit Communications Inc., 13349 Michigan Ave, Dearborn, Michigan 48126.

Model 100 Assembler can be obtained from Custom Software, 605 North C, Wellington, KS 67152.

Montezuma Micro (for address see my last effort) now advertise the following, in addition to CPM 2.2, for Model 4: Scripsit, Superscripsit, Pascal, CPM Plus and CBasic (under CPM).

Hardware.

Tandy 5MB hard disk went down in price by some £300.

Mikrokolor is a board, which plugs into Model 100 expansion port (no hardware modifications). Displays colour graphics on any colour monitor or colour TV. Further details from Andreasen's Electronics Research & Development Inc., Box 5686, Vandenberg, CA 93437.

Useless Info.

Memdisk provides 62.5K space for files. System files of TRSDOS 6 are 55K. Basic/OV1 (Error messages) takes up 3K. It is possible to backup $/SYS:0 :2(SYS) and copy BASIC/OV1:0 :2. This will still leave 4.5K free in the Memdisk. SYSTEM (SYSTEM=2) will then re-assign drive 0 to Memdisk and drive 2 to the drive 0. It is then possible to run Basic (Basic/CMD:2) and have a very fast execution of TRSDOS overlays. This trick is used in a program listed in 80Micro which tests about 100 passwords a minute until it uncovers the password of a protected file.

Model 100 owners/programmers could be interested in the memory map published in 80Micro December 83. I am providing one copy of this map to the Secretary.

Anon.

SHORT REVIEW OF MODEL 4 VISICALC.

The Model 4 version of Visicalc has just become available so I willingly purchased a copy as I believe that it is one of the finest software packages available. Prior to this I have had to resort to carrying out large cash flow analysis exercises which exceed the memory capacity of my machine by using both my Model I and Model 4 (in Model III mode) with half of the spreadsheet in each machine. This meant that the data in the last column on the first half of the sheet had to be manually keyed into the second half of the sheet on the other machine. (You should see the horrendous formulae thus created to achieve continuity!!). In each machine I was down to the last 1K of remaining memory.

Anyway Model 4 Visicalc solved the problems. I managed to combine the two spreadsheets by using the CONV Utility in TRSDOS 6. The second half of the sheet was loaded into Visicalc first then sufficient rows inserted ABOVE the detail to permit loading of the first half. Without clearing the sheet, the first half was loaded in the clear space. (Remember Visicalc loads all /VC files with their top LH corner at cell A1). After that some relatively minor adjustments and that was all there was to it!!.

With the extra 64K RAM fitted there is a total of 90K available for spreadsheet work. The display makes full use of the 80 columns and reverse video and sound facilities. Twenty rows are displayed compared with 12 on the Model III version. The three Function keys are utilised.

F1 sets the cursor to the home position A1
F2 backspaces on the edit line
F3 activates the Edit function

Any illegal entries or commands are signalled audibly. I have noticed however that the window scrolling is not so rapid as Model I/III Visicalc but this is not a real disadvantage. In previous versions of Visicalc it was not possible to execute a DOS command from within the program. An extra facility has been provided to do this in this version. The manual as usual is superb, well up to Tandy's standard of documentation. It includes as appendices, several useful programs in Basic to allow the user to dump DIF files, printing work sheets from DIF files,and creating DIF files for loading into Visicalc.

I would have liked to see some of the Supercalc facilities incorporated however, such as individually variable width columns and block copying and deletions. Apart from that I think that it was well worth #159 to anyone who does any analysis work on large sheets of paper, such as balance sheets, cash flows, budgets etc.

INSTALLING AN RS232C BOARD

Isn't it a shame that the Model 4 doesn't have an RS232C board fitted as standard as was the case of the Model III. Cumana Ltd, better known for Disk Drives, supply an RS232C board which will fit the Model 4 and it is cheaper than the Tandy board. I ordered mine before Christmas and it was delivered in a Jiffy-Bag without any other protection. When I opened the packet several little pieces of something fell out and got temporarily lost on the carpet. After some feeling around I discovered two top halves of ceramic disk capacitors. which had been broken off in the post. As well as that the foil ribbon cable was badly dented so straight back into the bag it all went and was returned. Last week I received a replacement in another Jiffy-Bag!!! minus fixing screws.

On Saturday I started the installation without any instructions. Here's how I did it:

First lay out a blanket on the table or bench top and set the Model 4 on its feet. Remove the single screw in the middle of the back panel.

Next, turn the machine on its back with the screen facing upwards and remove all the screws from the perimeter of the base.

Now CAREFULLY slide the top cover (which contains the CRT) off the base G-E-N-T-L-Y. It is easy to damage the gun end of the CRT and if you damage it at this stage you might as well screw the thing together again and throw it in a corner until you save up for another one!!.

Having successfully removed the cover, an edge connector and a spade terminal connecting the main base unit to the top HT board. Slide off both connectors and set the top aside,

Turn the base unit onto its feet. The main CPU board will be revealed at the back. Note all the edge connectors to the board, in fact if you have a Polaroid Camera, now is an excellent opportunity to use it to record connections for use in reassembly. Carefully remove all the terminal connectors. You may find that the Blue connector on the left side of the board is tight - gently push off.

Next remove 8 screws and the board will come away. Set it aside. Behind this board you will see the Disk Controller board and to its right, 4 pillars for fixing the RS232C board. Place the RS232C board over the pillars with the output socket facing downwards. It may be a tight fit; then fix with 4 screws. The RS232C may come complete with power supply leads terminated in a connector. This can be removed and discarded. On the top of the chassis you will see a spare power supply lead and connector tied back. Release this and connect to the RS232C.

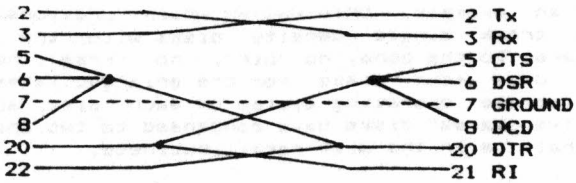
Finally G-E-N-T-L-Y bend the foil ribbon cable on the RS232C to allow it to come outside the main CPU board. There is an aluminium bracket which will protect it when the CPU board is refitted.

Refit the main CPU board and reconnect all the connectors. Take the protruding foil ribbon and insert the end into the vacant socket at the top of the board and dress the foil under the above mentioned bracket.

That's it fitted. All that is necessary is to refit the cover, remembering of course to reconnect the HT connection and spade terminal. Refitting the cover should be done with the machine on its back. This will help to keep the delicate CRT gun clear of the case. Get an extra pair of hands at this stage. Now all that remains is to refit the screws and it's done - PHEW!!. It only takes half an hour or so.

Mine worked first time and I tested it by connecting it via a NULL MODEM to my Model I and ran a comms program in each. Now I can transfer programs from machine to machine and even construct and edit Job Control files on the Model I Scripsit and transfer them to TRSDOS 6 - Great

I hear you ask "What is a Null Modem Adaptor". Well it is something that Tandy sells for #16 or so and is used to connect two TRS-80's together and essentially is there only to reverse pins 2 & 3 of the RS232 cable. I decided to build my own and I include a sketch of the interconnections.



INTERFACE CONNECTIONS BETWEEN ASYNCHRONOUS TERMINALS

I bought two RS232 connector sockets to fit the ends of my RS232 cables and installed them in a small 2.5 x 1.5 inch plastic box, connected them as above and it worked!!

I have just recently received from Tandy, the latest update of TRSDOS 6.01.01. This update includes a program MODELA/III. I am informed that this is a program associated with the new machine (Transportable Model 4) which Tandy are about to release.

It's always nice to hear from TRS-80 owners (all types) from "across the water".

David Roberts
Bangor (Co Down) 0247 62564

6, Plantation Road,
Ballymacormick,
Bangor,
Co Down,
N.Ireland.

The RADIO SHACK Double Density Kit with LDOS.

Those who, like myself, were taken in by Tandy's reduced price offer last year and bought one of their doublers after an assurance that it was compatible with LDOS, take heart! After re-reading an article in an old LDOS Quarterly about mixing Newscript, Electric Webster, LDOS and Sole, it seemed that Sole might be the answer to properly running LDOS on the RADIO SHACK Doubler.

A.J.Harding at Molimerx had some doubts and advised against purchase of Sole until it was checked out with the Tandy doubler but after a trial at Bexhill, whem all seemed straightforward, I returned with a copy of Sole. Today has been a rewarding day, transferring my files to double density and more than recovering the cost of Sole in the value of disksreleased.

For those in the know, or otherwise, LDOS will only boot in single density. Sole gets over the problem by re-configuring track zero on a formatted double density disk as single density then all goes smoothly. The Sole disk only has two programs plus a fix for the Tandy Doubler, Sole1/cmd which is run before making a backup copy and Sole2/cmd afterwards. Sole2/cmd leaves a message that the "LDOS disk will now boot" and sure enough its true!

As an example, DATA-WRITER which previously filled five 35 track single density disks with the operating system pared to the bone, no "Dir", no "Free", no nothing, now only uses four disks for the enlarged latest update with a complete operating system on each disk and room to spare. Five "Games" disks have condensed to two and at this rate I shall be in the disk retail business.

The TRSDOS 2.7DD which comes with the Doubler will not read a single density disk except to copy it onto a formatted double density disk. LDOS with Sole happily works with either a double or single density disk in drive No.1.

While down at Molimerx, I upgraded my LDOS 5.1.3 to the later 5.1.4 which now includes FED, the LDOS file editor. The free gift of FED which was originally a $40 program is no doubt included as a "come on" to buy FED II, the son of FED, I am highly impressed with FED and look forward to trying out a FED II at a future meeting. Will the regular attendants at User Group Meetings please note.

Oxford appears to have a scarcity of TRS and VG users, or else some very retiring ones. For contact with computer maniacs and as we also have a S------m with microdrive, my son and I joined O.P.C.C (Oxford Personal Computer Club) and because anyone who asks awkward questions is given a job to do to shut them up, I am now the not very efficient Secretary, (no comparison with Brian). Because of accomodation problems the Club has been showing a rather low profile but now that these have been resolved, activity is increasing by Megabytes and Gigabytes. Fortnightly meetings are held at the OXFORD CITY ROWING CLUB, alternating between a "Speaker" meeting and a Workshop. The City libraries and Radio Oxford cover local publicity for the meetings but if any NAIBUG members in or around Oxford who have missed the publicity would like to participate they would be very welcome.

There is also a well stocked bar!

The Oxford Ken Robinson.

I do find that when an Epson throws a pin in the print head, the legibility of text is appreciably reduced. This is even worse on numerals, so you are lucky!

USING THE EPSON PRINTER

In January 1984 Natgug News there is an article about printer codes. It may be of value to others to mention some points on these that I have discovered with my installation.

I have a Model I, 48k, with disk drives and Epson MX-80F/T with Graftrax-80. In using the latter I have found it beneficial to extend switches 2 and 3 on SW-1 (see Epson handbook) to external positions in the printer casing. This is quite simple to do. Switch 1-2 when ON gives automatic line-feed (LF) with each carriage return (CR). Switch 1-3 when ON gives LF whenever the buffer has been filled. Since there are no CR's (<ENTER>) within long BASIC program lines, when 1-3 is OFF the printer will print over a BASIC line when LLISTing if it is longer than 80 characters. Table I below gives the required settings for each use.

Table I - Settings for Dip Switches 1-2 and 1-3.

Program	Switch 1-2	Switch 1-3
Scripsit	ON	EITHER
LazyWriter	can be configured either way	EITHER
CopyArt	OFF	OFF
Dotprint	OFF	OFF
Own programs*	OFF	EITHER
LLIST	ON	ON

*Dipswitch 2-3 must be off if underlining is required from a BASIC program, unless you instruct a small line feed prior to the line you want to underline.

Now in writing printer routines in BASIC, I have found some curious facts about the famous printer codes mentioned by Don Bannister, particularly in respect of the line count that will be found at memory location 16425. The following assumes that you are using 11" long paper and that m.l. 16424 contains the number 67.

Table II - With switch 1-2 ON (automatic LF with CR)

Instruction	printer	memory location 16425
LPRINT	CR + LF	increments by 1 up to 66, then 0 up
+ CHR$(10)/(13)	2 LF's	" " 2 up to 66, then 1 up
+ CHR$(12)	LF's with up to 66, then 0, stopping at 1	m.l. 16425 incrementing by 1 each LF contains 1 after operation
+ CHR$(138)/(141)	2 LF's	increments by 1 up to 66, then 0 up
+ CHR$(140)	paper rolls to next top of form	increments by 1 each time as if LF

Table III- With switch 1-2 OFF

Instruction	printer	memory location 16425
LPRINT	CR	increments by 1 up to 66, then 0 up
+ CHR$(10)/(13)	"	increments by 2 up to 66, then 1 up
+ CHR$(12)	LF's with m.l. up to 66, then 0, stopping at 1.	16425 incrementing by 1 each LF has 1 after each operation
+ CHR$(138)	CR	increments by 1 up to 66 then 0 up
+ CHR$(140)	paper rolls to next top of form	increments by 1 each time as if LF
+ CHR$(141)	CR	increments by 1 each time

Incidentally, where I show CR the printhead does NOT home to the left. CR means that the next text is printed over the last unless an LF intervenes. To make the printhead home to the left under Graftrax-80, use LPRINTCHR$(27)CHR$(60).

The effect of all this when writing a printing routine in BASIC is that when operating with switch 1-2 OFF:
Use LPRINT CHR$(138) to force a linefeed
LPRINT CHR$(12) to go to top of form, which is rather slow. If you use CHR$(140) to roll rather than to step, for example after 30 linefeeds from last top of form, you will go to the next top of form, but with line counter at 31. If you then use CHR$(12) this will take you halfway down the next form! You should POKE 16425,1 to correct this. Beware of using CHR$(138) with switch 1-2 ON: this will give double line spacing, but will count as a single line.

After using LPRINT to return carriage and underline text previously printed, you will increment the line count and thus upset the top-of-form position. You need
POKE 16425,(PEEK(16425,)-1) to correct this.

When using line spacings other than 6 to the inch, the counts will not correspond to 11" paper length unless you adjust memory location 16424, which should contain the value (11*N+1), where N = number of lines per inch.

It may be that some of these peculiarities are responsible for some of the funny things that happens to me in LazyWriter - like the annoying habit of producing a blank sheet between each of a series of multiple copies!

There must be a lot more to find out about the Epson to use it most efficiently; perhaps someone more expert than me could write a mini-manual for sale to Natgug members!

David Adler
38 Church Crescent, Muswell Hill, N10 3NE
01-883 9478



Our Ref. RW/GWF

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Micronet 800
Telemap Limited
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Telephone(0733) 63100

18th January, 1984

Dear Mr. Heller,

I have enclosed a Press Statement for inclusion in your Tandy User magazine which relates to a decision by Micronet to cease a videotex solution for the Tandy Models I and III.

Please do not hesitate to contact me if you have any further questions. If you do receive queries from existing Micronet subscribers, would you please request them to call our Customer Services Department (Melanie Rouse) on 01 278 3143.

It was interesting to talk to you about Bulletin boards. It is Micronet's intention to introduce a national Bulletin board during this year. This may rekindle interest in Tandy users in our service.

I may contact you in the future about 300/300 baud accesses and the software you are considering writing.

May I take this opportunity of thanking you for all your co-operation in supplying Bob Dention with the Tandy programs which were included in Micronet when it launched last March. I am sure a lot of people outside of the User group have found the programs very useful.

Yours sincerely,

Robin Wilkinson
General Manager

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One of the many faces on Prestel

PRESS STATEMENT

Support for the Tandy TRS80 Model I and III is being discontinued by Micronet 800.

The news follows the disappointing response to the service from Tandy owners and growing difficulties for users in obtaining necessary hard wire add ons for the Model I.

Micronet 800 is an electronic magazine on the U.K. Prestel Viewdata system and includes news, electronic mail, and telesoftware downloading. The service was launched in mid 1983.

Subscribers to the service who had purchased a modem and software from Micronet will be offered a number of options including a refund of the cost of the networking interface and the Micronet subscription.

Subscribers can opt to stay on the service but: "we cannot guarantee to provide those users with the size and quality of a service we would normally provide" said a spokesman.

"The response to our service from Tandy owners has been disappointing and it is uneconomical and technically complicated for us to continue at the present level of subscribers".

The options for existing subscribers are:-

1. Subscribers wishing to leave Micronet will get -

   a. Full refund of the networking interface which in the case of Tandy Model I is £59.95 (acoustic) £98.65 (direct connect), in the case of Tandy Model III is £64.95 (acoustic) £103.95 (direct).

   b. Refund of Micronet subscription but not cost involved in using the database.

2. Subscribers can opt to leave Micronet but stay on Prestel, in which case the Micronet subscription only will be refunded.

Subscribers with any further queries should contact Micronet Customer Service (Melanie Rouse), 155 Farringdon Road, London EC1R 3AD.
Telephone No. 01 278 3143.

A MODEL 4 UTILITY FOR USE UNDER MODEL 3 MODE.

I have just comleted a program which may be of interest to a limited number of Model 4 users who are running under NEWDOS or TRSDOS 1.3, that is, Model 3 mode.

The program is too long to publish in the newsletter and although fundamentally a model 3 program is restricted to model 4 as it requires use of the special function keys of model 4. As the number of such users is probably small,(if you've bought a model 4 you want to use its 80 column screen) I doubt it is worth putting in the library.

The program consists of three main features. The first allows single key entry of up to 24 words, statements or commands. The words can be up to seven characters long including enter when required. if a longer entry is required it can be coded on the last or W key. This entry can be up to 128 characters long. The advantage claimed for this program is that it operates under DOS, EDTASM and most word processors as well as under BASIC. As an example, In edtasm it is often necessary to type DEFB when entering tables. If this is needed one can load a key with the tab (right arrow), DEFB followed by the tab again. With this recalled each time one ends at the position ready to enter the hex value for the byte with only the control key plus one other key pressed each time. I have only encoded about half of the 24 available keys on loading as I feel more than this is only confusing. However the user can add his own words from keyboard at any time whilst in DOS, EDTASM, BASIC or most commercial programs. This is done by prssing the F2 key. after pressing F2 any word can be entered including the enter key for auto enter. Entry is terminated by shift/up arrow. No check is made of the length of the entry as when needed more than seven characters can be entered. This will simply extend the word into the space available for the next key. The user must remember that using that key will produce an incomplete word if pressed. The single key entry is invoked by pressing 'control' plus the letter for the entry required. I used the control key because I liked the location of that key. It was tempting to use clear or shift/clear similar to TRSDOS6 and LDOS to maintain compatibility but I decided I disliked the combination sufficiently not to use it.
The codes applicable to each key can be examined any time by pressing shift plus the F2 key. At present the screen display is not replaced after examining the key codes but I shall include this facility shortly. The reason I have not done so at present is that I shall use the second screen facility of the 64 character model 4. As I intend to eventually rewrite the program for model 4 mode and the second screen is not available in the 80 column mode I am retaining the common features where possible. It will be fairly easy to add the second screen display later.

The second feature of this program is what I consider the most useful. It is a recall and edit facility. The last entry made, or the last but one, before an enter can be recalled for repeat use. This would be of limited use if there was an error at the first character or a character near the beginning of a long

command without an edit facility as the back spacing necessary would be destructive. In my program the last or last but one entry to be recalled is in the familliar TRS80 edit mode. This makes correcting any mistakes quite easy. when the correction is made, pressing 'enter' enters the statement or command again as if it had been retyped. As an example; say you enter the command: COPYTEST/DAT:0 to TESTONE/:1. A dos error is produced because you forgot the space or comma after COPY. You now press F1. The entry reappears in edit mode with the cursor at the first character. you space along to the T, press I for insert, put in the space, press enter and the command works. To escape without entering the command if you change your mind quit by pressing Q. If you have made a mistake a couple of times the try before last may be nearer correct; pressing F1 gets the last entry, pressing F1 again gets the previous entry. Pressing F1 again toggles between the last two entries.
If you have used any of the Hewlett Packard 9000 series computers you will know how useful this recall function can be. The HP9836 allows ten levels of recall and we find frequent use for that many at work. However I think two levels is a good compromise as I allowed 255 byte character buffers to cater for the longest permitted line on the TRS80. HP only allow 80 character lines.
Whilst in the edit mode of this program the cursor flashing is stopped to indicate the edit mode is in operation.

A secondary use for the edit mode referred to is the ability to call this mode from BASIC by a USR call and to pass string variable data to it for editing. During my small amount of data file work I maintain various name and address lists for my wifes' use. When these require small corrections such as correcting a spelling error or similar mistake (frequent!) my programs make a USR call to the edit routine passing the variable data. It is corrected in the edit mode and then passed back to the BASIC program. I have found this a very useful feature.

My programs third feature is probably not of great general interest but may be of use if your printer has no form feed button. Pressing F3 sets top of form conditions in the TRS80 printer DCB.(sends a 1 to location 4029H). It also displays the prompt "Press Enter for top of form or any key to escape." If enter is pressed the printer is sent a form feed code. One of my printers is one of those Centronics 739's recently seen at knock down prices. This can only be set to 'top of form' this way or by switching off and on again. With this feature top of form can be set at any time. Incidentally, (not part of this program,) I have modified the model 4 print driver to give paging on the Centronics automatically on any program calling the internal print driver. Now my assembler listings can be paged on the Centronics.

The program described is free to anyone sending me a 5inch disk and postage. (Naturally any donation to offset the time spent will not be rejected!).
Now for the bad news. The program is not yet completely bug free. The bugs that have persisted are relatively minor however. Those I know of are: 1, sometimes, about once in 50 uses of the recall a spurious character gets into the start of the edit buffer. It can be easily edited out. If it happened more

regularly it would be easier to track down the cause. It seems like switch bounce but has not responded to the normal delay treatment.
2, Pressing F1 for recall and edit whilst in the BASIC edit mode causes havock.
3, Occasionally, the first time the routine is called from BASIC the full data is not found in the edit buffer. Quitting and retrying has always proved successful so far.
The program occupies about 2K of high RAM.

Parts one and two of the program could be developed to be useful commercial utilities if I could spend the time perfecting them. However until I retire the necessary time just can not be found. For this reason I offer the program to members as described.

If anyone is interested in developing the work further I can provide a reasonably commented listing and a short description.

On the subject of time; For anyone who has not yet contributed to the Newsletter, this has taken a whole evening to draft and type in. Correcting, printing, rechecking and final printing will probably occupy most of another evening. (And I'll bet a Pound that at least one spelling mistake will get through. Thats in spite of rechecking by my wife and myself a couple of times. They always have before! Anyone got a cheap spelling checker?).

Roy Barber. 01-304-3856

THE TANDY DMP-2100 PRINTER

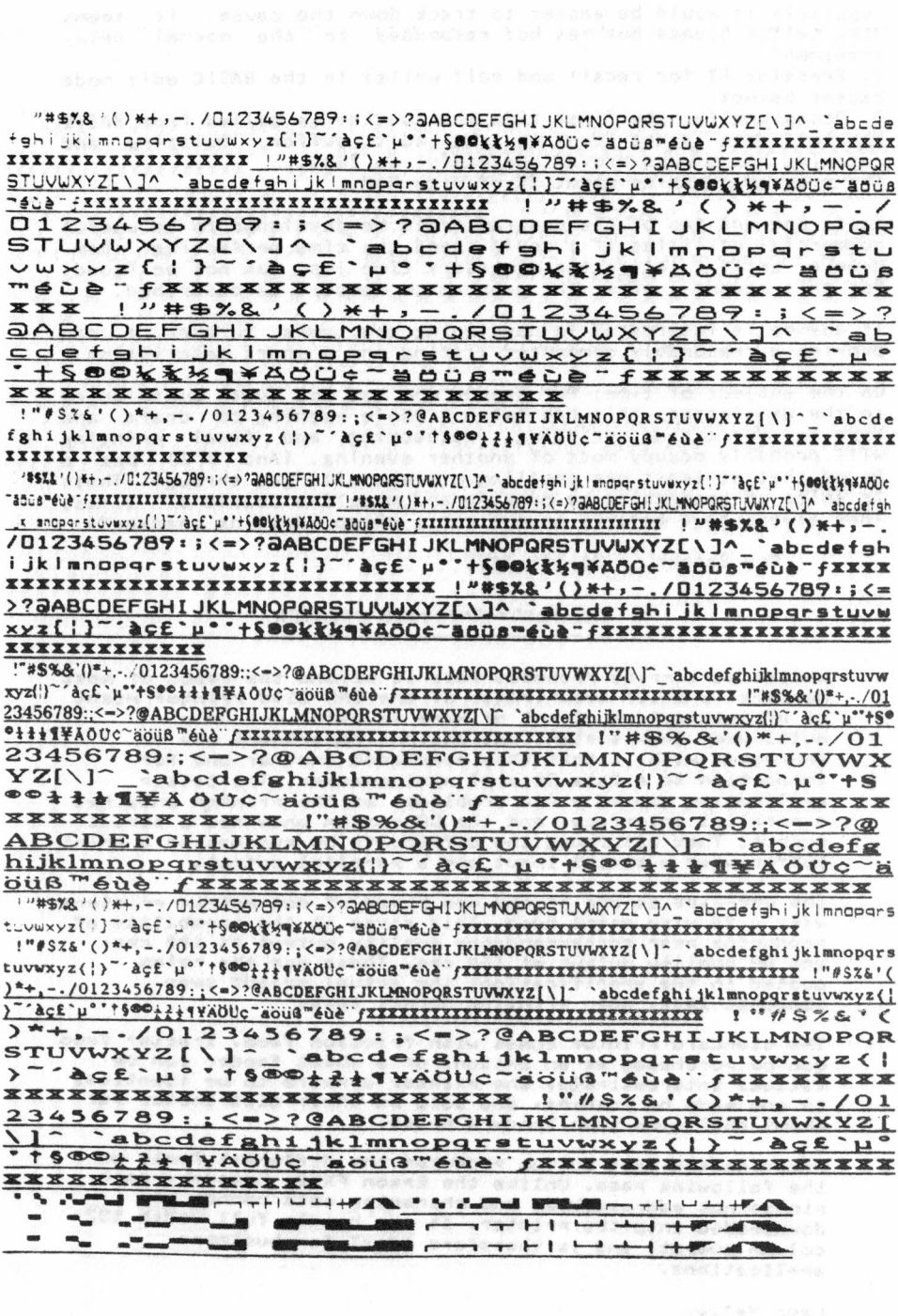
Whilst it's price probably puts it beyond the reach of most members, a brief description of the DMP-2100 printer might be of interest. A client of mine is using one on a multi-user Onyx system, and another department was so impressed with it that they purchased another one for connection to a Data General minicomputer. The latter application caused a few problems, as the printer only has a parallel interface, and the DG system only has a serial output. They got round the difficulty by purchasing a print buffer with a serial input and a parallel output.

The DMP-2100 is one of the new breed of dot matrix printers with a 24 wire print head. This gives it the capability of producing near correspondence quality output at 100 cps, and DP quality output at 160 cps. These are the rates quoted in the specification; the actual speeds seem somewhat less, when printing normal text.

The standard printer comes with friction feed. Tractor feed can be purchased as an option, or a sheet feeder can be fitted. Interestingly, the printer appears to be identical to one made by Toshiba, and sold by their distributor for about £500 more than Tandy's price!

Pressing the test button produced the different fonts on the following page. Unlike the Epson FX80, however, each pin is not addressable, and character sets cannot be downloaded into the printer. It can handle full width 132 column output, and is therefore ideal for business applications.

Leon Heller



```
1 '    EPSON CONTROL CODES              by John Bale

2 '    Various notes have appeared in the newsletter about
       Basic programming tricks for sending control codes
       to the Epson printer.

3 '    My own preferred method is illustrated here.   At the
       start of a program, use a subroutine call such as:-

4 CLEAR 100: GOSUB 9000

5 '    The subroutine sets up a number of string variables
       representing the combinations of control codes to be
       used in the course of the program.

6 '    Whenever the codes are to be sent to the printer, the
       appropriate variables are included in an LPRINT list
       as in these examples:-

100 LPRINT RS$; "RS$ resets all Epson controls to normal"
110 LPRINT UL$; "UL$ sets underlining"
120 LPRINT EM$; "EM$ sets emphasised print (note that underlining
remains set)"
130 LPRINT RS$;EM$;    "RS$ cancels underlining etc, thus avoiding
the CHR$(0) problem"
140 LPRINT CN$; "CN$ sets condensed type face"
150 LPRINT EL$; "EL$ sets enlarged type"
160 LPRINT EC$; "EC$ sets enlarged condensed"
170 '                   etc, etc, etc
999 END


8999 '      Control-code string-setting subroutine:-


9000 ES$=CHR$(27): REM escape code
9010 RS$=ES$+"@"
9020 C1$=CHR$(1): UL$=ES$+"-"+C1$
9030 EM$=ES$+"E"
9040 CN$=RS$+CHR$(15)
9050 EL$=RS$+ES$+"W"+C1$
9060 EC$=CN$+ES$+"W"+C1$
9070 '      etc, etc, etc
9999 RETURN
```

RS$ resets all Epson controls to normal
UL$ sets underlining
EM$ sets emphasised print (note that underlining remains set)
RS$ cancels underlining etc, thus avoiding the CHR$(0) problem
CN$ sets condensed type face
EL$ sets enlarged type
EC$ sets enlarged condensed

At the last NATGUG meeting (Swindon) John Kilpatrick and I spent a morning working on this patch for Pencil Plus. As we had not the time then, it was rather of a "It works, lets leave it" job. I then promissed John that I would look into it in futher detale.
The patch will tidy up the tiding up/house keeping and screen desplay of PENCIL00/SYS (The bit loaded with PENCIL/CMD)
We think that all users of Pencil Plus 2.0z would find this patch of some use to them.

Change the FRS 16, 17, and 18 in PENCIL/CMD to the following (The underlined digits are the NEW coding):

P.Knapp.

```
DRV 00  38FE 0120 F92B 360D 2322 2852 CD0A 5ECD 8.. .+6.#"(R..^.
0   10  8E64 003C 1C1F 013F 8300 0610 2100 3C11 .d.<...?....!.<.
0H  20  3FF0 368F 1936 BF01 8280 6323 10F8 CD8E ?.6..6....c#....
    30  64C1 3F01 7EB0 00CD 8E64 413D 013E E000 d.?.~....dA=.>..
DRS 40  CD8E 6444 3CA8 9C8C 8CB4 C2BC 0104 8CB4 ..dD<...........
I01 50  20A8 B4C4 BCC2 A09C 8CE4 C28C 8CEC 8C8C  ...............
12DH60  C38C CCA0 9000 CD8E 6464 3CAA 95C2 BA85 ........d.<.....
    70  205F C6AA 97AD 90C2 BF20 A897 C282 81C3  _..... ........
    80  BFC5 BF2C 6A95 00CD 8E64 C43C AA97 9383 .....,j....d.<....
    90  81C2 BF83 8381 C3AA 9520 8BB4 20BF 20AA ......... .. . .
    A0  95C7 BFC5 BFC9 0103 83AB 9701 8200 6401 ..............d.
    B0  0C83 00CD 8E64 043D AA95 C5BF 0104 B090 .....d.=........
FRS C0  20AA 95C2 82AD BFC2 8BB4 B09E 8120 E0E0  ............ ..
16  D0  BFE0 E0C3 BF01 05E0 90C6 8A85 00C3 F564 ...............d
18H E0  0000 0000 0000 0000 0000 0000 0000 0000 ................
    F0  0000 0000 0000 0000 0000 0000 0000 0000 ................
DRV 00  0000 0000 0000 0000 0000 0000 0000 0000 ................
0   10  0000 0000 0000 0000 0000 0000 0000 0000 ................
0H  20  0000 0000 0000 0000 0000 0000 0000 0001 ................
    30  8280 6400 0000 0000 0000 0000 0000 0000 ..d.............
DRS 40  00E3 5E23 5623 ED53 2040 7EFE 0120 0C23 ..^#V#.S @~.. .#
I02 50  4623 7ECD 3300 10FA 2318 EFB7 E3C8 CD33 F#~.3...#......3
12EH60  00E3 2318 E57E 03AF 77BE C954 4558 5420 ..#..~..w..TEXT
    70  494E 204D 454D 4F52 5920 4341 4E4E 4F54 IN MEMORY CANNOT
    80  2042 4520 5245 434F 5645 5245 4420 5052  BE RECOVERED PR
    90  4553 5320 454E 5445 5220 544F 2043 4F4E ESS ENTER TO CON
    A0  5449 4E55 4500 0000 CD8E 64C9 3D4D 6963 TINUE.....d.=Mic
    B0  6861 6501 8200 656C 2053 6872 6179 6572 hae...el Shrayer
FRS C0  2773 2022 454C 4543 5452 4943 2050 454E 's "ELECTRIC PEN
17  D0  4349 4C22 2056 6572 2E20 322E 307A 00CD CIL" Ver. 2.0z..
11H E0  8E64 563E 4469 7374 7269 6275 7465 6420 .dV>Distributed
    F0  6279 3A00 CD8E 6499 3E49 4A47 2E20 436E by:...d.>IJG. In
DRV 00  632E 00CD 8E64 DA3E 5570 6C61 6E64 2C00 c....d.>Upland,.
0   10  CD8E 6418 3F43 616C 6966 6F72 6E69 612E ..d.?California.
0H  20  00CD 8E64 EF3F 5769 7468 2044 616E 2052 ...d.?With Dan R
    30  6F62 696E 736F 6E01 8280 6527 7320 2250 obinson...e's "P
DRS 40  454E 4349 4C2B 2200 CD9E 6521 BD3D 7EEE ENCIL+"...e!.=~.
I03 50  7077 237E EE6B 7713 EF01 8001 CD2B 00E7 pw#~.kw......+..
12FH60  C294 5F0B 7BB1 C818 F300 0000 0000 0000 ..._.x.........
    70  0000 0000 0000 0000 0000 0000 0000 0000 ................
    80  0000 0000 0000 0000 0000 0000 0000 0000 ................
    90  2020 2020 8C00 0020 2020 2020 2020 2020      ...
    A0  2020 2020 FF64 0070 0500 0000 0000 0000      .d.p........
    B0  0000 0000 0000 0000 0000 0001 8200 6600 ..............f.
FRS C0  0000 0000 0000 0000 0000 0000 0000 0000 ................
17  D0  0000 0000 0000 0000 0000 0000 0000 0000 ................
11H E0  0000 0000 0013 0000 0000 3E01 0103 3E00 ..........>...6.
    F0  0C4D 0100 0800 0150 2020 2020 2020 2020 .M.....P
```

1984 & NATGUG & IQLUG

As most of you will have seen from PCW and the other mags Leon and myself have formed a user group for the QL, which is based on the same lines as NATGUG. At previous AGMs members have been advised of the slowly dropping numbers, and with TANDY's current model policy this trend will continue. As an accountant, lecturer and microcomputer user I anticipate updating everysooften. This is what is happening at the moment. My own future is financial lecturing for beginners to final students at the professional level, using one or two types of micros in that teaching, and helping small businesses use a micro in their companies. Over the next year I will maintaining the level of workshop activity plus Luton College - accounting department will be offering low cost days/weekends on CORPLAN, TRADER, VISICALC, MULTIPLAN, SCRIPSIT and BASIC for accountants. The latter will be based on the TANDY book by STERNBERG.

I hope members will see from the above that my heart is still in the right place, and in fact services to members could improve in quality as local graduates will be employed on a casual basis to ensure the continued smooth running of the groups to allow for any peaks in the admin. encountered keeping the above ticking over. My real enthusiasms are still micros and financial accounting, with my colleagues having their ears bent on the latest project, hooking Model 4s to the QL for a business game based on the petrol market, with the QL holding a model in the RAM and acting as an umpire. If the latter could be put together, then FLEET STREET would make an excellent game with the number of factors involved. The market is fast moving, narrow margins and several teams could play at being newspaper barons.

During this last week CORPLAN has just been run for the fourth year with around 25 teams taking part over two nights (3 hours per night), and money was seen to change hands on one or two of the decisions. For once the students had a real fight on their hands as local industry took second and third places.

As a department TRADER is now in regular use by a non computing person with unemployed students doing some retraining on a full time basis. I saw the program at Northampton Tandy and suggested to the departmental head it was tried it out on our new students every year. As we had a new group coming in the program was tried out in January '84, and there were no problems. The students produced a trial balance, profit & loss and balance sheet from a few entries and looked in wonderment at the speed of the whole thing. There are one or two grouses at the moment about TRADER. A printer has to be attached, an account cannot be singulary printed out - details of all petrol - and reversing entries can be a little cumbersome. As users we would like to have different companies on a data disk, but then the program was not written for colleges and a classroom of students.

Brian Pain.

WORDSWORTH has a number of new items for 1984.

LeSCRIPT and ZORLOF II

For those undecided about NEWSCRIPT we now also stock LeScript and Zorlof II.

LeScript for Models IV, III and I with 80 column screen on the Model IV. Gives excellent word processing and supports right-justified proportional print on over 60 printers. Can be used with Electric Webster spelling checker. Utilises extra memory bank allowing 96K documents. £99.95 inc VAT and postage.

Zorlof II is LeScript's small brother, fully capable and less expensive. Also compatible with Electric Webster. With zapping feature and support for over 50 printers this word processor costs £65.95 inc VAT and postage.

DOSPLUS

DOSPLUS 4 for the Model IV. All the smooth operation of 3.5 and with 80 column width, reads LDOS 5.1.4 files. Now with MZAL Macro Assembler free (normally $149). £139.95 inclusive.

For those with TRSDOS 6, we shall soon have the TRSDOS 6 Enhancements which give the Enhanced Basic of DOSPLUS 4, two Diskzappers, etc. Only £39.95 inc VAT and postage.

DOSPLUS 3.5 is still available for Models I and III, highly recommended at £109.95 inclusive.

DOTWRITER

The new series of fonts for Dotwriter are now available. Send for a sample and list of 14 disks.

HARDWARE

JVC colour monitor - medium resolution - high enough res for Apple II, BBC, Lynx, etc. Only £180.00 inc VAT and carriage. High resolution available at £230.00 inclusive.

We have available low cost monochrome amber or green monitors for your Model I.

For those investing in new ideas, the ink jet printer from Siemens is down in price. Call us for information.

We also stock a variety of printers, disk drives and accessories as well as a wide range of TRS-80 software. Please write or phone for our catalogue. ALL OUR PRICES ARE TOTALLY INCLUSIVE.



WORDSWORTH

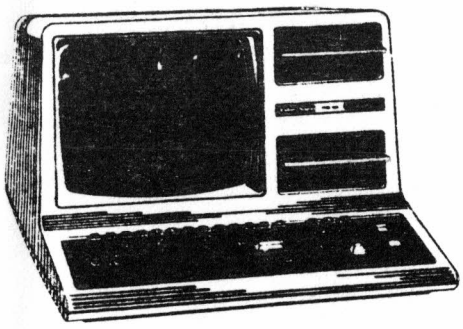
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Banchory (03302) 4168

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MODEL 100 / 3

NATGUG NEWS

Volume 5 Issue 9 March 1984

OFFICIAL JOURNAL OF THE

National TRS-80

& Genie Users

Group.

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EDITORIAL

The AGM took place at the MK workshop, and Brian and I were re-elected, so you are stuck with us for another year! We can't be doing too bad a job, as we get very few criticisms about the running of the Group.

Once again, some disks were stolen at the MK workshop. It really is not good enough.

The Swindon week-end workshop was held very close to the MK meeting, which probably explains the poor turnout. Whilst everything went quite well on the Friday and Saturday, while Brian and I were there, there have been some adverse comments about the organisation on the Sunday. We will endeavour to prevent such an occurrence in the future, by Commissar Brian remaining in residence for the whole workshop.

IQLUG continues to thrive. At the rate things are going, IQLUG will be bigger than NATGUG in a couple of months! The non-delivery of the new Sinclair machine is extremely irritating. Although we have had our problems with Tandy, they do generally have items in stock when they advertise that something is available, and they do not appear to deliberately mislead their customers as Sinclair have been doing over the QL.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. If possible, send material in printed form.
2. Scripsit or Pencil disks/cassettes are acceptable.
3. Ensure your ribbon is in reasonable condition.
4. Printer output should be on A4 paper if possible.
5. If you send in hand-written material, write legibly.
6. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

LIBRARY INFORMATION

Model 1: Leighton Davies, 105 Caerau Road, Caerau, Glamorgan. Tel: (0656) 738337

Model II: Jim Hutton, 25 High Street, Stroud, Glos. Tel: (045 36) 4423

MEMBERS' LETTERS

Last year I bought a double-sided disk drive to go with my Video Genie configuration. I already had a 35 track Shugart 400 as drive 0 but it was limiting in terms of storage space and handling. A double-sided drive as drive 1 seemed to be the answer because it offered a lot on a pennies per byte basis and I had just bought SmalLDOS which claimed to support such hardware.

Now that I at last have it working the promise has been fulfilled, but it has taken eight months of correspondance, questioning and frustrating trial and error for this tyro to discover that:

a. SmalLDOS as supplied does not in fact support double-sided drives. It needs another driver called TWOSIDE for this feature to work, and more seriously;

b. Some Shugart 400's supplied by Lowes were modified so that the Side Select signal (pin 32) enabled the drive to be used as number 4 in a four drive configuration (normal selection options are 1,2 and 3 only). The practical effect of this was that every time the system sent a side select signal the Shugart was selected instead of the second side of drive 1 thus defeating all attempts at a double-sided format until "de-modded"

The moral is perhaps only to use configurations well proven and documented by (many) others. A more comforting aspect of the experience though is that the Tandy community is full of people very ready to help with problems, and that someone somewhere knows the answer. In my case the name to be inscribed on the roll of honour is John Thorpe of Lowes. So to those with problems my advice is "Don't despair. Keep asking!"

M. J. M. Salt
11 Harvey Close
NORWICH
NR7 0DQ

PROBLEM SECTION

A couple of requests for help. Does anyone have a fix to Newdos/80, or know of a program, which will allow a screen print to an Epson FX80 even if there are graphics characters? My Epson goes into a paroxysm of line feeds if I JKL anything but conventional text. Second, does anyone have a Model 1 Fortran they want to sell - more and more model 1 software is being dropped by Tandy nowadays. They don't even do Visicalc anymore.

Paul Godier
83 Trinity Road
Wimbledon
LONDON SW19 8QZ

May I congratulate you on a first-class newsletter.

I would be grateful if you could help me on a few points.

I have a VG and expander box with 48K, RS-232 etc., one disk drive, DMP100 printer, and a Lowe Hi-Res unit running under Newdos 80.

Firstly, when running a BASIC program the system suddenly freezes up, usually during an input from the keyboard, only remedied by a re-boot. BASIC * does not appear to work at all.

I have a Lowe lower-case mod. which works perfectly except with Pencil. Pencil works OK if the "lower-case fitted?" query is answered "NO", but if answered "YES", none of the control keys function. Are there different controls for lower-case? I don't have a manual.

Lastly, could you please tell me if there is a regional group near me. I am studying at UWIST University, Cardiff, Wales.

JR Williams,
124 Grace Way,
Stevenage,
Herts.

(* I would think that your problem with the VG locking up is caused by a 'dry solder joint' somewhere on the board. The vibration caused by keyboard operation is probably resulting in a momentary poor connection somewhere. My Model I suffered from a similar malady, and it was quite difficult to find. Carefully inspect the board and re-solder any doubtful connections. You might have to send it back to Lowe, if you cannot find the cause of the problem.

You should have got a manual with Pencil. You will need to add an additional control key to your keyboard to use lower-case, unless you patch Pencil to use one of the existing keys. Has anyone got the details of a suitable patch? LFH *)

WHO NEEDS CASH REGISTERS ??? by Colin Bowyer

Does anyone want a slightly used NCR cash till?? I've got one to dispose of! About six months ago, I was showing off the "new gleaming 4 way analysis point-of-sale register" to an annoying colleague, who asked the question, "What about Servicing ?".

Let me explain. My business as a television dealer is split into several categories; Sales, Hire-Purchase, Rental, Small Goods and Service. Unfortunately, when I bought the cash till I had somehow listened a bit too intently to the rather persuasive salesman that had offered Xanadu.

A few cheques later, I realised that the 4-way analysis provided by the new centre of worship was inadequate for the operation of my business.

Undeterred, I decided to have a brainwave (This takes time...).

Now brainwaves come in various sizes and shapes, and I had an urge to use up a spare grey lumpy one that was laying unloved on the floor in the corner.
I picked up the Model 3, shouted 'Eureka' and rushed to the 'Small Goods' counter. With a few wires, a Korean Ferguson tape-recorder and a lot of anguish, I decided that SOMETHING should be possible.

A phone-call later I was on the way to becoming the first shop in East London with a real-time data collection system instead of those BORING old cash tills.
The surprising thing is that it all worked first time! A slim package of BASF tape arrived from a friend with the instructions 'READ ME'. The Tandy obliged and said,"Good morning everyone!" to the assembled shop staff.
Nowadays, 'Cuthbert' the computer is on first name terms with everyone and has a voracious appetite for all manner of facts and figures.

Throughout the day we enter all point of sale information into the computer through a simple set of menus. At each stage the input is kept to an absolute minimum to prevent hindrance to the busy sales staff.

This information is immediately transferred to the cassette tape (in lieu of a till roll) and a separate analysis printout is produced in parallel.

At the end of the day, the C90 tape cassette is then transferred to Cuthbert's big brother (Montmerency) where it passes through a simple BASIC program which translates the input into PROFILE data format.

At this point, suffice it to say, all hell breaks loose. We can make the data loop through all manner of analysis and report sub-systems. PROFILE's comprehensive analysis capabilities, coupled with the bridge provided to VISICALC and SUPERSCRIPSIT enable fairly complex reports and other outputs to be produced. It is still early day's yet, but I am optimistic that this set of facilities can be enhanced in all kinds of ways.

First, another brainwave and secondly, 'Dya wanna buy a cash till???' !!!

PRINT BUFFER BOARD

Roger Hamlett's print buffer board, which we used at the MK workshop for a group construction project, is ready for full production, but the original PCB manufacturer has upped the price, and Roger is in the process of finding another supplier who can make them more economically. For those who have not heard of this device, it comprises a small PCB, which Roger hopes to sell for around £20, together with an EPROM, and circuit details, on which you mount a Z80 processor, the EPROM, eight 64K RAM chips, and a few other bits and pieces. The whole thing should cost around £100 to put together, and you will have a 64K print buffer that is equivalent to ones that are sold commercially for over £200.

You can also load your own programs into the buffer, to perform code conversions, for instance, or even to filter out naughty words, which could be very useful in an educational environment!

Leon Heller

ACULAB PRINT BUFFERS

Whilst a simple print buffer like the one designed by Roger Hamlett, which was built at the recent MK workshop, is suitable for most purposes, the more complex (and expensive) buffers available from Aculab Ltd., can solve a large variety of interfacing problems, in addition to the buffering function. Aculab can supply buffers with a memory capacity from 16K to 256K, and which give serial to parallel and parallel to serial conversion. These might be very useful if you change your system, and wish to use the same printer, although your new system does not have the right kind of printer port.

Aculab have been very helpful to members in the past, with difficult interfacing problems.

Aculab's address is:-

Aculab Ltd.,
Unit A, Station Approach,
Leighton Buzzard,
Beds. LU7 7LY
Tel: (0525) 371393

Leon Heller

MODEL 1 DOS BENCHMARK RESULTS.

In response to Edward Rashbrooke's call to Model 1 owners, here are some results to add to the others. All were obtained using a Model 1 (old ROM's) with 48k, Tandon TM 100- 2 drives, and the standard clock speed. Because a single density disk only has 350 sectors I wrote 250 records instead of 500, but otherwise the program was identical.

1)SINGLE DENSITY.

DOS	File Type	Time(seconds)	
TRDSOS 2.3	Create	167	(see note)
"	Rewrite	63	
NEWDOS 80	Create	141	(vers 1 & 2) identical
"	Rewrite	109	
LDOS 5.1.3	Create	139	
"	Rewrite	58	
DOSPLUS 3.5	Create	121	
"	Rewrite	59	

2)DOUBLE DENSITY.

NEWDOS 80v2	Create	141
"	Rewrite	110
LDOS 5.1.3	Create	113
"	Rewrite	59
DOSPLUS 3.5	Create	99
	Rewrite	61

Note: My TRSDOS searches a lot for first access to a directory, so the longer time reflects this. (Probably a fault.)

After doing these tests it occurred to me that lines 60 to 80 are not really DOS actions, but Basic ones. To see the difference I deleted them, so that the program writes a series of identical records (all spaces) to the disk. The result was surprising; times for double density rewrites altered as below:

DOS	With lines 60-80	Without
DOSPLUS 3.5	61	12
LDOS 5.1.3	59	16
NEWDOS 80v2.0	110	100

It seems that NEWDOS has something in it which drastically slows down actual disk accesses. The figures also suggest that DOSPLUS has very fast disk accessing, but a slower basic than LDOS; I've not been able to substantiate this with any tests, though. I haven't gone any further with this - too time consuming! Has anyone else any ideas?

Henry Shepherd
3, White House Close,
Shippon,
ABINGDON,
OXON, OX13 6LP
Tel: 0235 21921
3 Jan 84

Model 100.

Come on you Model 100 users, let's have some bright ideas. As a two day user I have some problems that the manual doesn't explain.

1.How can you format text? Is there a direct way to format for printing on an Epson MX80 III? I can see possibilities of either saving to tape, then loading to a Model I under Scripsit,Pencil or Newscript,editing in the print format commands and printing from the Model I - or going direct to the Model I via the RS232 connection. Can a tape saved from a Model 100 be read by a Model I? I haven't tried it yet.

2.How can I print the Extra characters (123-255) on the Epson? Is there a way using bit image mode? A simple LPRINT CHR$(27);"L";CHR$(80);CHR$(0);:FOR X=123 TO 255:LPRINT CHR$(X),X;:NEXT X. doesn't work. Its all vey well to display them on the screen but so much better to be able to include thein text.

3.What is the <ESC> key used for? The manual only tells you that it is the ESCAPE key, so far I have found no application for it. Maybe I should read the Manual more carefully.

I find the Model 100 a delight to use, any where at any time. It fits conveniently into my briefcase, has such a positive keyboard and the "Label" key prompts are a great help to my memory, which isn't what it used to be.

STEPPER MOTORS.

Following up Leon's talk at Milton Keynes and having an ex-Epson till printer with a small stepper motor included, can anyone give me it's characteristics? It is made by SHINSHU SEIKI CO LTD. has a reference SM-E48B and stamped No.B8Z06. Its a permanent magnet type with two grey,a red and a black wire. The grey leads are internally connected as are the red and black. It is 38mm long by 25 mm diam with a 2mm shaft.

There was a very good article "A STEPPER MOTOR PRIMER" in BYTE Feb.1979 which covers the theory and control of steppers, but is somewhat dated as far as I.Cs.for control circuitry. Members are welcome to borrow my copy.

MILTON KEYNES.

How is it that Brian and Leon have been able to gather together such a delightful, interesting, knowledgeable and stimulating group? There is a touch of magic somewhere. My thanks to them, to Mike Sayer,Chris Cain,David Washford,Don Bannister, John Kirkpatrick and of course Leighton Davies and all the Speakers for making this the most satisfying of the Weekend Workshops that I have attended. I joined NATGUG as a stumbling amateur with no electronic or computer experience and it is mainly through the Weekends that I can now say "I do know just a bit about them". For the members who have not been to a Workshop, try one out. They can throw a lot of light into darkness and no matter how hectic the session, there is always someone who will sit down with you to sort out problems or to learn from you.

Ken Robinson (Oxford).

WHICH DOS ?? A COMPARATIVE REVIEW.

The first DOS I used was TRSDOS 2.2. Since this would not back itself up I threatened to return Disk Drive, Expansion Interface and DOS to the shop, and they gave me NEWDOS+ to keep me quiet! That was a long time ago and things have changed since then. TRSDOS has been improved and most of it works, but I've never used it since as NEWDOS+ was so much better. Now there are NEWDOS80, LDOS, and DOSPLUS, all great improvements on NEWDOS+ (I know there are others, too, but I haven't got them, so somebody else will have to talk about them!).

Obviously, with all these DOS's about, they must offer something TRSDOS hasn't got or they wouldn't sell, especially at £100 or so. So which should you get? This is an attempt to answer that question by comparing the facilities they offer. As I hardly know TRSDOS at all I shan't talk about it except to say that it offers the basic minumum facilities needed to run disk drives and not much else - formatting, backup, copying, a debugging monitor, and the extended Basic commands listed in the TRSDOS manual. Some of these facilities are infuriatingly restricted by the Tandy rules (i.e."you don't need it so we'll make it impossible"). Maybe I'm bigoted.

Throughout these notes, I am talking about MODEL 1 only, using NEWDOS80 version 2.0, LDOS 5.1.3, or DOSPLUS 3.5, which are the latest versions I have of these three. Earlier versions have fewer facilities, the most significant being that NEWDOS 80 vers 1.0 will not handle double density at all.

FORMATS.

All three DOS will support the standard 35 track or 40 track single density single sided format used by TRSDOS. This forms an essential means of communication between systems. LDOS and DOSPLUS have automatic density recognition, NEWDOS does not, you have to tell it what to expect in each system, using the PDRIVE command.

Double density is supported by all three DOS's, but NEWDOS uses a different system from the others. A double density disk has 18 sectors per track per side (it's really 1.8 density), so that the standard 5 sectors per granule, 2 granules per track has to be altered. LDOS and DOSPLUS use 6 sectors per granule, 3 granules per track (except Dosplus 3.4 which used 3s/g, 6g/t) but NEWDOS sticks to 5 sectors/granule and invents the "lump", which is user defined but usually 2 grans/lump. The big difference is that a lump can be partly on one track and partly on another. This means that apart from track 0, no file ever starts at the beginning of a track, which is very confusing if you are trying to find your way around the disk; the DOS does this faultlessly and it need never worry you unless you want to go in for direct sector access or want to read a NEWDOS DD disk with LDOS or DOSPLUS - which you can't do. Both LDOS and DOSPLUS appear to read each others DD disks without difficulty, except that the DOSPLUS directory is 2 granules in length and the LDOS one 4 granules. Reading an LDOS directory with DOSPLUS, you don't get the last two granules displayed. With NEWDOS you can say how long you want the directory to be when you format the disk.

With double density, there are complications for the system disk, since to boot the disk from cold you have to use ROM routines, which are designed for single density. So track 0 of the system disk has to be single density, and is used solely for booting. NEWDOS needs to be told, and DOSPLUS finds out automatically, whether a disk has a single density boot track. LDOS has no facility for this at all, and you have to buy a a special program called SOLE to reformat track 0 and put the extra information on it. I find this a very fiddly program to use, but the only alternative is to use a single density disk in the system position.

DOUBLE DENSITY FORMAT.

Whereas single density disks after formatting have all words filled with "E5E5", double density formats vary. By using a more "difficult" format byte and checking its correctness on verifying, a more reliable disk can be obtained which is less likely to give parity or CRC errors later. Newdos 80 gives the choice of E5E5, 5B5B, or 6D6B, which are increasingly "difficult"; but, on finding a fault it rejects the whole diskette. In practice I find this means I have to use E5E5, and I get a lot of parity errors on the higher tracks on the reverse of the disk. LDOS uses 6D6B, but locks out the faulty track only (all 36 sectors on a DD, DS diskette). DOSPLUS uses 6D6B also, but locks out only the faulty granules. This seems the best compromise between wasting disk space and unreliability.

To use Double Density, you must,of course have extra hardware - I use the LNW doubler, but there are also the Percom and Aerocomp doublers, as well as the Radio Shack one which is, as far as I know, not compatible with the others unless patches are used.

All three DOS support double sided disks and use the same structure of 36 sectors per track (18 each side), but with LDOS you have to use an additional program (provided) to run double sided disks.

To summarize on formats, Single Density is standard and fully interchangeable between all three. Double Density is anything but! Each works very well on its own, but you have to buy an additional programme to use DD on an LDOS system disk.

SYSTEM CONFIGURATION.

This covers telling the DOS what constitutes the whole computer system, eg how many drives, how much memory. It varies pretty widely between DOS's.

NEWDOS is by far the simplest. Two commands are used, SYSTEM and PDRIVE. SYSTEM provides a list of 36 options that are either defined as Yes/No switches, or as a numerical quantity. These include memory size, how many drives in the system, which directory is displayed when DIR without a drive no is entered. A particularly useful option is which drive the system will first attempt to put a new file on; by specifying drive 1, the system drive (0) is in effect protected against having unwanted files written to it by mistake. Switch options include Run-Only mode, which prevents operator intervention or listing of programs, enabling/disabling of password protection, blinking cursor, key repeat, break key, debug, screen print, and many others. Options selected by SYSTEM are recorded on the system disk and come into force immediately the disk is rebooted. PDRIVE performs a similar function for disk drive parameters, enabling you to specify for each drive just what sort of disk is to be expected in it. A number of spare specifications are also stored and can be called in en bloc to save having to type in all the individual parameters.

LDOS and DOSPLUS differ from NEWDOS in that the peripheral drivers (i.e. the sections of the DOS that control the printer, video display, and disk drives) are not a fixed part of the DOS and embedded in it. Instead, they are detached and located in high memory where they can be altered if desired. This gives these systems more flexibility to accept alternative peripherals, and to control them in special ways, e.g. by filtering out unwanted codes. Driver programs are supplied with both DOS's for different peripherals and may be loaded with various parameters set as desired; cursor character, blink rate, printer margins and number of lines per page may be permanently set in this way.

With LDOS, the drivers and parameters, once set, are saved in a disk file referred to as the configuration file. This file is loaded automatically as part of the boot procedure unless you press <CLEAR> to prevent this.

With DOSPLUS, the system as a whole is very much more flexible; you can prepare any number of configuration files for different purposes and load the particular one you need for the job in hand, using the AUTO command if required. As a simple example, if you are programming in Basic, you may want an automatic left margin on all your listings; When using a word processor program, you'll probably want to use that to define its own left and right margins. Both can be achieved by having two different configuration files.

Both LDOS and DOSPLUS allow you to Write-Protect a Drive with a software instruction. When this is done it is write-protected whatever disk you put in it. In LDOS it is one of the parameters for the SYSTEM instruction, in DOSPLUS the CONFIG instruction is used. With LDOS, having write protected your system drive, it takes effect immediately so that you can't save the configuration file and the only way to get it to boot up write protected is to ZAP the disk itself - they don't tell you how to but its not too difficult to work out.

With DOSPLUS there is an easier way which is derived from a remarkably flexible configuration system for the disk drives. There are 8 drives allowed in the drive table, occupying slots 0 to 7. Slots 0 to 3 may be allocated to floppies, and 4 to 7 to hard drives. You may designate any floppy drive to any slot, i.e. it is quite in order to put drive 1 into slot 0 and drive 0 into slot 1. If you do this drive one becomes the system drive. You may even assign 2 slots to one physical drive, which may sound crazy, but it isn't if you consider the following arrangement of a 2- drive system:

Slot	Drive	No of sides	Write-Protect
$0	0	2	Yes
$1	1	2	No
$2	1	1	No
$3	0	2	No

With this arrangement, the system drive :0 is always write protected, but if you really want to write to it all you have to do is to write the file to drive :3 - this is the same drive but it's not write protected. Much easier than putting on and taking off sticky write-protect tabs! I also use this system to cover both single and double sided disks, which DOSPLUS doesn't recognise automatically. Another small feature of the DOSPLUS configuration system is that you can change the name of any drive, calling them :A, :B, etc. This is quite a useful idea if your fingers have a habit of hitting :1 without thinking.

One further feature of DOSPLUS comes under configuration, and this is the use of a "file driver". Using this device you may designate a file on any drive to be a "disk". For example, drive :A in my system is not a mechanical drive at all, but is a file called LIBA/DAT on one of my disks. It is a library of commonly used Basic subroutines in ASC format ready to merge. Drive :A, although it is only a file on a particular floppy disk, can be accessed in just the same way as any other drive. It has a directory, can be write protected even tho' the rest of the disk is not (but not vice versa). If I want I can have drives :B, :C, and :D or X , Y, & Z. These file-drives can occupy a floppy slot (0 - 3) or a hard- drive slot. Mine is in slot 4. A great advantage of file drives is that they allocate space by sectors rather than granules, and are thus very economical for use with short subroutines or similar files. The directory can hold up to 48 files. It is a rather similar system to the Partitioned Data Set system sold by MISOSYS for use with LDOS, but much more flexible, and of course it comes free. Molimerx' lists now include what sounds like a similar system for LDOS, at an additional cost of just over £75, which seems rather a lot.

DEBUG.

DEBUG is the monitor/debugging program that comes with all DOS's. DOSPLUS has only the simple DEBUG as supplied with TRSDOS - as far as I can see it is identical. It works, and is adequate, but I don't like it; to use it you must decide in advance and load it with the DOS command DEBUG. Nothing then happens until either you press Break or try to run any ../CMD program, when you enter the debug program instead; personally I find both these occasions inappropriate. It has no disk access or search facility, and can only be entered when the break key would be active anyway.

LDOS has exactly the same system, but with an extended mode which does give disk access and a search mode (but you can only search for 1 byte or a two byte pair, which is rarely enough). The restrictions on loading and entry are the same, only worse, as you have to decide before you need to call it whether you want the ordinary or extended debug.

NEWDOS is quite different. Unless you have previously disabled it with the SYSTEM command, DEBUG is always available, and is obtained by pressing the 123 keys simultaneously. The display gives more or less the same information as the others, but in a different format which I prefer, although many may not. It does have disk access and memory search facilities, in this case the search is for up to 4 bytes - adequate for nearly all purposes. If you enter DEBUG you can look at all the registers or memory as you please, and by typing G return to the program you were in (with a breakpoint if necessary). This doesn't always seem to work with the others. One major limitation is that you cannot Go or Inch or Call to any address below 5200H, which is irritating. Otherwise I find NEWDOS's debug superb for debugging machine language programs; the ability to enter it (or not enter it) at will makes it a firm favourite of mine.

One disadvantage caused by NEWDOS' debug entry method, which is presumably interrupt driven, is a very inaccurate system clock. It can lose minutes in an hour, and is a strong case for an external real- time clock. By comparison, LDOS keeps superb time and never seems to lose a second. I haven't really studied DOSPLUS' timekeeping (I very rarely use the facility anyway).

PASSWORDS.

Password encoding and decoding follows the TRSDOS pattern, but there are differences. NEWDOS has as one of its SYSTEM parameters the facility to turn password protection on or off. With protection off, all the passwords remain unchanged, but don't do anything and may be ignored. Passwords for the various files supplied with the system are not disclosed. LDOS does not allow disabling of the password protection, but tells you all the system file passwords in the manual. DOSPLUS is similar, but makes all the passwords the same as the file extension so that you never need to look them up. Additionally, the Disk master password has a different function and is used as a master key to unlock any password on the disk. DOSPLUS accepts that the main purpose of these passwords is to prevent you erasing a file by mistake. Of the three, I like the NEWDOS approach best.

COPY and BACKUP.

COPY is a library function on all three DOS's. NEWDOS's copy is far superior to the others in speed, flexibility, and ease of use - it will copy virtually anything (except non- standard and protected formats) to anything. Simple copies are really simple, but some of the more complex ones need reference to the manual as there are up to 30 optional parameters. Copying with a single drive is particularly nice, the command being COPY 1 (or 0) filespec1 filespec2; this means that drive 1 is to be used for the copy; prompts are issued to insert the source disk and then the destination disk, and no other disk swops are required. Copies between disks of totally

different format are no problem. A separate backup program is not provided, being covered by COPY 0 1 or COPY 1 1.

LDOS' copy is more difficult to use, but gets there in the end with some restrictions. A separate backup utility is proved which will backup a disk even if you don't know the passwords; this is not possible with COPY.

DOSPLUS' copy is the weakest of all - a single drive copy of one file requires about 8 disk swops and is very tedious. I had to write to the authors to find how to copy a single density disk to a double density one. The answer is to give one drive two different names, set one to double and the other to single density and then copy between them (even though they are both the same physical drive!). BACKUP will only do mirror- image backups. This can be a problem with my double density double sided drives which are Prone to having the odd granule locked out during format: unless the available tracks match exactly, it won't backup and you have to revert to copying file by file, which takes an age.

FILESPECS.

Different degrees of flexibility are offered with file-specs. NEWDOS allows the use of /ext as a parameter for DIR and COPY. When this is used only files with the extension quoted are listed or copied.

Both LDOS and DOSPLUS have extensive "wildcard" facilities. A command such as DIR B???????/??? (details differ) will display a directory of all files beginning with B, etc. DOSPLUS gives much greater flexibility than LDOS in the use of wild- cards, and also permits numbers and £,$,%,&,+,<,> to be used anywhere in filespecs: "12DATA@@/9JA" is quite valid. Using these, one can have files that other DOS's can't read. What seems to me to be an odd feature of LDOS is that you are allowed to backup a whole disk without using passwords, but to copy the individual files (if protected) you have to use them; I don't see the logic of this.

DEVICE INTERCHANGEABILITY.

This has been discussed frequently in past news letters so it hardly needs explaining. Briefly it means that all output devices (printer, VDU, RS232, etc) can be swopped around at will. Output normally directed to the VDU can be diverted to the printer or RS232, etc, etc. The same goes for input devices. As well as a straight diversion or "route-ing", output can also be repeated to another device, so that both printer and VDU, for example, get the output which would normally go just to the VDU. Usually called linking.

NEWDOS has very limited ROUTE commands. "ROUTE DO,PR" will divert the display output to the printer; "ROUTE DO,DO,PR" will send it to both display and printer. ROUTE PR,DO will send the printer output to the display. There is also the ability to route any output to a location in memory, but beyond defining the command, the manual is not helpful. The route command may be used from Basic by using "CMD"ROUTE ....". This is a very useful way of giving a basic program an option of output to screen or printer, as it avoids having to duplicate all the PRINT commands with LPRINT ones.

LDOS has much more powerful ROUTE and LINK commands, in that you may route an output to a disk file, or take input from a disk file (quite apart from the normal disk I/O). On the other hand the route & link commands may not be used from Basic via CMD"..., which is very frustrating. DOSPLUS (3.5), as befits the most recently updated DOS, goes even further and is almost bewilderingly flexible. The actual command line is used to imply routeing. DIR :1 will give the normal directory display: DIR :1,@PR will send it to the printer instead of the screen. DIR :1,X will create a file called X and send it to that. DOSPLUS uses CAT :1 instead of DIR :1, and the DIR :1 command is equivalent to DIR :1 (A) in TRSDOS and DIR 1 A in NEWDOS;

it took me quite a long time to fathom why I sometimes didn't get any directory display until I realised that using DIR :1,A was creating little files called A on all my disks with a copy of the directory on them!! One soon gets used to it and it is a very flexible system indeed. FORCE and JOIN are used instead of ROUTE and LINK, and both can be executed from Basic using CMD"... The COPY command is also linked in with device interchangeability: COPY @KI @PR will allow you to use your printer as a typewriter and type direct to it from the keyboard; COPY @KI XYZ will let you type directly into a file called XYZ. The facilities are not outstandingly useful, but the fact that the system is so flexible and allows you to do what you want is something I like. A small feature of DOSPLUS is that you can type more that one DOS command on one line, separated by semi-colons, and it will execute them one after another; this is particularly useful with Auto-ed commands on Booting up - you can load several files and then go into Basic, etc. Also useful with CMD".... from Basic. Another DOSPLUS feature - "auto-ed" commands can be made invisible to the operator, as well as un-breakable. NEWDOS has this feature, but I've never got it to work.

Another unique feature, this time for LDOS, is the type-ahead buffer. LDOS allows you to go on typing even though it is busy reading a disk or printing. Keystrokes never get lost (and sometimes come up rather embarassingly later when the computer has finished what it was doing!) It you are clever enough to type blind, you can use this like DOSPLUS's semicolon facility to tell the DOS to do a succession of operations.

SCREEN PRINT.

All three DOS provide the facility to dump a copy of the screen to the printer. LDOS & DOSPLUS will do this only when the keyboard is awaiting input. NEWDOS uses an interrupt system, and by pressing JKL together at (almost) any time, a copy of the screen goes to the printer; This will work even if the computer is locked in a loop or is scrolling. NEWDOS80 version 2.0 cannot do this from DEBUG displays, but version 1.0 could. A great pity, as I found this my main use for JCL.

MINIDOS.

NEWDOS uses a further trio of keys, DF6 to provide an instant jump back into a restricted DOS. This will do most things in exactly the same way as the DOS does. The exceptions are functions which use a lot of memory - COPY and FORMAT, although there is a minidos copy which works sector by sector and sends the disk drives berserk. From Minidos one can return to whatever program one started from, using MDRET, or to DOS using MDBORT. LDOS has a very inferior version which it calls Minidos; this will do one or two things like display a directory or free sectors or toggle the clock display. It is more like a single-key version of CMD"DIR, etc, and not very useful at all. DOSPLUS has no similar function, but virtually anything can be done via CMD"...

SPOOLING.

All three DOS's have spooler programs provided. NEWDOS uses temporary files for spooling, so does LDOS, although in a rather different (and easier) way. DOSPLUS (3.5) uses only memory for spooling, although (3.4) gave the option of both. Personally I never use the spooler, as I find the printer activity so distracts me that I'm unable to input information to the keyboard accurately anyway.

Other commands are broadly similar in all three DOS's, and as I am trying to cover differences, I won't go into details.

KEY SUBSTITUTION.

With LDOS and DOSPLUS you get a key substitution (or macro-key) program which enables you to pre-program keys to produce whole phrases. Useful for working with Basic keywords, by pressing <contol>A one can get ASC(in one keystroke, etc, even commands like CMD"DIR :1 can be programmed. LDOS is not easy to use; you have to go through the whole of the alphabet in order to program any key. Also, you can only program the letter keys, not the numbers or punctuation marks. DOSPLUS is easier to use, all you do is use the BUILD command or a word processor to write a text file containing the substitutions in the form B=BASIC, etc. Also, with DOSPLUS you can define a macro key to carry out one substitution, followed by another. For example, using B=BASIC^L will follow BASIC with whatever is already defined for L. Rather like using a subroutine.

THREE DIFFERENT BASICS.

All three basics contain every instruction in TRSDOS basic with some others added. Fairly standard additions are shorthand editing instructions: A = Auto, D = Delete, E = Edit, L = List; A full-stop (.) will list the current line, and a comma will enter the line editor with the current line. Up arrow lists the previous line and down arrow the next line. With some variations, commands will also move to the first line or to the last line. NEWDOS has a particularly nice function- @ will list the next screenful of Basic lines (ending on the last complete line that will fit), and : will list the previous screenful. All these functions only work if they are the first key entered on a line. DOSPLUS, trying as ever to out-do the others, has additional shorthand - G for GOTO, R for RUN, L" for LOAD, S" for SAVE, and K" for KILL. I think this is gilding the lily!.

Whilst on editing, all have their own renumbering commands. NEWDOS is far superior, and is the only renumbering command I have met which actually allows the order of lines to be changed. If you decide a block of lines would be better as a subroutine and should be moved elsewhere in the listing, NEWDOS can do this. The others can't. All the renumbers do a simple check for some syntax errors. In addition to renumbering, NEWDOS and DOSPLUS have the commands DI nnn,mmm and DU nnn,mmm. DI deletes line nnn and inserts it at mmm, DU duplicates line nnn at mmm; neither adjusts GOTOs or GOSUBs as does RENUM.

LDOS BASIC.

LDOS Basic is called LBASIC, and is arranged so that you must type in LBASIC rather than BASIC to run it. If you change the name to BASIC it won't work properly as the overlays go in the wrong place. Apparently there were so many complaints about this that the writers had to introduce a special modification so that if you do enter BASIC it is automatically changed to LBASIC. Seems they got a bit too clever.

There are very few enhancements added to TRSDOS Disk Basic by LBASIC. Most of the section of the manual dealing with LBASIC duplicates or replaces the TRSDOS manual information. There are additional parameters on entry to Basic, to allow you to specify top of memory, blocked file mode (sometimes called variable length files) or not, whether a default extension of /BAS is to be provided, and Hi or Lo cassette baud rate (Model III only).

Some additional CMD" ... functions are provided. As I'm not sure which are extra as far as the Mosel III is concerned, I'll list the lot:
CMD"<dos-command>" -- execute the dos-command & return to basic.
CMD"*" --screen print.
CMD"A" -- abort, return to DOS.
CMD"B","switch" -- enable or disable break key.
CMD"D" -- debugger on with additional switches.
CMD"E" -- returns last error.

CMD"I","dos-command" -- execute dos-command & return to DOS.
CMD"L","filespec" -- loads a machine code program into memory.
CMD"N" -- renumber facility.
CMD"O" -- string array sort, single dimension only.
CMD"P" -- returns printer status.
CMD"R" -- Model I, enable interrupts. Model III, turn on clock.
CMD"S" -- return to DOS
CMD"T" -- Model I, disable interrupts. Model III, turn off clock.
CMD"X" -- cross-reference facility.

New modes for opening sequential files:
"OO" -- open an OLD file for output only (error if no file exists)
"ON" -- open a NEW file for output only (error if file does exist).
"EO" -- as "OO" but to extend a file.
"EN" -- as "ON" but to extend a file.

and for Random files:
"RN" -- open a random file only if it does not exist.
"RO" -- open a random file only if it does exist.
SET EOF -- after GET n,A will make A the last record.

RESTORE nnn -- as the normal RESTORE, but specifies a line number.

The cross-reference facility allows you to say whether the list of references is to go to screen, printer, or a disk file. Also to specify one variable by name, all variables, one line number, or all line numbers. Default is all of both.

LBASIC allows you to single step through a basic program, by holding down Shift-@, which stops the program, and while doing this, pressing the space bar once for each statement to be stepped through.

The error dictionary in the manual is very good, and gives most of the likely reasons for each error message.

DOSPLUS BASIC.

DOSPLUS gives you two basics -- the normal one and TBASIC, which is an abbreviated one designed to save memory, but with the minimum of facitities. All the following remarks apply to DOSPLUS Extended Disk Basic, not to TBASIC.

CMD (without anything after it) is used to return from Basic to DOS ready. A trivial saving in keystrokes which is hardly worth it.! CMD "D","E","R","S","T" are all as for LDOS (except for the Model III variations I mentioned). CMD"M" is a "dynamic variable dump"; what this means is that after a stop or break, using CMD"M" will supply a complete list of the present values of all simple variables in use. Adding ,P will send the list to the printer.

CMD"REF" is the cross-reference listing function. Adding parameters allows you to list all occurences of a single line number, variable, or keyword, or to list all variables and/or all line numbers and/or all keywords. Again, ",P" sends it to the printer.

CMD"SR" is a search and replace function very similar to that found in SCRIPSIT. It makes changing all the PRINTs into LPRINTs childs play. Combined with CMD"REF" this is a very useful tool indeed.

CMD"O" is a very powerful and flexible machine language array sort. Permits sorting any single dimensioned array(s), be they string, integer, or what have you. Ascending or descending sorts, with key arrays and tag arrays. Quite fearsome, and puts LDOS' CMD"O" completely in the shade.

TAB can be used with positions greater than 64 when using LPRINT.

TRON engages single-stepping. Press any key to execute the next statement or <BREAK> to abort. Prints next line to be executed on the screen every time it stops. A nice touch, but a bit confusing if you are trying to debug a display routine as it disorganises it completely.

INPUT@ is a very enhanced version of LINE INPUT. The @ is an obvious clue that it will print the prompt string and "?" anywhere on the screen you want. It also enables you to define the field length, and prints a line of underline characters to show the number of characters that may be input. Optionally it will either ignore all further characters or will return on full field. The type of input may be specified as numeric or alpha-numeric, and if numeric will only accept 0-9, ".","+", or "-". Input is always to a string variable, as for LINEINPUT.

NAME is, to me, the best enhancement of all. If you have a subroutine starting at line 100 in the following form:

```
100 NAME DISPLAY
...
...
... RETURN
```

then you may use GOSUB DISPLAY instead of GOSUB 100. The same applies for GOTO's. Restrictions are: max length of the label 240 chars (!), and the label must not contain any Basic keyword. The latter is quite a serious limitation, as after a while it becomes increasingly difficult to find meaningful labels that do not contain keywords. Nevertheless, a very useful function that makes programming very much easier. So that programs may be transportable, a utility is provided to remove labels and substitute line numbers. This means that you can write your programs the easier way and then convert them for other basics if you wish.

ERROR messages are rather nice: as well as the standard message, the offending statement is displayed on the screen. When you have a 4-line "line" with about 15 statements and conditionals in it this is a boon and leads you straight to the problem, speeding up debugging enormously.

NEWDOS 80 BASIC.

Although NEWDOS 80 pre-dates both the other two, it has a remarkably good Basic with a lot of very good features. I'm not sure whether I have room to list them all, but here goes:

Editing: When a syntax error occurs, instead of entering EDIT mode immediately, NEWDOS 80 reports the error and logs in the error line. If you want to edit the error, press comma and proceed. This makes it more difficult to inadvertently clear the variables that you might want to see to assist in debugging the error. On the same theme, typing a line number alone is not accepted as a way of deleting a line; you MUST type Delete (or D) <line number>.

Entering Basic: much as the other two; "*" recovers the previous program if not already overlaid. Othe parameters give Number of Files, Memory Size, and one line of Basic text to be carried out on entering Basic. This means that you can enter: BASIC, LOAD xxxxxxx/CMD:1, RUN "yyyyyyyy/BAS:1 or suchlike. This line must not have more than 32 characters. Quite complex lines may be used, e.g. (I quote) " 'BASIC,CLEAR3000:A=1:RUN"XXX",V' brings up Basic with 3 (default no) filespecs, sets its high memory value to DOS' current high memory value, performs CLEAR reserving 3000 bytes for the string area, sets variable A equal to 1, loads BASIC program XXX and commences its execution without clearing the variable, thus leaving variable A intact for the program to inspect."

MERGE will merge either an ASCII or a normal packed Basic File, and

allows execution to continue after merging, provided certain rules are followed. Both RUN and LOAD may optionally retain all variables and open file areas by using the format RUN (or LOAD) "<filespec>",V.

REF gives various formats for listing all references to line numbers and variables (but not key words).

CMD" .. has a number of formats:

CMD"C" -- removes all spaces (except those within strings) and REM lines. CMD"C",S removes spaces only, CMD"C",R removes remarks only.

CMD"F=POPS", CMD"F=POPR", CMD"F=POPN" allow various combinations of GOSUB return addresses, and/or FOR-NEXT next loops to be purged from the stack if prematurely exited.

CMD"F=SASZ",nnnn -- change Basic's string area size to nnnn without clearing the variables.

CMD"F=ERASE",u,v,w, .. and CMD"F=KEEP",u,v,w, .. allow you to erase specific variables by name, or to erase all except specific variables while running a program. If the erased variable is within an array te whole array is erased and may then be redimensioned.

CMD"F",DELETE line no1 - line no2 -- allows deleting unwanted lines from a program while it is running. Useful for deleting long initialisation procedures once a program is running to create more variable storage space.

CMD"F=SWAP",v,w -- swaps the value of variable v with that of variable w. Both must be the same type, i.e. both strings, both integers, etc.

CMD"F=SS",<line no> -- turns on single stepping at an optional line number; (CMD"F=SS",N turns it off again)

CMD"O" -- a very complete (and fast) machine language sort using multiple arrays if desired, indirect sort using key arrays, can even be used for multidimensioned arrays if you are clever enough to work it out. Faster and better, I believe, than even the Infinite Basic sorts.

RENEW -- reinstates a program deleted by NEW unles the program area has been re-used.

NEWDOS 80 DISK I/O.

This is NEWDOS 80's strongest point. In addition to sequential and random files as provided by TRSDOS and the others, NEWDOS 80 has two other file types - fixed length record and marked length record files. The system is very complex and the manual devotes 86 pages to it! Really all I can say is that if you want a system that will allow you to PUT a mixture of variable length strings, integers, single and double precision numbers into a random access file with one PUT, and get them back again with one GET, this is the system for you. Just about any data format can be dealt with -- really magnificent (if you can work it all out!).

After all that -- WHICH DOS ??

They are all far, far better that TRSDOS or CPM, and all excellent. My favourite for rock-solid mistake-free use has to be NEWDOS 80, but I hate its silly format with lumps. LDOS is reliable but restrictive and I only use it with EDAS, which I find the best assembler; if you include the necessary utilities it's expensive. DOSPLUS is the most flexible and versatile of the lot -- almost dangerously so as you can do virtually anything, including a lot of damage!! If you can do without complex disk I/O then DOSPLUS' disk basic has a lot going for it.

MILTON KEYNES WORKSHOP

This is Just a short note of thanks for the generosity shown by the members who contributed to the 'Whip Round' organised by Tim Bullock to replace the box of diskettes that disappeared from my desk during the Milton Keynes Weekend.

The Weekend in all other repects was very enjoyable, a lot of information, as always, passed around between members.

The Hardware sessions gave several members the incentive to try something for themselves. I found Roger Hamlett's print buffer board very well laid out & will be getting one shortly so that I can assemble it.

I would have liked to have gone to the Swindon meeting but it was too soon after this one for me to be able raise the cash.

The differences between the US version & the European Model 100 become more apparent as programs published in 80 Micro are tried out, two in particular in the March edition that refer to the start of the Directory, the figure of 63842 quoted in both has to be changed on my machine to 63849 to find the start of the Directory.I had severe trouble trying some of the 'PEKE & POKE' sugestions in the December '83 edition, on one occasion I had to switch everything off, remove the batteries & wait till the internal battery had run down before the machine would respond to any type of input.

The only things that worked were the calls to 32, no beep at 30306, the machine had to be reset to continue.

E.C Kilpatrick,
3a Gainsborough St,
Sudbury,
Suffolk. CO10 6ET
Phone 0787 79504.

PRINTER CODES

I may be about to indulge in a tutorial on egg-sucking for many of you, but I am sure that there are quite a few readers out there who are not aware that their printer is capable of telling them what it is thinking about when it decides not to obey an LPRINT instruction.

I stumbled on this information more or less by chance the other day. I was trying to remember the memory location to PEEK at to find out whether the printer is ready prior to an LPRINT, as I wanted a BASIC program to check this and inform the user if all was not well before hanging itself up trying to output to a printer which was off-line.

At first I tried the section on LPRINT in the Level II Manual, but there was no reference to the address. In desparation I turned to the Memory Map (which I know very little about). On the next page (D/2) I found a list of Important Addresses and looking through them I noticed one labelled as the LINE PRINTER ADDRESS. This looked hopeful.

The Line Printer Address is 14312 Decimal. I powered up my system (48K Level II Model I with Floppy Tape connected to Oki Microline 80 printer via Tandy keyboard to printer interface cable), and started PEEKING location 14312. To my delight, different values were returned depending on whether the printer was on or off line. I then started to experiment further. I found more values for when the printer was out of paper, or switched off (or simply not connected at all!), or combinations of these circumstances. I don't know whether these codes vary according to the variety of equipment in use (I know that other Printer Codes do) but the table below shows the values which I obtained. When these are used in a program it looks very impressive to the uninitiated to see the computer tell them, not only that the printer is not ready, but also why. For example the message "PRINTER OUT OF PAPER AND OFF-LINE" would tell an inexperienced operator (and an experienced one who is suffering from a bout of late night computing) exactly what is wrong and make the program very user-friendly.

Values obtained from PEEK(14312):

255 = Printer Switched Off (or Not Connected)
159 = Printer Off-Line
239 = Out of Paper
207 = Printer Off-Line & Out of Paper
63 = Printer Ready

I hope that these codes prove useful, and I hope that if anyone discovers some more, or finds that the codes do vary from printer to printer, then they will publish them so that we don't all sit around inventing wheels. That's all for now, enjoy your eggs!

Adrian C. Hancock
30, Lower Street, Noak Bridge, Basildon, Essex. SS15 4BB.
Telephone: Basildon (0268) 286893

REPLACEMENT RIBBONS FOR 779 PRINTER

I recently required a new ribbon for my Centronics 779. Tandy was asking £20 for a pack of three. As I required them urgently, I 'phoned:-

BCCOMPCO,
800 South 17,
Box 246,
Summersville,
MO 65571,
USA.
Tel: 0101 417 932-4196

an American firm specialising in ribbons, who advertise in 80 Micro. I received the new pack of three ribbons ($12 + $1.80 p & p) five days later! I cannot praise their service too highly.

Any members requiring ribbons for their printer - they cover most makes of machines - could do a lot worse than trying the service this firm offers.

PC Inglis,
14 Arbour Lane,
Springfield,
Chelmsford,
Essex.
Tel: Chelmsford 67482

Transfer Program - Model 100 to Model 3 Disc

The machines RS-232 ports must be connected together by a Null modem cable.

To transfer a program from the 100 to the 3 load DOS on the 3 with the COM/CMD program on it, type COM I, the file name & press ENTER, then on the 100, having first loaded the file into memory, type SAVE"COM:88E1E & press ENTER this will send a Model 100 file through the RS-232 port & save it on the Model 3 disc.The READY prompts will appear on both machines when the transfer is complete.

To transfer a file the other way, type LOAD"COM:88E1E on the 100 & press ENTER then on the 3 in DOS type COM O (not zero), the file name & press ENTER.The READY prompts will appear on both machines when the transfer is complete.

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```
00100 ;COMXTXT/SRC   COM/CMD
00110 ;FILE TRANSFER FROM MDL1 TO MDL 100
00120 ;USING RS232 LINK
00180          ORG     7000H
00200 ;------  PROGRAM PARAMETERS
00210 ; RS232 COM STATS
00220 ;      9600 BAUD, 8 BIT WORD.
00230 ;      PARITY ENABLED
00240 ;      ONE STOP BIT
00250 ;      XON/XOFF ON SEND TO
00260 ;      MODEL 100 ONLY
00270 ;   ON MODEL 100 USE COM
00280 ;   STATS OF  88E1E
00300 ;   TO OUTPUT A DISC FILE
00310 ;   TYPE: COM O FILENAME
00320 ;
00330 ;   TO INPUT A 100 FILE
00340 ;   TYPE: COM I FILENAME
00360 BAUDS    EQU     0EEH
00370 CONFG    EQU     0E5H
00380 XON      EQU     11H
00390 XOFF     EQU     13H
00400 HIMEM    EQU     404AH
00410 CMD      EQU     4318H
00420 FUNCT    EQU     CMD+4
00430 FILE     EQU     CMD+6
00440 QUIT     EQU     402DH
00450 DINIT    EQU     4420H
00460 DOPEN    EQU     4424H
00470 DREAD    EQU     4436H
00480 DWRITE   EQU     4439H
00490 DCLOSE   EQU     4428H
00500 VIDEO    EQU     33H
00510 ;------  RESET THE UART  FIRST
00520 START    CALL    RSRST
00530          LD      DE,DCB
00540          LD      HL,FILE
00550          LD      BC,23
00560          LDIR
```

```
00570 ;------  SELECT  COM <I>N OR  COM <O>UT
00580          LD      A,(FUNCT)
00590          CP      'I'
00600          JR      Z,GETCOM
00610          CP      'O'
00620          JP      NZ,ERCMD
00630 ;------  PUT THE DISC FILE IN STORAGE
00640 GETDSK   LD      DE,DCB
00650          LD      BC,0000H
00660          PUSH    BC
00670          LD      HL,BUFFER
00680          CALL    DOPEN
00690          JP      NZ,EROPEN
00700          LD      DE,STORAG
00710          POP     BC
00720 READLP   PUSH    BC
00730          PUSH    DE
00740          LD      DE,DCB
00750          CALL    DREAD
00760          CP      1CH
00770          JR      Z,RCLOSE
00780          CP      1DH
00790          JR      Z,RCLOSE
00800          OR      A
00810          JP      NZ,ERREAD
00820          POP     DE
00830          LD      HL,BUFFER
00840          LD      BC,256
00850          LDIR
00860          POP     BC
00870          INC     C
00880          LD      A,(HIMEM)
00890          CP      D
00900          JP      Z,TOOBIG
00910          JR      READLP
00920 RCLOSE   LD      DE,DCB
00930 ;------  PUT FILE LENGTH IN BC
00940          LD      A,(DCB+12)
00950          LD      B,A
00960          LD      A,(DCB+8)
00970          LD      C,A
00980          CALL    DCLOSE
00990          JP      NZ,ERREAD
01000 ;------  SEND FILE TO RS232 COM PORT
01010 PUTCOM   LD      HL,STORAG
01020 COMOUT   CALL    RSIN
01030          CP      XOFF
01040          JR      NZ,COMO
01050 XXON     CALL    RSIN
01060          CP      XON
01070          JR      NZ,XXON
01080 COMO     LD      A,(HL)
01090          CALL    RSOUT
01100          INC     HL
01110          DEC     BC
01120          LD      A,C
01130          CP      0
01140          JR      NZ,COMOUT
01150          LD      A,B
01160          CP      1
01170          JR      NZ,COMOUT
01180          LD      A,01AH
01190          CALL    RSOUT
01200          JP      QUIT
```

```
01210 ;------  GET FILE FROM RS232 COM PORT
01220 GETCOM   CALL     READY
01230          LD       BC,0000H
01240          LD       HL,STORAG
01250 COMIN    CALL     RSIN
01260          OR       A
01270          JR       NZ,DATAIN
01280          JR       COMIN
01290 DATAIN   CP       0AH
01300          JR       Z,COMIN
01310          CP       01AH
01320          JR       Z,EOF
01330          LD       (HL),A
01340          INC      HL
01350          INC      BC
01360          JR       COMIN
01370 EOF      PUSH     BC
01380 ;------  PUT THE FILE ON THE DISC
01390 WDISK    LD       DE,DCB
01400          LD       HL,BUFFER
01410          LD       BC,0000H
01420          CALL     DINIT
01430          JP       NZ,ERWRIT
01440          LD       HL,STORAG
01450          POP      BC
01460 WRITLP   PUSH     BC
01470          LD       DE,BUFFER
01480          LD       BC,256
01490          LDIR
01500          POP      BC
01510          PUSH     BC
01520          PUSH     HL
01530          LD       HL,BUFFER
01540          LD       DE,DCB
01550          CALL     DWRITE
01560          OR       A
01570          JP       NZ,ERWRIT
01580          POP      HL
01590          POP      BC
01600          DEC      B
01610          LD       A,B
01620          CP       255
01630          JP       NZ,WRITLP
01640 WCLOSE   LD       DE,DCB
01650          LD       A,C
01660          LD       (DCB+8),A
01670          CALL     DCLOSE
01680          JP       NZ,ERWRIT
01690          JP       QUIT
01700 ;------  DISPLAY MESSAGES
01710 READY    LD       HL,RDY
01720 DSPLY    LD       A,(HL)
01730          OR       A
01740          RET      Z
01750          CALL     VIDEO
01760          INC      HL
01770          JR       DSPLY
01780 ;
01790 ERCMD    LD       HL,ERR0
01800          JR       DISPLY
01810 EROPEN   LD       HL,ERR1
01820          JR       DISPLY
01830 ERREAD   LD       DE,DCB
01840          CALL     DCLOSE
```

```
01850           LD      HL,ERR2
01860           JR      DISPLY
01870 ERWRIT    LD      DE,DCB
01880           CALL    DCLOSE
01890           LD      HL,ERR3
01900           JR      DISPLY
01910 TOOBIG    LD      DE,DCB
01920           CALL    DCLOSE
01930           LD      HL,TOBIG
01940 DISPLY    LD      A,(HL)
01950           OR      A
01960           JP      Z,QUIT
01970           CALL    VIDEO
01980           INC     HL
01990           JR      DISPLY
02000 ;
02010 ERR0      DEFM    '       '
02020           DEFM    '* COMMAND LINE ERROR *'
02030           DEFB    0
02040 ERR1      DEFM    '       '
02050           DEFM    '* FILE NOT FOUND *'
02060           DEFB    0
02070 ERR2      DEFM    '       '
02080           DEFM    '* SOURCE ERROR *'
02090           DEFB    0
02100 ERR3      DEFM    '       '
02110           DEFM    '* DESTINATION ERROR *'
02120           DEFB    0
02130 TOBIG     DEFM    '       '
02140           DEFM    '* FILE TOO BIG *'
02150           DEFB    0
02160 RDY       DEFM    '       '
02170           DEFM    '* READY *'
02180           DEFB    0
02190 ;
02200 ;------  THE RS232 COM PORT
02210 RESET     EQU     0E8H
02220 CONFIG    EQU     0E9H
02230 CONTRL    EQU     0EAH
02240 DATA      EQU     0EBH
02250 ;
02260 RSOUT     PUSH    BC
02270           LD      C,A
02280 SENT      IN      A,(CONTRL)
02290           BIT     6,A
02300           JR      Z,SENT
02310           LD      A,C
02320           OUT     (DATA),A
02330           POP     BC
02340           RET
02350 ;
02360 RSIN      IN      A,(CONTRL)
02370           BIT     7,A
02380           JR      Z,NODATA
02390           AND     38H
02400           JP      NZ,ERREAD
02410           IN      A,(DATA)
02420           RET
02430 NODATA    XOR     A
02440           RET
02450 ;
02460 RSRST     OUT     (RESET),A
02470           LD      A,CONFG
02480           OUT     (CONTRL),A
02490           LD      A,BAUDS
02500           OUT     (CONFIG),A
02510           XOR     A
02520           RET
02530 ;
02540 DCB       DEFS    32
02550 BUFFER    DEFS    256
02560 STORAG    EQU     $
02570           END     START
```

```
                        ;DEMO/TUT  program to:
                        ;         Display a Menu
                        ;           Make choice and validate
                        ;           Input data (15char max.)
                        ;           Display data
                        ;           Sort Data
                        ;           Write data to disk file
                        ;           Return to Zen
                        ;
            ORG 9000H
           LOAD 9000H   ;        for CMD operation,
                        ;          change LOAD to EXEC
REENTRY:EQU 56D4H       ;          Zen re-entry point.
                        ;          NOTE: This line omitted
                        ;          in CMDfile version.
Q:EQU 129               ;129=graphics block for underline.

DEMO:LD HL,OPTIONS
     CALL DISPLAY
     CALL GETKEY
     CALL VIDEOUT ;now that we've got valid char.
     LD IX,JUMPTABLE
JUMPLOOP:BIT 7,(IX+0);test for end of jump table
     JR NZ,DEMO
     CP(IX+0)       ;test for character match
     LD L,(IX+1)    ;  )store the next two bytes
     LD H,(IX+2)    ;  )of Data address.
     INC IX         ;>   Increment by three
     INC IX         ;>   as jumptable entries
     INC IX         ;>   are each 3 bytes long.
     JR NZ,JUMPLOOP ;action on result of test on char
                    ;           not matching.
     JP(HL)         ; We have a character match,
                    ; HL points to address - GO!
                    ;  end of the control program.
;=============================================================
JUMPTABLE:DB'1'     ; test char - is it a "1"?
     DW DATAINP     ; the address of match, via Label

     DB'2'          ;          ditto
     DW DISPLDAT    ;        ditto
     DB'3'          ;        ditto
     DW SORTD       ;        ditto
     DB'4'          ;        ditto
     DW WRITED      ;        ditto
     DB'5'          ;        ditto
     DW BACKTOZEN   ;        ditto
                    ;this would be BACKTODOS for CMD vn

     DB 80H         ;80H = 128 Dec, which is an
                    ; impossible keyboard entry, and is
                    ; therefore used to indicate the
                    ; End Of Jumptable.
BACKTOZEN:LD A,13   ;13 = <CR>
                    ;(BACKTODOS for CMDfile version)
     CALL VIDEOUT
     CALL REENTRY   ;change to JP 402D for CMD vsn
;=============================================================
```

```
                        ;
                        ;Screen Menu Message routine.
                        ;Q= Graphics Block to be used.
                        ;28 = Home Cursor command.
                        ;31= Erase to End of Screen.
                        ;14 = Cursor On command.
                        ;0= End of Message indicator.
                        ;10 = Linefeed command.
                        ;
OPTIONS:DB 28,31,14
        DB'Options Available',10
        DB Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,Q,10,10
        DB'<1>  Input Data',10
        DB'<2>  Display Data',10
        DB'<3>  Sort the Data',10
        DB'<4>  Write to Disk',10
        DB'<5>  Return to Zen',10,'? ',0;DOS for CMD
PROMPT:DB 10,"Enter Name : ",0
FPRMT:DB 10,"Enter filespec : ",0
MESS2:DB 28,31,14,"Listing of Names",10,0
                        ;
;=======================================================
                        ;
                        ;subroutine to test for,
                        ; and get, Keypress.
GETKEY:CALL KEYBOARD
        OR A
        JR Z,GETKEY
        RET
KEYBOARD:PUSH DE
        PUSH IY
        CALL 2BH        ;ROM scan keyboard routine
        POP IY
        POP DE
        RET
DISPLAY:LD A,(HL)        ;     test for
        INC HL          ;     end of
        OR A            ;     file
        RET Z           ;     and quit if so
        CALL VIDEOUT    ;     Print on screen
        CP 13           ;test for end of record (CR)

        RET Z
       JR DISPLAY
;=======================================================
                        ;
                        ;Display routine:
                        ;
VIDEOUT:PUSH DE
        PUSH IY
        CALL 33H        ;display contents of the
                        ; A register on the screen.
        POP IY
        POP DE
        RET
;=======================================================
```

```
                        ;
                        ;Input routine:
                        ;
DATAINP:LD HL,PROMPT
        CALL DISPLAY
        LD HL,(EOF)     ;padding routine for use
                        ; in ASCII
        LD B,16         ;file creation for WP.
                        ; B reg value used in DJNZ.
        CALL PAD
        LD HL,(EOF)
        LD B,15         ;allows maximum 15-byte
                        ; entry from the keyboard
        CALL 40H        ;PLUS <CR>, and ensures
                        ; that buffer is filled.
        LD HL,(EOF)
        LD A,(HL)       ;test for terminator
                        ; on a single record.
        CP 0DH          ; ODH = 13 decimal! ( CR )
        JP NZ,DATA2
        LD (HL),0       ;use 0 as "end-of-file"
                        ;marker when the file is used
                        ; within a word-processor.
        JP DEMO
DATA2:LD BC,16
        OR A            ; reset the carry flag.
        ADD HL,BC       ; point HL to start of
                        ; the next record.
        LD(EOF),HL      ; change EOF marker.
        JR DATAINP
PAD:LD(HL)," "          ; routine to fill
        INC HL          ; balance of B register
        DJNZ PAD        ;with spaces, equiv to LSET.

        RET
DISPLDAT:LD HL,MESS2 ; display message.
        CALL DISPLAY
        LD HL,SOF
DISP2:LD A,(HL)
        OR A            ;test routine for completion
                        ;of file - is it a zero byte?

        JR NZ,DISP3
        CALL GETKEY     ; pause
        JP DEMO
DISP3:PUSH HL
        CALL DISPLAY
        POP HL
        LD BC,16        ; display data
        OR A
        ADD HL,BC
        JR DISP2
                        ;
SORTD:LD HL,SOF
        LD A,(HL)       ;test routine
        OR A            ;to find if
        JP Z,DEMO       ;file is empty
        LD C,16         ; initialise C register
```

```
LOOP:LD HL,SOF          ;start at beginning of data

     XOR A              ;zero A register &
                        ;clear all flags.
     LD(SFLAG),A        ;zero sort-flag control.
     PUSH HL            ;temporary store.
     LD DE,16           ;initiate increment step.
     ADD HL,DE          ;HL now pointed to next record

     EX DE,HL           ;swap so that DE
                        ;points to next record.
     POP HL             ;HL now points to previous
                        ;record.
                        ;
LOOP1:LD A,(DE)         ;store (DE) character
                        ;in the A register.
     OR A               ;test for EOF - NZ is
                        ; not at end.
     JR NZ,CHECK
     LD A,(SFLAG)       ;test no change in sort
     OR A               ;flag - no change means that
                        ;sort is finished.
     JR NZ,LOOP         ;not finished so
                        ;back to LOOP.
     JP DEMO            ;  F I N I S H E D !
                        ;
                        ;
;=======================================================
;The following sort routine sorts in ascending order -
;to change to descending, swap over the (DE) and (HL) in
;the first two lines, and change JR C,SWAP to JR NC,SWAP.
                        ;
CHECK:LD B,C            ;Init'lse B for use in DJNZ

CHECK1:LD A,(DE)        ;put (DE) char into A.
     CP(HL)             ;compare (HL) char with A.
     JR C,SWAP          ;HL>DE = carry condition.
                        ; DE-HL Swap.
     JR NZ,NOSWAP       ;HL<>DE = must be greater
                        ;than DE so no swap.
     INC HL             ;bump pointers.
     INC DE             ;   "      "
     DJNZ CHECK1        ;loop 'til 16 compares done.

     JR LOOP1           ;go to next pairing.
NOSWAP:INC HL           ; merely bump up the pointers
                        ;for residue of B register.
     INC DE             ;
     DJNZ NOSWAP        ;
     JR LOOP1
```

```
SWAP:LD A,(DE)          ;put (DE) into A.
     PUSH AF            ;store temporily (we're only )
                        ;really interested in A).
     LD A,(HL)          ;put (HL) into A       and
     LD(DE),A           ;put A into (DE)       Swap
     POP AF             ; restore A.
     LD(HL),A           ;put into (HL) - complete
                        ;the swop.
     INC HL             ;bump pointers.
     INC DE             ;   "       "
     DJNZ.SWAP          ;complete residue of B
                        ;register
     LD A,1             ;) get a change
     LD(SFLAG),A        ;) into Sort Flag.
     JR LOOP1

                        ;
SFLAG:DB 0

                        ;
WRITED:LD HL,FPRMT
     CALL DISPLAY
     LD HL,FCB
     LD B,21            ;max length of
                        ;filename/ext.password.
     CALL 40H           ;keyboard input routine
                        ;for filename.
     LD HL,IOBUFF       ;point HL to buffer.
     LD B,16            ;load B register with LRL.
     LD DE,FCB          ;the FCB MUST contain
                        ;the full filename.
     CALL 4420H         ;doscall to initialise file

     JR NZ,BAD          ;something wrong!
     LD HL,SOF          ;OK point HL to SOF.
WR1:LD DE,FCB           ;point DE to start of FCB.
     PUSH HL
     CALL 443CH         ;doscall for write AND verify

     POP HL             ;restore stack.
     JR NZ,BAD          ;something wrong !
     LD A,(HL)          ;)
     OR A               ;)writes zero byte to EOF
     JR Z,FIN
     LD DE,16
     OR A
     ADD HL,DE          ;bump to next start of
                        ;record
     JR WR1
FIN:LD DE,FCB
     CALL 4428H         ;doscall for CLOSE.
     JP DEMO
BAD:OR 0C0H             ;DOS instruction to set
                        ;Bits 6 & 7 thereby returning
                        ;control to program with full
                        ;error message.
     CALL 4409H         ;doscall for short error
                        ;message.
     CALL GETKEY
     JR FIN
EOF:DW SOF
FCB:DS 32               ;Space for filespec
                        ;Use 50 for Model III TRSDOS
IOBUFF:DS 256
SOF:DB 0; START OF TEXT
     END
```

```
10 ' Another short tutorial  on CMD"O" and CMD"F=ERASE" from ND80 v2.0
20 ' define the file size , using sf, 'size of file'
30 SF = 5
40 FOR C = 1 TO SF : READ A$(C) : NEXT C
50 ' use the following for the initial file/array.
60 DATA fred,sid,nick,john,andy
70 CMD"O",SF,A$(1)
80 ' display the sorted array/file
90 FOR C = 1 TO SF :PRINT A$(C) : NEXT C
100 ' increment/increase the size of the array/file counter.
110 SF = SF + 1
120 ' now define the new & last item for the array.
130 A$(SF) = "arthur"
140 ' now resort the array/file.
150 CMD"O",SF,A$(1)
160 ' now display the resorted file.
170 FOR C = 1 TO SF :PRINT A$(C) : NEXT C
180 ' put a$ array into b$ array
190 FOR C = 1 TO SF : B$(C)=A$(C) : NEXT C
200 CMD"F=ERASE",A$(SF)
210 FOR C = 1 TO SF :PRINT A$(C) : NEXT C
215 PRINT"The screen should have blanks";:INPUT Q$
220 FOR C = 1 TO SF : PRINT B$(C) : NEXT C
230 'CMD"F=ERASE" IS USED FOR CLEARING PARTICULAR VARIABLES, PAGE 7-12.
```

Brian Pain

Swindon Workshop 9th November 1984 Friday Lectures.

1. Colin Bowyer & Ed Rashbrooke will go through the setting up of an example on PROFILE. Colin uses Profile extensively in his business, Ed having set up the system for him

2. Chris Cain will explain how as a programmer he grappled with the intricacies of implementing TABS accounting packages on a GENIE III, under CP/M using 80 track double sided & double density.

3. Colin Ashford will discuss some problems encountered when a business acquires a micro & starts to use it.

4. Trevor Grover will explain how he helped to set up a M3 & hard disk to be used for accounts systems purposes. He will then follow with experiences of the M3 used for capturing data from a factory floor.

5. Brian Pain will go through the setting up of VISICALC and producing the necessary layouts for the current Companies Acts layouts.

MILTON KEYNES JULY 1984

Peter Knaggs will spend the Thursday and Friday on Z80 machine code and graphics. The task will be to design the destroyer and submarine with one shooting at the other, and scores being kept.

Milton Keynes Workshop Comments and Notes.

The above was held over the local half-term taking advantage of the premises being free from Friday to the Sunday evening. The catering was by a local lady and her husband who now leaving the district to open a restaurant, and the accomodation was once again a variety.

The Friday started off before lunch with Os House invited to explain a working integrated system, in use in his own company. What was usefully explained was its development over a number of years, and some of things that can and do go wrong. As a student for once, the virtue of patience came across very strongly, as the system has to cope with two entirely different types of activity, and the employees are most definately the type to put spanners in works.

Os's anecdotes on reconciling management accounts with legal accounts also revealed a very practical problem - not one for the usual accounts package off the shelf. The efforts that are expended on costing were again very clearly outlined, more conceptual than with detail, but afterwards several members were interested in some of the ideas put across.

After lunch Leo Knaggs and Os went through several applications that have been solved and are now working, ending in fact on one that has not been solved but showing "WHY NOT"

The first was a high volume factory environment, were the model 3 is maintaining a record on current production, for management to advise customers and make adjustments to the factory floor where necessary. The company will be going over to the concept of modem + model 3 + model 2 for transferring of business data, facilitating management interpretation of up to date data, from different sites.

Leo followed this by running through the merits of using a well tried package -Tandy's Inventory Control System- and customising for a particular application. The problem was one of sorting a little quicker, and inserting a little more efficiently, and of course deleting. Judging from the comments, sorting is a regular problem and I wish members would write in more often on this. Informal comments suggest that we do not like exposing our lack of knowledge/ability.

Os then did the dough. Here a company wanted to schedule deliveries, collate orders, break down the production into products and requirements, invoice the customers once delivered, and update the sales ledger.

A Builder's costing system was then outlined, showing the costs by week/time, type of labour, and by contract. The solution was to use some standard software with some customising suiting the customer, the type of data and environment eg Pinstriped wellies.

The last one was the hotel type of problem. Here it proved there were a series of requirements-multi user- speed of processing-point of sale terminals-secure software and high quality hardware.

Colin Ashford did a formal presentation covering the buying of a computer for business. Colin did a very thorough job, and notes flowed where they related to a couple of jobs I am looking at the moment.

What follow are some keywords or expressions that seemed useful at the time, and if in doubt ring Colin for a more detailed explanation.

Specification, looking at costs, feasibilty study, users problems, planning personnel, timetable, budgets, project summary, benefits/penalties, schedule of steps, machine performance and workloads, hardware and software requirements, security measures, user education, timing of changeover, equip. failure, management information, approval of design, documentation standards, user priorities, data validation & rounding rules, main programs and overlays, certificate of acceptance, manufacturer support, printer noise, eye strain, clean mains

To set us thinking Colin commented on W.P. parameters and suggested that 80 could be a ballpark figure.

Derrick Rowe very kindly came along and did a session on the Model 16 and Xenix, using both an overhead projector on one wall, and a 35mm black and white projector on an ordinary screen. The latter was used to show a series of screens formats without the usual problem of those at the back not seeing a thing.

Derrick spent some time on screen design formats, and covered the problem of non standard TANDY basic eg print at. and how programmers should be looking ahead and considering upward compatibility, building longer life into software.

Like others he covered the concept of using a well tried package, and then providing software interfaces to solve individual problems-VISICALC and PROFILE seem to be popular vehicles for this approach.

On Xenix itself, MULTIPLAN seemed to the first package to be used in a serious business environment, showing some clever data transfer possible where VISICALC was limited by comparision. Perhaps Derrick could do us a review of MULTIPLAN in a multi-user environment, and even some benchmarks, consolidation would be an excellent example !

From his first impressions, Xenix looked to heading where CP/M has got to, MSDOS has nearly reached, and 'C' might. C appears to be a sliced bread job, it is proving to very portable, suggesting a longer life for software using it.

Derrick spent some time on file protection, using this as an example of the sophistication available under XENIX, with some new concepts to be learned by those transferring from the older DOSes.

Finally some thoughts were expressed on the argument that some were buying storage with high capacity, but not enough equipment to access it, and in this context TANDY had some low cost multi-user answers to this problem.

Saturday saw the AGM in the morning, with Laurie Shields in one room afternoon and evening, Paul Ostwind and Carl Rabe in another in the afternoon.

Laurie did a business type Program in assembler. The result of the labours is published in this issue, and that comes from David Washford and Rod Bullard. I sat through some of class and enjoyed seeing something useful being done in assembler. We all agreed that the samething in BASIC would have taken just a few minutes, but all the same there was a sense of achievement.

Paul Ostwind's session was on disk Protection and was well attended by those wanting to earn the bottle of champagne. Over the weekend the band of many became just one dogged individual - and he could not claim the Prize ! Well done Paul on setting this exercise. Paul revealed all on Sunday afternoon, and again several were heard asking to keep the disk to take home and Perservere with - gluttons

Carl very kindly agreed to run over his own experiences and views of SUPERUTILITY in a session lasting around 45 minutes, where members could ask the whys and hows. Over the weekend Carl was the main tutor on the 64k PRINT BUFFER that the group had Purchased for construction, ably assisted by Don Bannister and a complete new member at the start of the weekend, but totally immersed by the end - Rod Hutson seen with wires - chips and the inevitable soldering iron. Thanks for making that Project a success, and I know Sid Day will get many hours of use from the buffer, and Phone calls in the future about its Performance.

Sunday saw Leon do his hardware thing, which I nearly ruined by putting 12v onto the ROBOT buggy instead of 5v, with Ron Everitt and Chris Cain extricating me from my stupidity. The hi-res board using the TEXAS chip was explained to many hopefuls, and this was followed by the session on how stepper motors can be attached to the Model 1.

While everybody was sleeping over Saturday evening, Leighton Davies was locked in his room soldering the MAPLIN modem main board as a busman's way of curing insomnia. David Hedges very kindly cooked bacon and eggs for Leighton's breakfast and the board does actually work because Leighton says so. Another member has now bought this with Eric Hartley's RS232 board, and all of this confirms why we all need the group.

John Kilpatrick did his very first session on ELECTRIC PENCIL 2 & 2+, with a review of the commands, its development, uses with VISICALC and answered a number of questions. My own thanks to John for helping on M100 to M1/M3 transfers, with demonstrations by Andrew Creak using Peter Inglis's very nice NULL modem with flashing red and green lights showing data in/out.

At last David Washford did a session on DOTWRITER, going through some of the commands, ribbon swopping, Printer compatibility, library of fonts, the development and use in his own company.

Brian Pain

Swindon meeting notes & comments held over for the next month.

FOR SALE

ITEM	PRICE (O.N.O.)
Model 16 1 drive	£1950
Model 100 24K	£ 390
Thermal printers (4)	£ 45 each
Scripsit 2.0	£ 175
Scripsit Model 4	£ 80
Visicalc Model 4	£ 80
Profile Model 4	£ 80
CoCo Space Assault	£ 5
CoCo Chess	£ 5
CoCo Bustout	£ 5
CoCo Polaris	£ 5
Tandy cassette deck	£ 20
Thermal paper (2)	£ 1 each

BOOKS

TRS-80 Pocket Handbook	£2.50
Programming Techniques	£0.75
Level II BASIC	£3.50
Using TRS-80 In Your Home	£3.50
TRS-80 Assembly Language Programming	£2.50
Pocket Computer programs	£1.00
BASIC Conversion Handbook	£2.00
Computer Programming In BASIC For Everyone	£1.00
Visicalc Applications	£4.00
TRS-80 Graphics	£4.00
BASIC Computer Language	£2.00
TRS-80 Graphics	£3.50

M.P.G. Computers Ltd.,
8 Becketts Walk,
Amwell Road,
Herts.
Tel: Ware 69466
Or 'phone Paul Greenslade on (0922) 441707 any evening.

I am selling a microcomputer and would like to hear from anyone in your club who might be interested in it.

The microcomputer is a TRS-80 model I with a 32K expansion interface, a monitor, three double density disk drives and some software. The software includes two TRSDOS operating systems, Visicalc and the full Microsoft editor assembler. I will consider any offers around £650.00.

I would be very grateful if you could bring this letter to the attention of your members.

DAVID J MILBURN
8 Queens Walk House,
Queens Walk, Ealing,
London W5 1TG

Tel: 01-997 7578

TANDY MODEL I HARDWARE/SOFTWARE - FOR SALE

Cassette-based hardware and software

48K, Green screen monitor, Expansion interface with RS232, parallel printer interface and 2 cassette ports. Atari joystick, sound box. Manuals, Basic tutor tapes. Software includes Scripsit word processor, tape mailing, various games. 14 software/hardware books, including the Mystery books.
£299.

Disc software

EDAS editor assembler, Superutility plus, Macromon monitor program, Fortran, Games and Basic utilities. £90

Contact Bob Wiggins
'Dilkhush'
North Bank,
Hassocks
W.Sussex
BN6 8JG (Tel Hassocks 3430)

WANTED

Model I 48K with disk drive. 'Phone or write with offers to

Irene Ward,
9A The Riddings,
Earlsdon,
Coventry.
Tel: (0203) 70835

Is there another make of machine that can use TRSDOS programs for Model I, apart from Model II?
(* There is always the Video Genie, of course. LFH*)

STOP PRESS

The second National Micro Robotics Conference will be held on Saturday 22 April at the Central Hall, Westminster, in conjunction with the ALCC London Computer Fair.

I attended the first conference about three years ago, and found it very interesting.

Leon Heller

NATGUG NEWS

Volume 5 Number 10 April 1984

OFFICIAL JOURNAL OF THE

National TRS-80 & Genie Users Group.

INFORMATION ON THE GROUP

Membership of the Group is by subscription to the Newsletter, which is published monthly. Membership details are obtainable from the Group Secretary. Membership of the Group is open to anyone with an interest in the TRS-80 range of microcomputers, and compatible systems such as the Video Genie.

Details of the Group accounts and the constitution of the Group are obtainable from the Secretary.

Members requiring assistance with problems related to the TRS-80/Video Genie may call the Secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops are arranged from time to time in various parts of the country.

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time. Sub-groups also exist for medical and educational users.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are obtainable from the Secretary. The medical and educational sub-groups maintain their own libraries.

A membership list is obtainable on disk from the Secretary.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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8 Morris Walk,
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Bucks. MK16 8QD.
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EDITORIAL

Sorry about the lateness of this issue; Easter crept up on me and took me by surprise!

Apart from the QL, which has yet to put in an appearance (although I do know several people who have actually used one of the mythical machines, at Sinclair's Cambridge establishment), another very interesting machine which really does make the TRS-80 range look rather sick is the new Apple Macintosh. I recently spent a couple of hours playing with one, and for around £1800 (plus VAT) you get a very neat and compact system based on the MC68000, with mind-blowing capabilities. It is comparable in price with the disk-based Model I, when it first came on the scene, if you allow for inflation.

Although Tandy have just announced increased profits, and Apple's profits are down by a colossal amount, Tandy really ought to produce something innovative like the Mac, instead of jumping on the bandwagon and copying (admittedly with many improvements) the mediocre and obsolescent IBM PC. Moreover, MC68000 family devices are easily obtained, whereas Tandy have had to delay shipments of the 2000 PC due to a shortage of 80186 processors.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. If possible, send material in printed form.
2. Scripsit or Pencil disks/cassettes are acceptable.
3. Ensure your ribbon is in reasonable condition.
4. Printer output should be on A4 paper if possible.
5. If you send in hand-written material, write legibly.
6. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

LIBRARY INFORMATION

Model 1: Leighton Davies, 105 Caerau Road, Caerau, Glamorgan. Tel: (0656) 738337

Model II: Jim Hutton, 25 High Street, Stroud, Glos. Tel: (045 36) 4423

MEMBERS' LETTERS

I would like to thank you for your help regarding my problem finding another Tandy computer compatible to my existing TRS-80 Model II. If you recall, you furnished me with the names of the people who could possibly help, and as a result I have now purchased another Model II, a hard disk system, and a 3-disk drive unit from O and J House Ltd.

John Inman.

I sympathise with Bernard Mantell's objection to the new format although I like it myself, I find it much easier to put in on my bookshelves.

With regard to keeping for easy reference, my practice with this, as with other magazines, has for years been to wait until I have a complete volume and then bind them together by slicing off the back edges and gluing the ends of the pages under pressure. This makes a nice neat, strong volume and with a couple of hard covers they keep very well.

M. C. MATTHEWS, B.Sc., F.R.I.C.S.

I would like to join IQLUG. Could you please send me the necessary details?

I am not abandoning my Model 4 at all - it is a great computer - but I do want to put croquet onto the computer sometime, and I think that would be easier in colour. The problem is distinguishing four different balls in monochrome, even with the very high resolution of the Model 4. The Model 4 hi-res board is still not available, and the QL, for an extra £200, does offer quite a bit more. In other words, I think it would make a useful games companion to the Model 4 when, eventually, it reaches the market!

You surprised me by referring to the Model 2000 as "just another IBM PC clone". You cannot even have glanced at the specification. It leaves the IBM PC standing in every department. It is in quite a different class.

I was sorry to see the press statement by Micronet that they have decided to "cease a videotex solution" (!) for TRS-80s. I have been trying to join since it was first announced, but so far all they have managed to do is to lose my orders and my cheques. To be fair, they did cash the separate cheque for the software COMMS-Pack back in November, but they forgot to send the goods. If they keep mislaying orders that are sent then they will obviously be disappointed by how few they manage to hang onto.

They refer, also, to the "difficulties for users in obtaining necessary hard wire add ons for the Model I". But that is what their literature said that they would be providing.

It seems to me like the old, old story in micros, that they had no idea how big the demand would be when they launched the idea, and they tried to do it with too small an organisation, and now, instead of expanding to meet the demand they have decided to limit the service they give.

I. Howard Wright

PROBLEM SECTION

Help! Radioactive Genie!

Cure for radiation from Video Genie 1. Blots out wife's radio one floor down.

C. Lovell,
5 Montpelier Road,
Ilfracombe,
Devon.
Tel: Ilfracombe 63162

(* It might be worth ringing Lowes about this. They are into amateur radio, as well as computers, and are bound to have come across this problem. LFH *)

I require a driver program, disk or tape, Model 1 Level 2, to operate a Prism modem for Micronet/Prestel 1200 baud.

I also have a Minor Miracles modem, and require a driver, 300 baud, for bulletin boards.

I do hope someone out there can help me.

G.E. Collin,
73a Kirkland Road,
Leicester.

(* Give Don Bannister a ring on (0232) 668899. LFH *)

When replying I would like to know if there is a patch available for Scripsit/LC with the Acorn Software Superscript update to enable it to run under Newdos/80 version 2.0. Everything appears to work correctly apart from the directory request '?D1', when Newdos returns with 'unknown error code'.

I shortly wish to fit Aerocomp's Doubler, do you have any advice please?

The computer is a standard TRS-80 48k model 1 with two 35 track disk drives.

D.J.Garstin
Stanwater Cottage,
Stedham,
Midhurst,
West Sussex.

While typing an extensive project report with SuperScripsit I suffered a glich which appeared to have wiped out a whole sector. The big problem was that I could no longer access my current file. I had backup copies of the earlier stages but I had lost several hours of work at a critical time.

By using Super Utility I could see that the sector was unreadable but I was able to work out that I had lost the header section. Again using Super Utility I reconstructed the sector and copied the details from the earlier version. I hoped that this would enable me to recover the bulk of the text. However I kept getting a "Record out of range" massage.

After checking the header of several files and trying a few changes I could see how Superscripsit stored some of the pointers. The page length and line spacing are contained in this section but I could not find out which parts controlled the other parameters. As the text seemed to be intact it was frustrating to start again.

The "record out of range message" semed to suggest that some of the pointers did not agree and after a few attempts I got a "EOF not found" which suggested that I had altered the record length but the figure I had used did not match the EOF marker.

Can anyone help decode the mysteries of SuperScripsit? The program has a lot of advantages for big word processing jobs as it can handle more text than can be got in the memory of the machine but it seems to be slow for short memos or letters and less easy to salvage in times of disaster.

Derek Trayler
88. Grosvenor Drive,
Hornchurch,
Essex RM11 1PW.
England.

MODEL 100 DISK DRIVE AND VIDEO INTERFACE

A disk drive unit and video interface for the Model 100 has been released in the States. One 184K 5 1/4" floppy is provided, with space for a second. A DOS is included, but it does not seem compatible with any of the others, and is in fact completely transparent to the user, using the built-in commands.

The video format is 25 lines by 80 characters on a monitor (25 by 40 on a TV, via a modulator), and supports the Model 100 character set and graphics.

Price is $799 plus $239.95 for the second drive.

I do not have any information on when it will be available over here.

Leon Heller

MODEL III TRSDOS 1.3 PATCHES

To disable the date request when the system is booted:-

```
PATCH *0:0
ADD=4EA9,FIND=CA,CHG=C3
```

To get a proper error message instead of just ERROR 18, using a ZAP program, change Track 10, Sector 10, Byte 2C from 20 to 18.

John Gardner.

(* John dictated the above to me over the phone. I hope I got them down correctly. Don't use your master disk, just in case! LFH *)

NULL MODEM

WITH REFERENCE TO THE ITEM IN THE JANUARY EDITION OF THE NATGUG NEWSLETTER ON THE CORRECT CONNECTIONS FOR A NULL MODEM.

IF ANY OF YOUR READERS ARE INTERESTED I AM ABLE TO SUPPLY NULL MODEMS ALREADY MADE UP, THESE CONSIST OF A MALE AND FEMALE TYPE 'D' 25 PIN CONNECTORS PLUS A RED AND GREEN LED MONITORING THE TX/RX LINES, THE WHOLE ITEM FORMING AN ENCLOSED PACKAGE OF 52*38*13 MILLIMETERES.

THE COST OF THE NULL MODEMS WOULD BE 5.00 EACH PLUS 50P P&P.

I AM ALSO IN A POSTION TO BE ABLE TO SUPPLY TYPE 'D' 25 PIN GENDER CHANGERS, IE MALE TO MALE OR FEMALE TO FEMALE AT THE SAME PRICE.

PETER C INGLIS.
14 ARBOUR LANE,

CHELMSFORD,

ESSEX,

CM1 5RG.

TEL (0245) 267482.

IQ TEST ?

In my view, the Milton Keynes February workshop was an unqualified success - high attendance, excellent syllabus, good facilities. Equally, I felt that the AGM was a near disaster - the number attending could be counted on the pins of one chip!

However, two important facts did arise during the AGM. One, although still declining, our membership is only slightly lower than at the same time last year. Two, I was elected as a Committee Member - which I reckon gives me a limited licence to spout about things in general; now that I've started I shall continue .....

Leon, in February's NATGUG editorial, explained how he and Brian had formed IQLUG - and I am certainly not interested in whether their decision was one of treachery or one of far-sightedness! My interest is in maintaining, for as long as possible, events such as that held at Woughton Campus - events where Space Invader fanatics rub shoulders with solderers and carpenters, where erstwhile General Ledger programmers can eat and drink with circuit board designers.

I am, by nature, a gossipy sort of individual, and so it will come as no surprise to you to hear that the IQLUG decision was talked about, both at MK and at Swindon, by many members. The consensus of opinion seemed to be that:

> The Model I's around will last for some years yet.
> The QL will probably offer the hacker the opportunities previously available only on the Model I.
> Tandy's current model range is not over-exciting.
> Sinclair has proved to be in the high-volume league.
> The QL and the TRS-80 should be able to co-exist.

All of the foregoing has been a rather long-winded way of getting around to the suggestion that instead of having NATGUG and IQLUG, should we not just have, say, BESTUG which could provide the best of both worlds without Brian and Leon having to split themselves into two? Whilst I fully accept their statement that they will continue to run NATGUG for as long as YOU ask them to, I know from personal experience the difficulties that will confront them. I also know that without Leon Heller and Brian Pain, NATGUG would cease to exist (remember the opening comment on AGM attendance?)

If this letter (?) is published, then that will indicate that B & L are not themselves averse to the principle of a combined Users Group. I would then ask each of the other 494 members to let me know their feelings on the subject. If sufficient support is given, then I would expect to see an Extraordinary General Meeting held during the MK workshop in July.

David Washford,
1 Alexandra Road,
Bournemouth BH6 5JA

(* I am sorry to dampen David's enthusiasm for a combined group, but even if NATGUG favoured such a step, IQLUG must have the final say in such a proposal. I could not, in all honesty, recommend such a merger to IQLUG for a variety of reasons, nor would I wish to edit a joint newsletter. If a member of IQLUG made such a proposal, we would of course put it to the vote, either at the IQLUG inaugural general meeting, or a special meeting. LFH *)

Speech Synthesis Chip SP 0256 AL2

Further to your recent article concerning the General Instruments SP 0256 AL2 speech chip. I obtained both the chip and the crystal from Semiconductor Specialists at a considerable saving over Watford Electronics price.

When I built my board I decoded the port fully so that it doesn't clash with other ports. Also I used the full Butterworth Filter as recommended by G.I. However I didn't notice much difference in the speech quality.

I have also tried to interpret between Votrax SC-01 codes to SP 0256 AL2 codes but without much success. I think the difficulty is as a result of using allophones as against phonems. Has anyone else tried?

I also have included a copy of my demonstration program as the data statements contain a fair number of words. Perhaps others using the chip would be interested in exchanging their 'dictionaries' of words.

Ken Robinson

65 School Drive,
Newton Longville,
Milton Keynes,
MK17 0DD.
0908-75479

```
 10 REM *** VOICE/BAS - Ken Robinson  ***
 20 CLS :
    CLEAR 200
 25 REM *** A$= word,  A= length of A$  ***
 30 READ A$,A:
    IF A$ = "END" THEN END :
    ELSE PRINT A$
 40 FOR X = 1 TO A
 45 REM *** B=Speech chip allophone Code ***
 50 READ B
 55 REM *** My speech board is addressed as PORT 123 ***
 56 REM *** Send B to board ***
 60 OUT 123,B
 65 REM *** check to see if speech board is ready ***
 70 IF INP (123) ( ) 253 THEN 70
 75 REM *** jump back for next allophone ***
 80 NEXT
 85 REM *** put a pause between words ***
 90 IF INP (123) ( ) 253 THEN 90
100 OUT 123,4
105 REM *** monitor "A" to break out of the program ***
110 IF INKEY$ = "A" THEN STOP
115 REM *** jump back to repeat for next word ***
120 GOTO 30
200 DATA HELLO,5,27,7,45,53,2
210 DATA THIS,4,29,12,55,2
220 DATA IS,4,12,12,43,2
230 DATA THE,3,29,19,2
240 DATA GENERAL,9,10,7,7,11,7,51,62,45,2
```

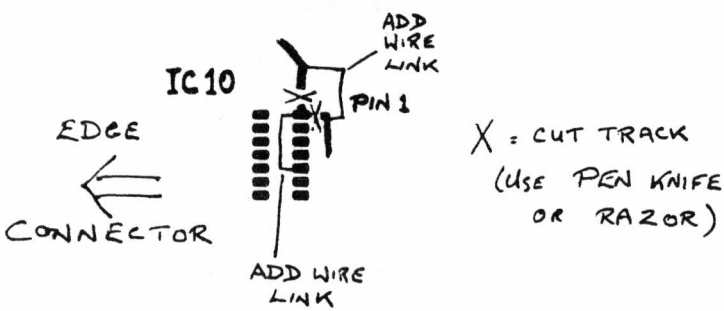
```
250 DATA INSTRUMENT,12,12,11,55,13,14,22,16,7,7,11,13,2
260 DATA VOICE,5,35,5,38,55,2
270 DATA SYNTHESIS,9,55,12,11,29,19,55,12,55,2
280 DATA CHIP,5,50,12,12,9,2
290 DATA BEING,4,63,19,44,2
300 DATA RUN,5,14,15,11,11,2
310 DATA ON,3,23,11,2
320 DATA THE,3,18,15,2
330 DATA VIDEO,6,35,12,21,19,53,2
340 DATA GENIE,5,36,19,11,19,2
350 DATA COMPUTER,9,42,23,16,3,49,22,13,51,4
360 DATA THIS,4,18,12,55,2
370 DATA SYSTEM,8,55,12,55,2,13,7,16,2
380 DATA ALSO,5,23,45,55,53,2
390 DATA CONTAINS,8,8,24,11,17,20,11,55,2
400 DATA A,3,20,27,2
410 DATA FLOPPY,6,40,45,24,9,19,2
420 DATA TAPE,4,13,20,9,2
430 DATA UNIT,5,49,11,12,13,4
440 DATA THE,3,29,19,2
450 DATA LIST,5,45,12,55,17,2
460 DATA OF,3,23,35,2
470 DATA WORDS,5,46,58,21,55,2
480 DATA ALREADY,7,23,45,14,7,21,12,2
490 DATA PROGRAMMED,9,9,39,53,61,39,26,16,21,2
500 DATA FOLLOWS,7,40,23,45,53,55,4,4
510 DATA MATTHEW,6,16,24,0,29,31,2
520 DATA ANNE,5,2,26,1,11,2
530 DATA KENNETH,7,42,7,11,12,27,27,3
540 DATA DAUGHTER,6,33,23,23,13,51,2
550 DATA COLLIDE,7,8,15,45,6,33,27,2
560 DATA SISTER,7,0,55,12,55,13,51,2
570 DATA CLOWN,5,42,45,32,11,2
580 DATA COOKIE,5,8,30,42,19,2
590 DATA LETTER,5,45,7,13,51,2
600 DATA LITTLE,5,45,12,13,62,2
610 DATA UNCLE,5,30,44,8,62,2
620 DATA EXTENT,10,7,42,55,13,7,7,11,2,13,2
630 DATA PLEASE,7,9,0,45,19,43,55,2
640 DATA SCORE,4,55,8,58,2
650 DATA FIR,3,40,52,2
660 DATA TWO,3,13,31,2
670 DATA ALARM,7,15,45,1,45,59,16,2
680 DATA DAVID,7,33,20,35,12,12,21,2
690 DATA GILLIAN,8,10,12,45,12,2,26,11,2
700 DATA HELEN,6,27,7,45,7,11,2
710 DATA END,0

 73 LINES
 76 STATEMENTS
2129 BYTES USED
```

MAPLIN MODEM BOARD

The RS232 interface, certainly in the Model I, III and 4, and probably in the Model 2, 12 etc, has a very full specification (unlike most of the so-called RS232 interfaces on other micros). However, as a result, the board expects to have a Carrier Detect signal on Pin 8 of the connector to activate the interface. A brute force solution is to tie the pin permanently to +12V, but more elegantly, the Maplin board can supply the signal at the appropriate time. Not only that, but, since you are using a high spec RS232 interface and you don't need the TTL output from the Modem, this signal can be routed via the Modem's edge connector.

The signal is the Carrier Lock one, which is buffered and inverted to the required polarity by a spare buffer in IC10. This buffer (IC10a) is used by isolating Pin 1 by cutting both tracks going to this pin, and then linking Pin 5 to Pin 1 with insulated wire. This now provides a Carrier Detect signal at Pin 11 of the board's edge connector, and this can be wired directly to Pin 8 of the RS232 connector. Finally the tracks that were separated from Pin 1 of the IC have to be linked together, either by a wire link on the board's component side, or by insulated wire on the solder side. This leaves the board free of any wires trailing to odd places elsewhere in the Modem, and allows it to be exchanged in moments. The solder side of the board looks like this:-



Robert Vieira

USING BASICODE ON THE GENIE

Members who have recieved the Basicode booklet and software from the BBC's Chip Shop program will know that in order to load Basicode programs into the machine an interface circuit is needed. This also applies to the TRS80 model 1.

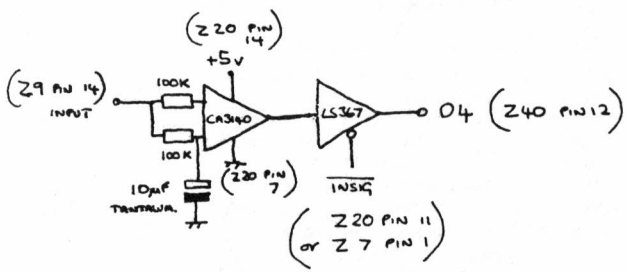
In the original Basicode booklet published by the originators of the idea (the Dutch radio program Hobbyscoop) two interface designs were published, both for the TRS80 model 1 but with no connection details for the Genie. The smaller and cheaper of these interfaces is missing from the Chip Shop Basicode booklet for some reason. The circuit and the connections for the TRS80 and Genie are shown below.

When the interface is in place you can use the TRS80 translation program and the external cassette port on the Genie. The menu from the translation program is also reproduced below as it is not clear which to use at first.

The interface does not affect the use of the cassette or disk systems at all and is not used for encoding your own programs into the Basicode format.

I have already transferred simple programs to and from the Genie, BBC, Apple II micros and from the Radio 4 broadcasts. Iwould be interested in hearing from other members using Basicode.

CHRIS ATKINSON 01 461 0810.



THE CHIPS Z9, Z20, Z40 ARE ALL ON THE GENIE INTEFACE BOARD. (THE ONE NEAREST THE CASSETTE)

THE CORRESPONDING PINS FOR THE TRS80 MODEL I ARE:

INPUT	Z4 pin 4
INSIG	Z44 pin 15
O4	Z61 pin 11
+5v	Z24 pin 14
GND	Z14 pin 7

BASICODE INSTRUCTIONS TRS-80 MODEL 1 & 3 / VIDEOGENIE

THE PROGRAM IS SUITABLE FOR ALL TYPES OF COMPUTERS,
INCLUDING USERS OF DISKBASIC.
BEFORE THIS PROGRAM CAN BE USED, IT MUST BE UPDATED.

WHICH TYPE OF COMPUTER ARE YOU USING ?
1 TRS-80 MODEL 1 WITH LARGE PRINTED CIRCUIT-BOARD
2 TRS-80 MODEL 1 WITH SMALL PRINTED CIRCUIT-BOARD
3 VIDEOGENIE WITH LARGE PRINT AND RECORDER 1
4 VIDEOGENIE WITH LARGE PRINT AND RECORDER 2
5 TRS-80 MODEL 3 (NO INTERFACE NEEDED)

?

THIS IS THE OPTION FOR THE GENIE AND TRS 80 WITH THE SMALL INTERFACE DESCRIBED ABOVE

AIDS - THE FRIENDLY DATABASE?

This unfortunately-named progrm is a database program which knocks the spots off Versafile, ISS, SIR and the Creator. It allows you to catalogue, correlate and sort a considerable amount of data, quickly and easily. It seems the ideal system for most home users and small businesses.

The program first allows you to create your own data file - for instance Name/Age/Sex/Class/Weight etc. Up to 26 such columns are allowed, and the total width of the 26 cannot exceed 255 characters (numbers or letters). The total number of records available depends on the length of each, and is displayed whilst defining the system. If each record is 255 characters long, 122 are permitted.

All the records are available in memory at one time. This obviously limits the size of the file, although I haven't found that a problem.

Adding, changing and deleting records is easy, and may be done in any order. A fast sorting routine operates, which can sort by any field, in ascending or descending order, and by any number of columns.

Another section of the program allows you to select records. For example, selecting Males aged 20-29 weighing over 70kg born in June and called Jeremy would be a simple matter. The system can display this group, or the unselected group, and tell you the numbers in each. Individual records can be marked, and the marked records can subsequently be grouped or modified.

The printing routine can print to a printer, using continuous paper or single sheets, or to the screen, or to a disc file which can later be loaded into SCRIPSIT. Unfortunately, I haven't found a way of sending control characters to the printer, but it otherwise runs smoothly. If you wish, any of the numeric columns can be totalled or subtotalled. Printing to the screen is often useful, and it is easy to print selected columns only or to rearrange the columns prior to printing.

AIDS can be used as part of a Mailmerge-type system. It is very easy to use, menu-driven and user-friendly. There is an on-line help file if you get stuck'

I have run it succesfully under NEWDOS 80 and MULTIDOS. It will run with a one- or two- drive system. Unfortunately, the program loads into low memory and it is not possible to use MINI-NEWDOS or Mighty Micro, which is a nuisance. There is no way to recover data after a reboot. The program is supplied as a CMD file together with a series of overlays which the program calls. This sometimes slows you down, but allows more memory for user files

Previous versions of AIDS won the 80-Micro Readers choice awards. A version was written in BASIC and published in 80-Micro last year. However, I would suggest that the program is far better in a machine-code version. The new version of AIDS is available for $79.95 from Meta Technologies in the US - they take telephone orders on 0101-216-289-7500. If you need a fast, easy and poweful database, I would strongly recommend you take a look at it.

Richard Marks.

PRINT BUFFER

MANY THANKS FOR A MOST ENJOYABLE WEEKEND AT MILTON KEYNES AND THE PRINTER BUFFER WHICH ARRIVED QUITE SAFELY. UNFORTUNATELY MOST OF MY WEEKENDS ARE COMMITTED BUT I WILL BE RESERVING TIME FOR AS MANY WORKSHOPS AS I CAN.

THE BUFFER WORKS WELL, TODAY HAS BEEN THE FIRST REAL TEST FOR IT AND IT IS CHURNING OUT INVOICES WHILST I AM TYPING THIS. I RUN A PHILATELIC SERVICE INVOLVING A STANDING ORDER SERVICE FOR FIRST DAY COVERS ETC. AND PRODUCE MY INVOICES INCORPORATING A NEWSLETTER ON MY GENIE. IN SOME CASES QUANTITIES VARY WITH THE NUMBER OF HANDSTAMPS AVAILABLE AND SPECIAL REQUIREMENTS SO I HAVE TO BUILD IN A INTERUPT FACILLITY AT THE BEGINNING OF EACH INVOICE TO PRINT OR AMEND. NORMALLY THIS TAKES MOST OF THE DAY, WAITING FOR THE PRINTER BEFORE GOING ON TO THE NEXT INVOICE BUT WITH THE BUFFER I CAN GET THROUGH A BATCH OF INVOICES AND LEAVE MYSELF FREE FOR OTHER THINGS WHILST THE PRINTER GETS ON WITH THE JOB. I CAN THROROUGHLY RECOMMEND IT FOR ANY APPLICATION WHERE THE PRINTER IS CONTINUOUSLY IN USE.

I WILL BRING IT ALONG TO THE NEXT WORKSHOP I CAN GET ALONG TO BUT IN THE MEANTIME I WILL BE PLEASED TO ANSWER ANY ENQUIRIES FROM ANY MEMBER CONTEMPLATING BUILDING ONE.

Sid Day

MC68000 SYSTEM

I now have a working MC68000 system, in addition to to the MC68008 system I built some weeks ago.

The system comprises a 10MHz (!) MC68000 processor, 4K EPROM, 4K RAM, and a serial port, for communication with a host system such as a Model II with a cross-assembler.

I have modified my MC68008 monitor to run on the new system, with several new commands such as object code download from the Model II, register dump and memory dump. I am working on a trace facility, and will be developing a disassembler. Developing software in this way means that I will have several utilities ready for the QL when it becomes available in quantity.

I shall shortly be building a second card for the MC68000 system with 128K RAM (expandable to 512K when the 256K RAM chips come down in price), 512 by 256 bit-mapped display, disk controller (3 1/2", 5 1/4" or 8" drives), keyboard interface, etc. I have sent off to AT&T for details of Unix System V, which I might implement if I can get hold of a suitably inexpensive Winchester, but the initial operating system will probably be CP/M-68K, since this runs quite happily on floppies.

All software development will be done on the Model II with the CP/M Users Group MC68000 cross-assembler.

Leon Heller

Model 4 PAL Chips etc.

Members must know by now that the technical manual for the Model 4 is now available from Tandy. It is priced at just under £17.00 and is a useful addition to the library of anyone who wants to get inside the computer or who needs access to the various port switches. Also there is a good description of the inner workings of TRSDOS 6 although not as detailed as the MYSOSIS book available from Mollimerx. The manual shows the use of PAL chips (programable array logic) for a number of decoding functions in the machine. Anyone who wants to maintain or modify his Model 4 will need to know something about these.

The PALs used in the Model 4 are types 10L8, 16L8 and 16R6. these are AND/OR gate systems with multiple connections between inputs and some conections to control the outputs, all of which are made by fusible links similar to those in most ROMs.

A logical function is determined for the device and certain of the links are blown during programing which leaves only the links required to enable the PAL to perform the desired logic function.The advantage of using the PAL is that the logic functions obtainable from one PAL can replace about five conventional TTL chips.

Our interest may be in finding a source of programmed PALs at an acceptable cost to enable maintanence or modification of our computers.

A PAL device costs typically about £12 unprogrammed. It appears that a programmed replacement from Tandy will cost many times that amount. For anyone who wants to maintain a set of spares this makes the cost prohibitive. That is if Tandy will supply them.

One of the characteristics of the PAL is that it can be easily copied after programming unless the programmer blows an additional link which the manufacturer provides called a security fuse. If this fuse link is blown the pattern of links blown is no longer accessable and one has to start from scratch to work out the pattern of links blown from the logic functions the chip provides. The security link in the PALs in my Model 4 are of course blown.

The PALs for the Model 4 can still be programmed to perform the functions required but the fuse links to be blown must be worked out. This can be a very time consuming task when attempted manually as there are about 1000 links which may or may not be blown.

The commercial user of PALs has usually got access to a PAL logic program on a computer which is in mainframe Fortran. The program, called PALASM allows the user to input the PAL type, the pin numbers and the logic functions required in Boolean form. The software then outputs the fuse pattern to be blown and can produce a record on tape or disk (often paper tape) which can be directly input to a PAL programmer for producing programmed PALs.

For anyone who wants to learn more about PALs I recommend purchase of National Semiconductors PAL Databook. This covers all the PALs

used in the Model 4. Also a listing of PALASM in Fortran is provided.

I hope the foregoing has shed just a little light on PALs for those who have not come up against them yet.

The main purpose of this correspondence has now been achieved but I wonder how many of you are interested in obtaining a source of programmed PALs for Their Model 4s? If ther is sufficient interest I would be prepared to manually work out the fuse patterns and program a few devices. If you are interested please let me know so that I can determine whether the task is worth the effort. There are four PALs in the Model 4 but one of these is used only to decode the additional 64k of Ram. Of course if someone has already done the work please put me in touch with them.

The memory decode PAL is available in the states when additional memory is purchased. See the January Newsletter, page 33.

While on the subject of additional memory I wonder if you know that TRSDOS 6 will access up to eight banks of 64k ram. It will but an expansion interface or extra power supply will be required to power the additional banks. It may well be that we shall soon be offered memory expansion kits of 256k ram chips to replace the 64k rams at present fitted. I expect a new PAL decoder will be required for this. I would like to check this out but the PAL decoder in my Model 4 is not an original Tandy chip so it is not representative of most Model 4.

Now for a call for HELP.....

Has anyone worked out how to directly access the video screen or keyboard under TRSDOS6 or CPM when operating with 128k ram?
From the technical manual it is clear that these reside in bank two of memory and bank switching will be necessary. I know how to do this but has anyone worked out an easy way???
I would appreciate any help on this.

Roy Barber. 01 304 3856. (Bexleyheath)

FOR SALE AND WANTED

For sale owing to upgrading.

System Genie 16K, with sound and lower-case. Expansion box with 32K. Teac single-sided disk drive and cable. Expander to Epson printer cable. Cassette EDTASM (unused).

Offers invited for all or any part.

John Shakespeare,
1 Hatlex Hill,
West Bank,
Lancaster LA2 6ET.
Tel: (0524) 823273

Adventures, games and utilities wanted for Model I disk or Level 2 cassette. Especially Infocom adventures and the Adventure System. I also have for sale Infocom Adventures, and various utilities on disk for Model I Level 2.

David Radisic,
1 Curzon Walk,
Pitsea,
Basildon,
Essex SS13 3HD.
Tel: (0268) 555455

Wanted, Model II.

Mr. Daines,
8 Pinewood Close,
Wellend,
Borehamwood,
Herts.
Tel: 01-207 5803

FOR SALE

MODEL 2/12/16 SOFTWARE

New and unused software surplus to requirements

26-4531	Scripsit 2.0	250.00
26-4521	Visicalc Enhanced	200.00
26-4710	Text Editor	40.00

Foster, 75 Willowtree Avenue, Gilesgate Moor, Durham DH1 1DZ 0385 41140

As previously stated I have recently acquired a Model 4 with hard disc and a model 100.I am therefor in a position to sell some of my old Model 1 equipment and perhaps you could include the details in the next newsletter.

Teac twin 80 track disc drive	#395
Anadex DP8000 Printer	#195
Editor assembler on disc	#45
Visicalc	#45
Newdos 80	#60
Profile	#35
Inventory Control	#15
Disk Mailing List	#15
Superutility	#25

I am interested in setting up an estate management system on the Model 4 and I would be interested in hearing from anybody who has done this.

I R MARTIN FCA
8 Bovingdon Road
Fulham
London
SW6 2AP

FOR SALE

Model I TRS-80 with monitor and expansion box totalling 48K, and two disc drives. Software includes LDOS, Disc Basic Course, Visicalc, Tandymail, Scripsit, Super Script and General Ledger. £675

FRANCIS BUTTERS
Cornerstone
Fifield
Maidenhead
SL6 2PF
Telephone: Maidenhead (0628) 27112

TANDY MODEL 1 HARDWARE FOR SALE.

48K MODEL 1 (With numeric key pad).

GREEN SCREEN MONITOR.

2 40 TRACK TANDY DISK DRIVES.

OPERATING SYSTEMS AND SOFTWARE.

THE ABOVE SYSTEM HAS HAD LITTLE USE OFFERS TO :-

TONY TULLY. (0303-873666) EVENINGS & WEEKENDS.

FOR SALE

TRS80 MODEL 1, 48K
COMPLETE WITH TWO DISK DRIVES,GREEN SCREEN MONITOR,
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DOUBLE DENSITY BOARD FITTED, GIVING 40 TRACKS.
VARIOUS SOFTWARE.
£550.00 o.n.o.

A.J.Darwood (0603) 660596

FOR SALE

SS/DD TEAC DRIVE, 40 TRACK, WITH P.S. AND CASE.
SOME SOFTWARE ALSO.
£100.
Richard Marks,
23 College Cross,
London N1 1FT
Tel: 01-609 1340

Video Genie with lower case
32k expansion box with disc drive controller
RS 232
Programmable sound generator
Double density board

The lot £200 or break down

B.M.Morris
48 Oldstead
Crown Wood
Bracknell
Berks
RG12 3UE
Tel: (0344) 56475

ITEMS FOR SALE

80-MICRO magazines March, May, & June 1983. Less than twenty of each left now at £1.50 each or £4.00 for all three. Post & packing EXTRA: £1 for one copy, another 50p for each additional magazine. Alternatively you can reserve copies, by pre-payment, for collection at any of Natgug's 1984 English meetings - sorry, Scotland!

The Banned Big Five Cassettes (for Model I & III). Robot Attack and Galaxy Invasion, just £1.45 each +20p p&p.

Model I speed-up kits to run at 2.66Mhz. Seven sold and no complaints, just three left at £19.50 p&p free.

Epson MX80 cartridges, new, with black ribbons. £6.50 plus 50p p&p, or collect at a Natgug workshop.

7-page list of 80-Micro corrections and addenda, from 1980 through to March 1984. Shows original article title, and the page number and date of the issue with the correction. 50p plus 14p p&p.

David Washford.
1 Alexandra Road,
BOURNEMOUTH,
BH6 5JA.

FOR SALE

TRS-80 MODEL I, 48K WITH 3 DISK DRIVES, IN A SMART WOODEN 'BLANDFORD BOX', TANDY GREEN-SCREEN MONITOR, TANDY PRINTER VIII, ALL RELEVANT MANUALS + SCRIPSIT. ALL IN EXCELLENT CONDITION.

£800 O.N.O.

BOB BUTLER SHEFFIELD (0742) 884778

MR FLOPPY DISKETTES in case anybody wonders whether they are for real, they are. I have been using them for several weeks, both single and double density and they have proved to faultless so far.
Derek Doherty (01 743 7633) has the following items for sale:- Model 1 with GNOMIC uPgrade to 48k, Cassette Recorder and Green Screen, GNOMIC lower case, GNOMIC interface and masses of software. Offers invited.

Peter Hall (0273 - 684286) would like to buy the MODEL III ROM disassembled from a member.

Mike Gibbons is interested in a completed MAPLIN MODEM, if any member has one surplus etc.

Brian Pain would like the wiring instructions on the RS232 for the MODEL III, and for the TANDY hi-res board/Model i version.

If anybody is passing, Brian Pain still has a load of 80-US which are free to callers. The postage works out at around 30 pence so they no longer go out to prospective members.

NATGUG back issues:-

Volume 4 half price 7.00
Volume 3 half price 7.00
Volume 2 half price 6.00
Volume 1 9tr price 2.50

The above is to help members, and obviously help the group.

****

BLANDFORD IS ON THE SUNDAY 19TH AUGUST 1984

thanks to Dave Washford.

****

Would any member like to do around 10 to 15 pages on file handling - NEWDOS 80 V2.0, DOSPLUS, LDOS etc as Jim Norris's were on TRSDOS, and we could do with some tutorials on the other DOSes

Comments and thoughts on the workshops at Swindon and Cambridge.

Swindon. In 1984 and 1985 members should see a policy of 'spaced' out meetings, with two at Swindon - March and November, two at Milton Keynes January and July with others in areas not that well served by local sub-groups.

At the last Swindon meeting it was found that MK was too close, and MK will now be moved back. There also appears to be a money problem in the membership, and that is why every attempt is made to make the cost of attendance at MK as low as possible

which is not quite on when using a hotel.

It must be realised that gone are the heady days where numbers were always on the up, and workshops are a different financial ball game.

As a result of Ed Rashbrooke's session on the Friday it was agreed to publish the sessions as early as possible, and develop a longer business oriented type programme. There appears quite a demand for sessions on setting up TANDY programs eg PROFILE, and now that DBASEII works on GENIEIII, as well as the TABS packages, members will see an emphasis on this type of workshop, in the absence of other ideas.

I had hoped others would write in on the other sessions as domestic priorities came ahead of the workshops.

CAMBRIDGE 28t April

Here there were three sessions :-
Geoffrey Goldberg on NEWSCRIPT, Laurie on membership database problems and using the speed of m/c for screen designs.

As I have just gone over to SCRIPSIT - which has taken n years, I sat in on Laurie's sessions. The database problems spanned around 4 years, and the current solution is a MODEL III with 80 track double sided and ND80 v2. The screen design session left me green on the apparent ease of m/c's use, and a little smug on Laurie's use of the overhead projector slides.

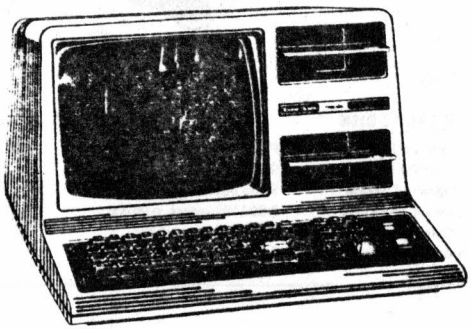
The MODEL 4P made its first appearance. How slick it looked and how slow it performed in those first few minutes of use. It accepted my Model III TRSDOS and ND80v2 without any problems, and Ken Arnsten's TRSDOS 6 as well. It did not like the T-DOS (stripped down version of DOSPLUS), but perhaps somebody else could have a go.

Brian Pain

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Inner Liner	Synthetic nonwoven material
Overall Dimensions	5.25 inches, square

MAGNETIC DISK

Substrate Material	Polyethylene terephthalate
Substrate Thickness	0.003 inches, nominal
Magnetic Coating	Resin bound nonoriented oxide
Coating Thickness	0.000100 inches, nominal
Inside Diameter	1.125 inches, nominal
Outside Diameter	5.125 inches, nominal

CERTIFICATION AND MAGNETIC DATA

CERTIFICATION

Disks Certified	All disks, 100 percent
Test Format	40/80 tracks per side, minimum
Track Spacing	48/96 tracks per inch
Test Method	Bit by bit comparison
Acceptance Level	0 errors, all disks
References	Industry standard, ANSI

MAGNETIC DATA

Recording Density	7958 Bits per radian, maximum
Transfer Rate	250,000 Bits per second
Level and Resolution	Industry standard, ANSI
Modulation	10 percent, maximum

OPERATIONAL CHARACTERISTICS

TORQUE

Starting	1.42 ounce inches, maximum
Running	Between 1.0 and 4.6 ounce inches

HEAD AND PAD LIFE

Duration	92 hours
Performance	75 percent Reference, minimum

DISK LIFE

Revolutions	5,000,000 minimum
Typical Conditions	72 degrees F, 50 percent humidity

ENVIRONMENT

Operating Temperature	50 to 125 degrees F
Operating Humidity	8 to 80 percent
Maximum Wet Bulb	85 degrees F
Shipping Temperature	−40 to 125 degrees F

COMPATIBILITY

Manufacturer	Educator	Educator (Alternate)
APPLE	1530	1540
ATARI	1530	1540
IBM	1540	1580 (double side)
RADIO SHACK	1540	–
COMMODORE	1530	1540
TEXAS INSTR.	1530	1540

For additional machine compatibility/contact COMMAND ASSOCIATES.

RE-ORDER NUMBERS

1530 Singled Sided – Single Density – Soft Sector – Hub Ring
1540 Single Sided – Double Density – Soft Sector – Hub Ring
1580 Double Sided – Double Density – Soft Sector – Hub Ring

Brian Pain is currently testing some of the above - s/d & d/d the data being membership records.

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Reg No. 955955 Eng

NATGUG NEWS

Volume 5 Number 11 May 1984

OFFICIAL JOURNAL OF THE

National TRS-80

& Genie Users

Group.

INFORMATION ON THE GROUP

Membership of the Group is by subscription to the Newsletter, which is published monthly. Membership details are obtainable from the Group Secretary. Membership of the Group is open to anyone with an interest in the TRS-80 range of microcomputers, and compatible systems such as the Video Genie.

Details of the Group accounts and the constitution of the Group are obtainable from the Secretary.

Members requiring assistance with problems related to the TRS-80/Video Genie may call the Secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops are arranged from time to time in various parts of the country.

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time. Sub-groups also exist for medical and educational users.

The Group runs 80-NET, a computerised bulletin board service that is available to all users of microcomputers.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are obtainable from the Secretary. The medical and educational sub-groups mainvain their own libraries.

A membership list is obtainable on disk from the Secretary.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

Chairman and Newsletter Editor:-

Leon Heller,
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EDITORIAL

A lot of members seem to be selling their systems, judging from the number of advertisements we have had in the last couple of issues. I wonder what they are getting in place of their TRS-80s and Genies?

As I am writing this editorial, we are getting ready for the Earls Court Computer Fair. NATGUG and IQLUG will be having a joint stand. Apart from organising this, I am also organising the Amateur Computer Club stand. One hears of people wearing two hats, but three hats must be very unusual!

I recently attended my first Scottish workshop, in Edinburgh. I found it very enjoyable, if exhausting, and was most impressed by the enthusiasm and expertise north of the border. The Scottish group has been transmogrified into STAQLUG, the Scottish TRS-80 and QL Users Group.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. If possible, send material in printed form.
2. Scripsit or Pencil disks/cassettes are acceptable.
3. Ensure your ribbon is in reasonable condition.
4. Printer output should be on A4 paper if possible.
5. If you send in hand-written material, write legibly.
6. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

LIBRARY INFORMATION

Model I: Leighton Davies, 105 Caerau Road, Caerau, Glamorgan. Tel: (0656) 738337

Model II: Jim Hutton, 25 High Street, Stroud, Glos. Tel: (045 36) 4423

MEMBERS' LETTERS

From John Kilpatrick,

Here are answers to some of the questions asked in the March issue.
I have a copy of Fortran for the Model one but no documentation, I gave it away some time ago & can't remember to whom, but Paul Godier is welcome to contact me any time.
What Tandy have done is to sell off all Model 1 software cheap to make room for current programs, as a result of this policy I see no reason why people shouldn't let their friends have a copy of any Model 1 programs without any qualms about copyright,(??).
I have a patch that should correct J.R. Williams problem with Pencil, it enables him to use the CLEAR key as control, the patch is on tape & if he contacts me I will let him borrow it.
There are one or two Format programs for Model 100 text published in 80 Micro that should help Ken Robinson, & use of the ESC key is well documented on pages 174 & 175 of the January issue, the same issue that has the program for saving '100' programs to Model I disc published in last month's news, this works equally well on the model 3 if two instructions are changed & 4 lines added. They are as follows:-

```
400 HIMEM  EQU  4412H
410 CMD    EQU  4225H
Add:-
0945  INC    A
1642  LD     A,(DCB+12)
1644  DEC    A
1646  LD     (DCB+12),A
```

The March issue of 80 Micro advertises some programs on page 185 that might be of even more use to Ken & also some additional items on text formatting from page 191.

E.C.Kilpatrick,
3a Gainsborough St,
Sudbury.
SUFFOLK. CO10 6ET.
Phone 0787 79504.

From Ariela Tayler

I was pleased to see Brian's comments (at the end of the last NATGUG news) on future workshops. Better spacing is certainly welcome. We do miss the Southall days that used to come neatly between the two MK weekends each year. And is it too late to widen the 3 week gap between the next Milton Keynes and Blandford ? Dorset in August probably won't be very enjoyable driving either.

As one of the 'DBASE II on Video Genie' users I also welcome more emphasis on larger business type programmes for future workshops. My impression is that the smaller membership has left us with a higher proportion of 'serious' users and weekends are likely to be easier to get to than Fridays for most of us.

Could I also make a plea for sessions on CPM, like the ones we used to have on NEWDOS 80. If our local group is representative there are now quite a few of us who have to work with CPM as well as Tandy DOSes . The Video Genie 3 has been around for over 18 months and Model 4 CPM is now actually here. CPM is not the most 'user-friendly' of operating systems, particularly after Newdos, Multidos, or Dosplus, its official documentation is opaque to non - experts and the documentation that comes with most CPM programmes I've looked at is noteasy either. There ought to be members somewhere who have got far enough to know what they are doing with CPM but are not so expert that they've forgotten what it was like to start with. There may be enough of us interested to justify including reviews on CPM programmes and books in the Newsletter too. What does Leon think?

Ariela Taylor

(* I am all in favour of the inclusion of CP/M material in the Newsletter. Of course, there is always the CP/M Users Group, but their newsletter tends to be heavy going in places. LFH *)

PROBLEM SECTION

I would be grateful if you could forward to me details of your Group as we have recently installed TRS80 equipment within our Company. Our main interests would be educational, as our existing system is being utilised for the teaching of basic computer skills on the Youth Training Scheme. We are also looking towards training for both general and specific applications in the business world, i.e. re-training and familiarization, as well as development training in areas such as word processing, accounts, spreadsheets, etc.

At present we have a ten station Network 3 system using cassette based Model III's, a DMP2100 printer, and a 48K 2-disk Model III as host computer. This is being developed shortly with 5 additional models (probably Model 4's), as stand-alone twin-disk systems.

Our major problem is the availability of suitable software to operate on the system. Tandy Corporation will only support an extremely limited and outdated range of software which is totally unsuited to our major requirements.

What we need is a range of instructional software packages which would cover general computer literacy, and also explain simply the principles behind Accounting, Stock Control, etc. If you know of any suitable software for our system which covers these areas I would be most grateful.

J Herron,
Information Technology Consultant,
Lampitt and Partners Ltd.,
Bond House,
Bond Street,
Wolverhampton,
WV2 4AX.

I use an expanded Genie I mainly for serious business use.

I am interested in exchanging programs, ideas and assembly language subroutines.

Please tell me about the aims of your club and let me know how much of your activity relates to the Genie rather than the TRS80.

I am currently unable to get Scripsit to load text tapes. Have you met this problem before ?

I have the chance to buy a DP1000 disc/Printer interface for the TRS80 level I with small DOS. Is conversion to the Genie possible ? I am an Electrical Engineer and I am happy to make reasonable hardware mods.

Allan Fowke
28 Queensway
Sawston
Cambs CB2 4DJ

(* I believe that Lowe's used to sell an adaptor that enabled the use of TRS-80 peripherals with the Genie.
Your problem with Scripsit is due to the hardware differences between the Genie and the TRS-80. Has anyone got a patch? LFH *)

OF GUGGERS, MUGGERS, LUGGERS AND CP/M

The weather has been really good lately and this is the time of the year when needs (and "She who must be obeyed") drive one to the overgrown garden and there is not much time left for computers.

As far as we, Model 4 owners, are concerned things have started to move even though slowly. Scripsit, Visicalc, Multiplan and finally CP/M+. Few more words about the latter later but, in preparation for this great event, I have joined the CP/MUG (UK) so now I am not only a gug (whatever that may be) but also a mug and I do know what that means.

Well what is the difference between gugger and mugger ? Mugger receives a really posh looking Journal. There are supposed to be four of those in a year but, since June 1983, only two have been produced. As a new member I received both copies and I enjoyed looking through them even though a lot went above my head as was the case with the NATGUG, when I first joined the Group.

The first thing which I noticed was lack of any information about the Group similar to the page two in NATGUG. Also, most of the material in the Journal appears to be written (very well too) by the two or three obviously knowledgeable individuals. There are members' letters too but there are not that many of those. To be quite honest I do prefer the NATGUG collection of "I bought Model 1 and please tell me how to switch it on" to the wizardry of "LD HL,(Y1)" whatever that may mean if it means anything at all. What I am trying to say is that NATGUG is written by the members and nobody needs to worry about his knowledge - there is always bound to be someone who knows less. It would take however a brave man to parade his limited know-how in the Journal.

The beauty of our group is the help-line and I have used it many a time in the past. I found no such line in CP/MUG. There is an address where one can write, or ring and I have tried to get advice on the choice of Pascal for CP/M, as CP/M+ does not come with any high level language. I also wanted to know whether Epson FX100 can be interfaced to the WordStar. The address quoted does however contain a high technology answering machine which reminds me of Shelley Berman. He wrote (and performed) a rather splendid bit about the airlines and a stewardess who could only say "Coffe, tea or milk ?". The CP/MUG answering machine can only say "Send me two Pounds and diskette".

CP/MUG has an extensive library, I believe some 200 8" disks. Also quite sizeable portion of the Journal is devoted to the library catalogue. I find this bit rather obscure and I cannot puzzle out what languages etc I require to run any of the library programs. Otherwise there are no other activities. Until 1982 an annual seminar was held but there was none in 1983.

Both groups seem to suffer however from, should one say, a loss of direction. There is a feeling, at least in the high echelons, that all has now been done and what now ? Whether one hears it expressed in the complaints that Tandy does not produce any interesting products, or that Sirius and IBM dominate the market, it all amounts to an admission that both groups have reached the end of the road.

So much about CP/MUG, and by comparison NATGUG. However what about the intrepid luggers. I believe that ~~that~~ the brave organisers drool over the the glossy pictures and splendid specifications, brave entrepreneurs are producing boards and other bits of adds, programs which will run dozens interacting programs simultaneously are being marketed, orders for the beast are pouring in by hundreds of thousands and even 80Micro anticipates that some couple of hundreds of the beast may be sold in USA for Xmas. The only fly in this jubilation is that not even one specimen of this poor man's Super VAX has reached a customer yet. Some people never learn.

Finally I have CP/M+ and I don't know how Tandy managed to do it. It must be that the acute embarrassment at making $160.9 million profit on $1.48 billion sales in the last four quarters has moved them to giving the purchaser of CP/M+ five diskettes and six manuals for a ridiculous price of under 80 Pounds. And what manuals too - the best documentation I have ever seen - and an absolute must for a programmer. The manuals come in a box containing two hard cover binders. Each binder houses three manuals. The first binder has Model 4 Reference Manual (Model 4 emulates DEC VT52), User's Guide and Programmers Guide. The second binder has System Guide, SID Reference Manual and Programmer's Utilities Guide. It will take me weeks to go through all that but, after a quick look, I feel that maybe I could venture into assembly programming. The calls to BIOS and BDOS make it all so much simpler.

I was going to list the programs on all five diskettes but found it too tedious. So, instead, I made use of the directory command DIR (FULL) and I enclose the prints of all the directories. A very impressive array. It is a pity that no Interchange program is included but I believe that CP/M+ can read the CP/M-86 format. I shall know whether this is so shortly as I have ordered Z80 Pro Pascal on CP/M-86 formatted disk. If I cannot copy it then I will have to make use of my friend who has the

"best CP/M for Model 4". The interchange program provided by Montezuma Micro has many possibilities. Also this CP/M has Memlink which uses the extra 64K as RAM disk. CP/M permits up to 16 drives and linking of the same physical device to more than one logical devices. If using Memlink RAM disk this is always logical drive M:. Now try this:

Call Memlink, copy to it PIP and INTERCHG and log drive M:.
Using Interchg define drive 1:(B:) as say CP/M-86
Define drive 0:(C:) as CP/M+
Define drive 0:(D:) as Osborne DD and so on.

(Logical drive A: must always be CP/M 2.2 Montezuma Micro)
Now you can copy from :1 to several formats on 0: providing you don't get your diskettes mixed up. I am sure that it will not be long before similar interchange programs will start appearing for Model 4. It is said that most CP/M 2.2 programs do run under CP/M+, and Model 4 is selling very well in USA, and I am told that the sales in UK are very good also.

Sometime when garden and house decoration will become less pressing I will try to go through CP/M+ inbuilt, transient commands and write something about them and Pro Pascal, if the authors allow. In the meantime although Tandy cannot produce any interesting computers and CP/M has reached the end of it's usefulness I stand on threshold of discovery and there is still so much to learn.

Anon.

Directory For Drive A: User 0 (BANKED cp/m)

Name		Bytes	Recs	Attributes	Name		Bytes	Recs	Attributes
CCP	COM	4k	25	Sys RO	COPYDISK	COM	36k	281	Dir RW
COPYSYS	COM	3k	20	Dir RW	CPM3	SYS	23k	184	Sys RO
DATE	COM	3k	22	Dir RW	DIR	COM	15k	114	Dir RW
ERASE	COM	4k	29	Dir RW	GET	COM	7k	51	Dir RW
PIP	COM	9k	68	Dir RW	PUT	COM	7k	55	Dir RW
RENAME	COM	3k	23	Dir RW	SET	COM	11k	81	Dir RW
SETDEF	COM	4k	32	Dir RW	SHOW	COM	9k	66	Dir RW
SUBMIT	COM	6k	42	Dir RW	TYPE	COM	3k	24	Dir RW

Total Bytes = 147k Total Records = 1117 Files Found = 16
Total 1k Blocks = 147 Used/Max Dir Entries For Drive A: 19/ 64

Directory For Drive A: User 0 (UNBANKED cp/m)

Name		Bytes	Recs	Attributes	Name		Bytes	Recs	Attributes
CCP	COM	4k	25	Sys RO	COPYDISK	COM	36k	281	Dir RW
COPYSYS	COM	3k	20	Dir RW	CPM3	SYS	16k	126	Sys RO
DATE	COM	3k	22	Dir RW	DIR	COM	15k	114	Dir RW
ERASE	COM	4k	29	Dir RW	GET	COM	7k	51	Dir RW
PIP	COM	9k	68	Dir RW	PUT	COM	7k	55	Dir RW
RENAME	COM	3k	23	Dir RW	SET	COM	11k	81	Dir RW
SETDEF	COM	4k	32	Dir RW	SHOW	COM	9k	66	Dir RW
SUBMIT	COM	6k	42	Dir RW	TYPE	COM	3k	24	Dir RW

Total Bytes = 140k Total Records = 1059 Files Found = 16
Total 1k Blocks = 140 Used/Max Dir Entries For Drive A: 18/ 64

Directory For Drive B: User 0

Name	Bytes	Recs	Attributes	Name	Bytes	Recs	Attributes
CPM3 LIB	4k	32	Dir RW	CPMLDR REL	3k	23	Dir RW
DEVICE COM	8k	58	Dir RW	DIRLBL RSX	2k	12	Dir RW
ED COM	10k	73	Dir RW	GENCOM COM	15k	116	Dir RW
HEXCOM COM	2k	9	Dir RW	LIB COM	7k	56	Dir RW
LINK COM	16k	123	Dir RW	MAC COM	12k	92	Dir RW
MODEBAUD LIB	1k	8	Dir RW	PATCH COM	3k	19	Dir RW
PORTS LIB	2k	14	Dir RW	RMAC COM	14k	106	Dir RW
SAVE COM	2k	14	Dir RW	SID COM	8k	64	Dir RW
TRS4PORT LIB	5k	38	Dir RW	XREF COM	16k	121	Dir RW
Z80 LIB	6k	47	Dir RW				

Total Bytes = 136k Total Records = 1025 Files Found = 19
Total 1k Blocks = 136 Used/Max Dir Entries For Drive B: 19/ 64

Directory For Drive B: User 0

Name	Bytes	Recs	Attributes	Name	Bytes	Recs	Attributes
ASSIGN COM	14k	108	Dir RW	GENCPM COM	21k	168	Dir RW
HELP COM	7k	56	Dir RW	HELP HLP	67k	532	Dir RW
INITDIR COM	32k	250	Dir RW				

Total Bytes = 141k Total Records = 1114 Files Found = 5
Total 1k Blocks = 141 Used/Max Dir Entries For Drive B: 11/ 64

Directory For Drive B: User 0

Name	Bytes	Recs	Attributes	Name	Bytes	Recs	Attributes
BACKREST 001	8k	59	Dir RW	BACKREST 002	14k	111	Dir RW
BACKREST 003	12k	96	Dir RW	BACKREST COM	15k	116	Dir RW
BIOSKRNL ASM	16k	125	Dir RW	BOOT ASM	3k	24	Dir RW
CALLVERS ASM	1k	5	Dir RW	COPYSYS ASM	15k	117	Dir RW
COPYSYS COM	2k	15	Dir RO	CPMINIT COM	3k	20	Dir RW
DRVTBL ASM	1k	2	Dir RW	DUMP ASM	4k	32	Dir RW
ECHOVERS ASM	1k	7	Dir RW	FD1797SD ASM	11k	81	Dir RW
MOVE ASM	1k	6	Dir RW	RANDOM ASM	11k	86	Dir RW
SCB ASM	3k	19	Dir RW	SETUP COM	32k	252	Dir RW

Total Bytes = 153k Total Records = 1173 Files Found = 18
Total 1k Blocks = 153 Used/Max Dir Entries For Drive B: 19/ 64

GNOMIC NEWS

Just a few lines to let you know that I have recently changed jobs and I am now working for General Northern Microcomputers Ltd. (GNOMIC). It's a bit of a busmans holiday for an old Genie user like myself.

We have recently released the GNOMIC RS232 interface for the Genie and TRS80. It is self contained, plugging onto the computer, either directly or via a splitter cable. The interface has been designed to be compatible with the Tandy RS232, so software for that hardware will run without problem.

At the same time as the RS232, we have also put the MultiModem on the market. It has UK, American and Prestel standards. It is also self contained and is rather neat.

The DP1000 and DP2000 series are still doing well as people with Genies and TRS80s realise that the computer is too good to throw away and upgrading is a better choice. The cabinet for the DP2000 is now in two-tone and looks extremely smart.

GNOMIC will continue to support the TRS80 and Genie for as long as there is a demand, with new products coming along from time to time. Our service department will look after any "poorly" machines, so owners need not worry as far as repairs or service are concerned.

We also supply BBC and other hardware, and the GNOMIC QFS replacement for the BBC DFS is proving to be very popular. A new range for us is the SANYO 550 range of 16 bit computers, the Basic of which is very TRS80. It is a nice machine and I bought one myself (I still have the Genie with 4 drives).

Any members requiring help or advice may contact me directly at GNOMIC (0783) 860314 or at home (0632) 561761.

Regards .... Ken Grey

```
10 REM PRINT USING POUND SIGN- FOR MODEL III
15 CLEAR 5000:CLS
20 A$="$$####.###.##":A#=123456.78
30 DUMMY$="":POKE VARPTR(DU$),34
40 GOSUB 200:PRINT USING A$;A#;:PRINT" ";:GOSUB 300
45 K=K+1:GOTO 40
198 REM ***
199 REM CALL TO SUB AT 200 MUST IMMEDIATELY PRECEDE PUSING STATEMENT
200 X1=PEEK(16416):X2=PEEK(16417):IFX2=63:IFX1>191:X1=X1-64
210 RETURN
298 REM ***
299 REM CALL TO SUB AT 300 MUST IMMEDIATELY FOLLOW PUSING STATEMENT
300 POKE VARPTR(DU$)+1,X1:POKE VARPTR(DU$)+2,X2
310 X3=INSTR(DU$,"$")
320 X4=X1+X2*256+X3-1:POKE X4,1:RETURN
```

Hope someone finds this useful

from Chris Currie, 41 Elmar Rd., London N15

SBE - a Simple But Effective machine code generator

SBE comes from the same source as ACCEL, EDIT and ENB which are generally regarded as among the better serious programmes for the TRS 80. It is a system which simplifies and speeds up machine code programming by allowing you to write,save ,test and debug in almost normal Basic and produce relocatable /CMD,/OBJ,/REL or /CIM files - EDIT and ENB were written with SBE.

SBE generates machine code instructions direct from your programme code so TRS-80/SBE programmes will run on any Z80 system, not just TRS-80s. An IBM PC version of SBE is also available ,generating code for 8086/8088, which means that TRS-80/SBE programmes can be transferred to the IBM PC, although system specific calls obviously must be changed.

SBE should run with all the usual TRS 80 DOSes and was happy in both 64 and 80 character Newdos 80(2) on our Video Genie 3. Just type SBE <ENTER> and it loads, protects itself and leaves you in Basic with normal editing, load and save.

When ready to try out what you've written the command /CLS compiles the programme. Save it first though! Although syntax errors and missing definitions are trapped and can be corrected immediately other errors can have the same exasperating results as in Assembler - and BASIC * does not work in SBE .

After compiling /RUN runs your programme. TRON/TROFF commands are used to single step all or part of it. Stepping is by programme line and the line to be executed , registers, programme counter and stack pointer are displayed at each pause point. While paused you can examine named variables and memory locations, call a subroutine or enter a new line number to restart single stepping from.

Once the programme runs properly return to DOS and type CUT name/ext Xnnnn (nnnn is printed at the end of each compilation) to create the /CMD etc file. This is now a stand-alone relocatable machine code programme and does not need SBE to run. Very large programmes need to be written in modules of less than 10K and linked together, a simple process with the linking utility dealing with all cross-references.

SBE programmes look like Basic, with Assembler overtones and some syntax which is specific to SBE - (see examples). Named variables can be used as in Basic , can be longer than 2 characters but must be individually initialised. Values can be addresses,including ROM calls e.g. DEF DISPLAY:&H033A ensures that the ROM routine at 033A is called by the word DISPLAY whenever it occurs in the programme. In addition the registers (and register pairs) A B C D E H and L can be treated as variables although with the limitations imposed

by the Z80 instruction set. Stack management is your responsibility, as in Assembler but as registers and stack pointer are displayed when in trace mode this is not too difficult even for those with no Assembler experience. IF/THEN/ELSE, FOR/NEXT loops and GOSUB and GOTOs are similar to Basic but use labels instead of line numbers. SBE's CMD statement allows transfer of information from the call to the subroutine e.g. in lines 500-530 of example 1 the Ascii codes in brackets are passed to the subroutine in line 620 which sends them in turn to the printer.

SBE does not attempt to generate all Z80 instructions directly. Assignments (A=10,DE=(HL)), modification (HL+1,CP+64), and comparison (IF HL>DE, IF A="0") are directly supported. Other functions like rotates and block moves are used by simply putting in the hex codes, either directly into a programme line or as a macro (Macro is used in same way as in DBASE and not as in Assembler- i.e. as a shorthand which is expanded at compilation - see example 2). This system makes it easy to translate ordinary Assembler listings into SBE. Example 2 is a screen flash routine extracted from a long game listing in Hardin Brothers' last article on Assembler in 80-Micro. Example 1 is derived from Michael Tomlinson's printer setting programme in June NATGUG plus a similar one in an old 80-US

Documentation for the TRS 80 version of SBE consists of a 62 page manual and a Z80 instruction summary booklet. About half the manual deals with the language and how to use it; the rest includes descriptions of Z80 chip operations and stack manipulations, annotated programmes illustrating Basic USR routines, file processing and creating new Basic 'commands', a long list of ROM calls and useful addresses and a list of the most often used macros. The manual doesn't quite live up to the Simple bit of SBEs name and makes few concessions to Assembler ignorami but there is a long tutorial file on the disk which should bridge the gap as well as providing a small library of useful functions like message and graphics display, maths,keyboard input and file i/o.

SBE for the TRS / Video Genies costs almost £50, not a sum to be spent lightly, so is SBE really simple but effective and is it worth buying?. Our opinion is definitely 'yes'. One of us had only programmed in Basic and DBASE II before trying SBE but wrote a useful small machine code utility the first evening. The other was already familiar with Assembler and found SBE to be quicker and easier than his usual tools of ZEN and Tasmon. It really does make writing machine code almost as easy as Basic and we haven't found any disadvantages so far. We've not tried programme migration yet but would be surprised if this didn't work as claimed so maybe we'll be able to use our favourite programmes on our next computer too.

Ariela and Geoffrey Taylor
54 Barn Hill
Wembley

Programme listing 1 - sets the Epson printer from a DOS command line, eg PSET CD"Monday 17th" puts it into condensed type and double spacing and prints day & date

```
5 SYSTEM RELOC(,256)
10 'PSET/CMD - runs on TRS or Video Genie with Epson
20 DEF DISPLAY:&H033A
50 DEF PRINTER:&H003B
100 HL-1 'HL points to 1st non blank char of DOS input buffer
110 GETLET:HL+1,A=(HL)
120 IF A=13 THEN A=10,RETURN ' empty print buffer
130 IF A="D" THEN GOTO MS1 ELSE IF A="C"THEN GOTO MS2 ELSE IF
A="B"THEN GOTO MS3 ELSE IF A = "S" THEN GOTO MS4 ELSE IF A =
34 THEN GOTO MS5 ELSE GOTO ERRMESS
500 MS1:LPR(27,51,70),GOTO GETLET 'double line spacing
510 MS2:LPR(15),GOTO GETLET 'condensed
520 MS3:LPR(27,69),GOTO GETLET 'bold
530 MS4:LPR(27,78,4),GOTO GETLET 'skip perfs
540 MS5:HL+1'print characters between ""s
560 A=(HL),IF A=34 THEN A=13,PRINTER,GOTO GETLET
570 PRINTER,GOTO MS5,RETURN
620 PR:CMD,B=(HL),FOR,HL+1,A=(HL),DISPLAY,NEXT B,RETURN
650 LPR:CMD,B=(HL),FOR,HL+1,A=(HL),PRINTER,NEXT B,RETURN
1000 ERRMESS:PR("NO SUCH OPTION AVAILABLE - please repeat
command line",13)
1001 PR("only  B(old)  C(ondensed)  D(ouble space)  or
''text'' allowed"),RETURN
```

Programme listing 2 - screen flash routine, from Feb 80- Micro - demonstrating use of instructions not directly supported by SBE .

```
10 DEF BLANK:&H01C9
11 DEF DISP:&H033A
12 DEF CP:&H4020
13 DEF LINEINPT:&H05D9
14 DEF INPT:&H0049
15 DEF DELAY:&H0060
16 DEF INKEY:&H002B
100 START:BLANK,GRPHCL
110 CP=15768,PR("T I T L E")
120 CP=15896,PR(191,191,191,191,191,191,191,191,191,191)
130 BC=&HFFFF,DELAY,FLASH
140 INKEY,IF A <> 0 THEN RETURN
150 BC=&H00FF,DELAY,START
199'fill screen with blanks so can be reversed
200 GRPHCL:HL=&H3C00,DE=&H3C01,BC=1023
210 £(HL)=128,LDIR,RETURN
220 FLASH:HL=&H3C00
229' check bits to see if graphic char. if so reverse them
230 CHANGE:A=(HL),RLA,THEN >= GOTO NEXTCHAR
240 RLA,THEN < GOTO NEXTCHAR
250 CPL,RRA,SCF,RRA
260 £(HL)=A
270 NEXTCHAR:HL+1,A=H,IF A = $"40" THEN RETURN ELSE GOTO
CHANGE
280 PR:CMD,B=(HL),FOR,HL+1,A=(HL),DISP,NEXT B,RETURN
1000 'MACROS for block move,rotate,complement etc
1010 %LDIR%$"EDB0"
1020 %RLA%$"17"
1030 %RRA%$"1F"
1040 %CPL%$"2F"
1050 %SCF%$"37"
```

MODEL 4

NOTES ON CP/M 3.0 PLUS by Roy Barber.

CP/M 3.0 Plus from Tandy comes on a set of five, 5 1/4inch disks. It is supplied boxed in a nice container in which the two, 3 ring binders containing the documentation fit. The five disks are in a plastic wallet inside one of the binders.

The main CP/M system is on one of two disks. Two versions of the system disk are provided as a different operating system is necessary for banked or unbanked memory. The unbanked disk is for 64k systems and the banked version is for 128k systems.

The remaining disks hold various utilities not normally necessary on the system disk.
A list of the contents of each disk is provided at the end of this article.

This CP/M is the standard version which has been adapted for the Model 4 by Digital Research. This is apparent from the documentation which is all clearly marked as supplied by D.R. The 3.0 Plus modifications for Model 4 appear to be mainly contained in one file called SETUP. This allows various temporary or permanent modifications to be made to the CP/M system to suit the user. A full list of all the options available is too long to list in detail but a summary is as follows:
Optional line wrap on the screen, block or underline cursor, clear screen on form feed and blinking or steady cursor (which does not work !!).

The disk choices are: Number of drives, step rate (not active, seems set at 6mSecs), number of hard drives up to 4, error messages, and number of error retries.

Printer options are: supress line feeds on carriage return, auto form feed, set lines/page, and set number of lines before form feed.

Keyboard options are: type ahead buffer on/off and program special function keys, (quite useful as any user choice can now be put on these keys).

Serial port options are: select Baud rate, set line protocol for xon/xoff, select CTS/RTS etc. Also word length and stop bits can be set up.

Auto boot options allow auto execution of a warm boot file. A better choice would have been a cold boot auto execution file !. A 50/60 Hertz line frequency choice can be made which allows the R.T. clock to maintain time correctly.

A file called COPYDISK allows formating and backing up disk operations. This does not work correctly. One of the options is

to allow system tracks to be copied. (The equivalent of SYSGEN in Vers.2.2). It does not put all the system on the destination disk as it should and the disk will not boot !. I have found this can be overcome by ignoring the instructions in the general user handbook provided. This says that the program COPYSYS is only for 8inch disks. If COPYSYS is used for 5inch disks it does put the system tracks on correctly. It will ask if CPM3.COM is to be installed. The user should answer Y for yes. This will copy this system file over to the sysgen'd disk. The job of sysgen is not yet complete however as although the disk will now boot it will look for another file called CCP.COM. This is also a system file and can be copied over to your sysgen'd disk using PIP with the (R) option which allows the copying of a system file. This is all a lot of unnecessary additional work to have to do when the COPYDISK program should do it in one operation. I understand Tandy is looking in to this problem. After sysgening a disk one has about 128k left to use.

One of my most serious criticisms of this version of CP/M is that there is no option for double sided drives. To my mind this is a major ommision. Also only four floppy drives are allowed so one cannot even reconfigure three double sided drives as six single sided drives using a hardware modification.

As CP/M users will/should know, it is necessary to install most programs to configure them to work from the particular terminal your CP/M supplier has emulated in his version of CP/M. Most CP/M suppliers make the computer emulate the popular ADM3A terminal and when installing a program (like Wordstar) all that is necessary is to select that terminal from the list the program provides and your software is usable on your computer. Unfortunately D.R. (or was it Tandy ?) chose to emulate the DEC VT52 terminal which does not appear on any of the lists of terminals supplied for installation with most CP/M programs. This means the newcomer to CP/M will experience considerable difficulty in running any program needing installation under this CP/M. To further add to the problem the list of terminal display functions provided in the manual is hopelessly incorrect and any attempt to patch the display functions in to a program is likely to cause the user to write off this version of CP/M in frustration.
A list of the correct codes (as far as I can establish) is given below. Only those incorrectly shown in the manual are given here (some were right !) .

Cursor right	27,67 decimal
Reverse tab	27,73
Home cursor	27,72
Restore cursor to saved position	27,107
Erase to end of page	27,74
Erase current line	27,76
Erase to end of line	27,75
Delete line	27,77
Delete character	27,78
E O L wrap-round	27,70
Discard char at E O L	27,68

Some of the hex codes given are also incorrect but if you use

the decimal codes shown you can work these out. You should also be warned that codes 27,110 and 27,111 for erase from start of screen to cursor and read cursor position hang the system and need a cold reboot to regain control.
I have been able to install most CP/M programs using the above codes.
You also need to know that the cursor lead-in characters required by most install programs are <esc>Y or 27,131.

Some of the key codes given for generating special characters are also not clear from the documentation, those most likely to cause trouble are: left and right brace or wiggly brackets. These are obtained by pressing left or right shift keys with the @ key. Clear screen is obtained by pressing clear and caps keys together followed by <enter>.

Regarding the performance of the CP/M this appears OK so far but the failure of the SETUP program to provide the steady cursor presents quite a problem. When using a program like Wordstar the cursor goes out while it is moved so if you want to zip along a line of text you can not tell where the cursor is. I trust Tandy will put this right soon.

The documentation other than that referred to is good and quite detailed. The provision of the MAC assembler with full documentation and the various library files with the link program is probably worth the cost of the whole CP/M. The assembler, although basically for 8080 has macros which allow its use as a Z80 linking assembler.

Hard disk users are well catered for with the ability to drive up to four such devices.

Although the banked memory version of CP/M should provide up to 64k of additional memory, because a lot of the CP/M operating system has to reside in each bank in parallel only about 11k extra is available to the user. This is according to the documentation which says there is 44k available in unbanked and 55k available in the banked version. From this I would think the Montezuma Micro CP/M vers 2.2 gives better value in terms of memory usage. It has to be used as a Ramdisk but 61k is available to the user in this form on top of the normal 48k in the TPA. Also in comparison with Vers 3.0 Plus the M.M. 2.2 is easier to use and very much easier to install to most CP/M programs such as Wordstar as it emulates the much more popular ADM3A terminal. The M.M. Vers 2.2 also allows the use of double sided drives and can read many other useful manufacturers formats.
Perhaps for once Tandy tried too hard to keep the price down and the product has suffered for this reason. The cost of CP/M 3 Plus is £79.95 against the M.M.Vers 2.2 available from Mollmerx at £171.00

If you would like to read more about the Version 3 Plus advantages over the usual 2.2 version get the book 'CP/M The Software Bus'. by Clarke, Eaton and Powys-Lybbe. Its published by Sigma Press and is as good a book on the subject as any. It

gives more information on Vers. 3.0 than most.

P.S. I have been using the Borland CP/M Pascal for a while now. At about £50 its quite first class. More on this later.

PPS. No one has yet given me any real help on how to access the Model 4 screen or keyboard matrix. Whats happened to all the Hackers ?..
Surely The Model 4 is not too much for them?. If they can find out how to copy SuperUtility Plus surely what I want is chicken feed....

CP/M 3.0 Plus disks:
Disk 1
CCP.COM COPYDISK.COM DATE.COM ERASE.COM PIP.COM
RENAME.COM SETDEF.COM SUBMIT.COM COPYDISK.COM CPM3.COM
DIR.COM GET.COM PUT.COM SET.COM SHOW.COM TYPE.COM
Disk: 2
,same as disk 1 but for banked memory.
Disk 3:
ASSIGN.COM HELP.COM INITDIR.COM GENCPM.COM HELP.HLP
Disk 4:
BACKREST.001 BACKREST.002 BACKREST.003 BACKREST.COM
BIOSKRNL.ASM CALLVERS.ASM COPYSYS.COM DRVTBL.ASM
ECHOVERS.ASM MOVE.ASM SCB.ASM BOOT.ASM COPYSYS.ASM
CPMINIT.COM DUMP.ASM FD1797SD.ASM RANDOM.ASM SETUP.COM

disk 5:
SID.COM GENCOM.COM PATCH.COM XREF.COM SAVE.COM CPM3.LIB
RMAC.COM Z80.LIB ED.COM LINK.COM MAC.COM CPMLDR.REL
DEVICE.COM HEXCOM.COM PORTS.LIB TRS4PORT.LIB DIRLBL.RSX
MODEBAUD.LIB LIB.COM

Queries to Roy Barber on 01 304 3856.

Comments on the Genie III.

I've had my Genie III for 7 months now and in spite of some problems with one of the boards I'm very impressed and pleased with it. The ability to run CPM programs has been invaluable for some of my applications - dBASE II and Cardbox being rather superior to any database that you can get under Model 1 & 3 operating systems. The Z80A running at 4 Mz makes a considerable difference to the execution speed of most programs and has stopped me playing some of the arcade games - they're too damned fast.

Two of the major reasons as far as I was concerned that made me buy the Genie III as opposed to the Model 4, were the fact that the Genie had a detached keyboard and ran under NEWDOS-80v2, letting me run the majority of my Model 1 software. I've had no reasons to regret that decision, and routinely transport data disks between the Genie and my old Model 1, to which I still have access. The 80 track, double-density disk system means that with a little care, I can read and write disks for any of the Model 1/3 variations.

The keyboard is much superior to the Model 1/3 and with the aid of Caxton softwares 'Touch-n-Type' both Jill and I have taught ourselves to touch type at about 45 wpm. It took about 10 days with about 30mins each evening to reach that standard, and is well worth doing if you have significant amounts of text to process.

Newdos-80v2 works just fine - there appears to be no halfway house as far as operating systems are concerned, you either hate or love particular ones. I love Newdos-80v2 and hate LDOS so I'm not going to express my biased thoughts on operating systems, however it must be born in mind though that it is very difficult to use any other operating system on the Genie when emulating a Model 1. The one function that I miss in Newdos is the ability to ROUTE to disc. If any one has figured out how to route what would normally go to the printer, to the disc as a file instead, I would be extremely grateful for the information.

Exca have made a reasonable job of transporting NEWDOS and 'Model 1 ROM' to the Genie environment. For those who don't know, the Genie has no proper ROM as such. There are 5 memory banks, one of which contains 64K RAM. The video display, keyboard, disk drive memory etc. is contained in the other banks, and then switched into operation as required, when of course the corresponding area from the 64K RAM is switched out. The system also has an EPROM which contains the bootstrap loader. When reset is pressed, the bootstrap looks to see if you have a CPM or a Newdos disc. If its a Newdos disc, it loads both Newdos and a copy of the 'Model 1 ROM' into memory. This makes the sytem very versatile in that you can muck around with the operating environment in a way just not possible with a ROM based system. However it also means that the system is a little more fragile and when machine code programming, crashes seem to occur more often and are usually quite spectacular.

The Genie III has a number of extra keys. This means that although the main entry points are at the same addresses, the keboard decoding and subsequent character display routines are in a slightly different area of memory. Therefore, programs which have their own partial keyboard drivers may not work properly when they return to the ROM routines. This is the reason that TASMON does not work properly. It can be patched as follows:

For a version starting at D000H, the routine at E9D2H has to be changed-

```
E9D2H       JR Z,E9D5H
            LD (HL),A
            LD A,C
            CP 20H
            JP C,0506H  =>  JP C,04E9H
            CP 80H
            JP NC,04A6H =>  JP NC,04B3H
            LD (HL),A
            CP (HL)
            JP NZ,047BH =>  JP NZ,046AH
            JP 047DH    =>  JP 046AH
```

Similar problems occur with Southern Software's ENB, which I haven't had either the time or inclination to fix as yet.

One of the big attractions of the Genie III is the 80x24 screen which is available under NEWDOS-80. Unfortunately there are very few programs that can take advantage of this facility. In addition, the BASIC editor available in the large screen format is indescribably awful. However, you can get a version of Southern Software's EDIT for the 80x24 screen and I've re-written Scripsit to use the larger format (see advert elsewhere in this issue). I can also let anyone interested have the patches to TASMON, Superzap and a sorting DIR utility, all of which use the big screen. So programs are slowly becoming available.

For those of you willing and able to tackle your own program conversions, there are two main ways to tackle the problem of using the 80x24 screen. If for instance the program uses the standard DOS print a character to the screen at 0033H then there is no real problem, you just have to find the variable controlling the number of lines allowed to be printed on or scrolled up the screen at any one time. This will work OK for ZEN and EDAS for example which use standard DOS routines.

However, many programs use direct screen addressing for their displays and that causes problems. This is because the extra screen memory is mapped to the area normally taken up by the system RAM ie. from 4000H-437FH. The total screen is addressed as a continuous block from 3C00H-437FH, but the second half of the screen has to be switched in before you start writing to it. If you don't do this you will start to write all over the system routines with disastrous results.

Bank switching is carried out by writing specific bit patterns to port 0FAH. You can do this directly but you have to be very careful about what happens to the stack. It is very easy to leave it in the bit of memory that you've switched out and any subroutines will get hopelessly lost. It is far easier to use the routines already built into the operating system in order to carry out system functions that need to write to the extra screen memory. There are 8 special call points that carry out various operations on the screen, normally with HL pointing to the screen address. These are:

Address	Function
3643H	LD A,(HL)
3649H	LD (HL),A
364FH	LD (HL),20H
3656H	LDIR
365DH	LDDR
3664H	INC (HL)
366AH	CPIR
3761H	CPDR

To use these functions, simply load your registers with the appropriate addresses or values and CALL ADDRESS. The bank switching is all carried out for you. If you want to do something that is not covered by one of these instructions, there is are two general purpose CALLS to switch in and out the banks. To use these:

```
CALL 3605H      ;Switch in extra video ram
Do your OP
CALL 3629H      ;Switch out extra video ram
```

Using these combinations you can carry out just about all the operations that you want.

One final tip concerns that blinking cursor. As you have probably discovered by now, it is a hardware cursor and it is not at all easy to get rid of it. The chip controlling the display is in fact very versatile and the actual format of the display is all under software control. It is somewhat complicated to use so that if you want to muck around with your display then I suggest you get hold of the technical information sheet on the chip - the Motorola MC6845. This is very informative and actually gives a small sample program in machine code to demonstrate how to set up the screen and cursor parameters. For simple purposes however, you can just alter the operating system. Putting a NOP (00H) at 048CH will make the cursor disappear, putting E6H at 048CH will restore it. You can do this from within BASIC with a simple poke statement.

I hope this has been of some use to any of you Genie III owners. I would welcome any comments from fellow owners and you are most welcome to phone me on 01-950-6345 after 8.00 pm.

Geoff Smith

Adjusting Scripsit's default values.

Most of the patches for Scripsit that I and others have published in the Newsletter have been in the form of assembler or Hex dumps. This is fine for the experienced hacker but is somewhat incomprehensible to the newcomer. However it is possible to manipulate machine code programs from a BASIC program and I thought that it might be useful to some of our BASIC orientated members to put together a patching program in BASIC.

The object of this patch is to be able to easily alter a particular table in Scripsit that contains the default values for such things as Left margin, Top margin etc. True, these can be changed in a Scripsit format line, but I regularly run Scripsit on a printer that requires a Left margin of 0, Right margin of 80, Top margin of 1, Bottom margin of 58, etc. These are all different from Scripsit's defaults and sometimes I forget to put in all the FORMAT commands and waste both time and paper with incorrectly formatted output. It's much easier to have a specifically configured Scripsit.

For those of you who just want to Zap your disks directly the part of the table that you want is in FRS 28H, starting at byte 0BAH, and is in the same order as the variables given in lines 20-140 of the BASIC program.

The BASIC program is very simple but contains a couple of programming techniques that may be useful to newcomers so I will briefly describe the program.

Lines 10-160 set up the variables and tell you where to put your disk.

Lines 170-190 open the Scripsit command file and 'GETS' the appropriate part of the disk file that we want to manipulate as the special string A$.

Lines 200-230 take this string apart and assigns the individual values to elements of the array VA.

Lines 240-300 print the values and their names on the screen. It also checks (line 280) to see if the value is numeric or represents Yes or No and prints accordingly.

Lines 310-340 accept input via the Inkey function to select the parameter you want to alter. Line 320 shows use of AND in a way not often appreciated by the novice. It is not being used as part of an IF statement but as a mask for the input character. It is carrying out two functions in this instance. Firstly it is converting the input to uppercase by ensuring that bit 5 (the 6th bit from the right!!) is reset. It is also turning the input in a numeric value that can be used as the index of the array, by ensuring bits 6 and 7 are reset, then taking the ASCII value of the resulting string. ie. The letter K which = ASCII 75, binary 01001011 is converted to 11, binary 000001011. Quite a useful function to be carried out with such a simple instruction.

Lines 350-420 allow you to input a new value to the selected parameter, do some validity checking and go round again.

Lines 430-480 reconstruct the combined string, re-assign it to A$ and 'PUT' it back to the disk. This routine is only entered if the '@' key is pressed which will generate a value of 0 after the efforts of line 320.
You can exit the program without writing to the disk by pressing <BREAK>.

**** BASIC program to alter Scripsits defaults ****

```
10 CLEAR 1000:DIM VA(14),PARAM$(14)
20 PARAM$(1)="Left Margin "
30 PARAM$(2)="Right Margin"
40 PARAM$(3)="Para Space  "
50 PARAM$(4)="Justify     "
60 PARAM$(5)="Centre      "
70 PARAM$(6)="Force Right "
80 PARAM$(7)="Print       "
90 PARAM$(8)="Widow Supp. "
100 PARAM$(9)="Line Space  "
110 PARAM$(10)="Top Margin  "
120 PARAM$(11)="Bot. Margin "
130 PARAM$(12)="Ver. Centre "
140 PARAM$(13)="Page Length "
150 PRINT"Place SCRIPSIT Disk in Drive 1"
160 INPUT"Press <ENTER> when ready";Z
170 OPEN"R",1,"SCRIPSIT/LC:1"
180 FIELD 1,186ASX$,13ASA$
190 GET1,41
200 FOR X=1 TO 13
210     X$=MID$(A$,X,1)
220     VA(X)=ASC(X$)
230 NEXT X
240 CLS
250 FOR X=1 TO 13
260     PRINT CHR$(64+X);"  ";
270     PRINT PARAM$(X);" = ";
280     IF VA(X)=89 OR VA(X)=78 THEN PRINT " ";CHR$(VA(X)) ELSE PRINTVA(X)
290 NEXT X
300 PRINT@900,"To alter parameter press letter  OR  '@' to finish";
310 IN$=INKEY$:IF IN$=""THEN GOTO 310
320 X= ASC( IN$ )AND31
330 IF X=0 THEN GOTO 430
340 IF X<1 OR X>13 THEN GOTO 300
350 VA$=""
360 PRINT@900,CHR$(30)
370 PRINT@900,"Enter new value for ";PARAM$(X);
380 INPUT IN$
390 IF VA(X)=89 OR VA(X)=78 THEN GOTO 410
400 VA(X)=VAL( IN$ ):GOTO 240
410 IF IN$="Y" OR IN$="N" THEN VA(X)=ASC( IN$ ):GOTO 240
420 GOTO 350
430 ST$=""
440 FOR X=1 TO 13
450     ST$=ST$+CHR$(VA(X))
460 NEXT X
470 LSET A$=ST$
480 PUT 1,41
490 CLOSE
500 END
```

Geoff Smith

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Geof. Smith 01-950-6345 after 8.00 pm

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[2].....The Power of Multiplan
[3].....Model 4 Technical Reference Manual
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[1].....Series-I Editor Assembler R.S
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[3].....Introduction to Assembly Language Programming + Lesson on cassette
[4].....Data Writer
[5].....Profile III + HD Version
[6].....Electric Accountant
[7].....Accel 4

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[2].....The Basic Handbook (D.Lien)
[3].....TRS-80 Assembly Programming (W.Barden)
[4].....More TRS-80 Assembly Programming (W.Barden)
[5].....How to write TRS-80 programs
[6].....Random Access (Volume 1/2,Disk for 1)
[7].....TRS-80 Graphics for Model 1/3
[8].....Basic Faster & Better
[9].....The Custom TRS-80
[10].....TRS-80 ROM Routines Documented
[11].....TRS-80 Language Sub-routines (W.Barden)
[12].....Visicalc for Model 1/111
[13].....Visicalc Applications Tandy
[14].....Model III Technical Ref.Manual

Various

[1].....80 Micro March 82 to date
[2].....80 US Jan 83 to date
[3].....Computronics July 82-Aug 83
[4].....Micro 80 (Australian) June 81 to date
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TRADER - a review and in use.

The Program/Package is by UNDERSTANDING from North London, who also wrote the CORPLAN business game sold by TANDY for Model I & III.

The Program is for those businesses with daily takings, use not more than 79 codes in their business, and want a hard copy of every entry. The final reports are designed with small businesses in mind, and the whole thing is OPTION driven.

The capacity is given at :-

100 cash / bank transactions per week,
500 Purchases per Quarter,
nominal ledger a/cs can be redefined,
Profit & loss codes 1 to 49,
Balance Sheet codes 50 to 79.

Quarterly VAT reports/returns are produced along with the following :-

Trial Balance,
Trading Account,
Profit & Loss,
Balance Sheet,
Liquidity reports,
Account balances.
others covered later.

The user has to get used to the idea of some reports on the screen, and others to the Printer. There is no toggle to switch from one to the other.

The comments from non-accountants are critical, whereas the accountants at college found the manual and worked examples fine, and had no difficulty in setting up & running. The Package is used by Luton College to teach absolute beginners bookkeeping and accounts. The students at the moment only use the JOURNALS feature of the postings section.

In use the initialisation takes less than 5 minutes, with very few decisions. The latter are :-

Year end, Quarter ends, and first weekend of the financial year. One annoying fault pointed out by a Scottish user was that one of the VAT Quarter ends had to coincide with the year end. This would put some potential users off. Finally the user enters the VAT rates in use, ie 15% and 0% normally, but here again the Scottish user found Problems over giving discounts, which results in a composite rate of 14.25%, if 5% discount is given.

In use at the college the following steps are used:-

Sketch out the starting of a new business.
Decide on the business, and the capital required.
Forecast the first weeks income and expenses, including the closing

stock.
The above are entered, amounting to around 20 - 30 entries.
Once entered, the trial balance, trading account, profit & loss and balance sheet are extracted.

Each member - the group is 3 strong - takes a copy for perusal, and a more complex situation follows the above.

Here the entries will span 4 - 6 weeks with separate weekly reports being extracted and compared with the forecast, prepared with pencil and paper.

A major feature within the Journal - postings section is that the computer looks afer the debit and credit. It is not possible for the teams to get out of balance. They may put an entry on the wrong side eg the bank code 59, and find the most enormous overdraft, but not one word of complaint has been made of this feature.

Another point on the above is that when a code is entered, the computer advises of the title eg BANK for code 59, and if in error the user presses the clear key to try again.

For the experienced TRS-80 user the program will appear slow, but again there has not been one word on this from our students, the main one being that of inflexibility concerning the fixed reports.

The headings seen in the worked example are fixed, and cannot be customised. The layouts are designed for a small/trader, and not for a company. Again it will be seen that they do not comply with the latest layouts for company accounting.

Following this review, which is based on our college's experiences readers will find a short worked example using an exam question. I have no idea if any members will find this useful, but I propose to publish a VAT example trying to solve the Scottish user's problem of the VAT composite rate. As well as the short exam question in this issue, a much longer one will follow with some ideas on improvements required to enhance the package. Obviously I welcome comments especially the constructive ones.

Brian Pain 0908 - 564271.

At college we now use the following:-

1) Trader for beginners.
2) Sternberg for accountancy students, who can design the accounts in use.
3) Profile III to get the feel of the database concept.
4) CorPlan for the experienced students, who can use forecasting and work as a team.

TRADER

WORKED EXAMPLE USING AN EXAM QUESTION.

Royalties	23650
Fees received	8000
Serialisation Fees	5400
Fees for Publicity activities	2734
Lecturing Fees	250

The above are receipts, and are coded 01.
The following are payments:-

Rates	440	25
Heating & Lighting	916	26
Postages	414	30
Stationery	659	30
Telephone	762	28
Secretarial Expenses	6866	20
Travelling Expenses	3427	21
Photocopying expenses	640	30
Artists Costs	715	37
Insurance	308	29
Subscriptions	70	47
Mags - subs.	226	47
Misc. Expenses	691	47
Balance Sheet entries:-		
Drawings by owner	21547	74
Office Equip.	1700	50
Office Furniture	510	50
Bank Balance	2265	59
Cash Balance	28	60
Capital Account - invested by owner	2150	68

It will be seen from the second Journal sheet, that another code has been set up for depreciation in the Profit & loss account. This is not in the initial list of codes Provided in the Package on Purchase.

The above takes about 30 minutes to code and enter.
The coding could be improved by using more than one code for income, and two codes for Fixed Assets. Stationery ought be split up, so that if the reports go to the VAT man and/or the Inspector of Taxes then the expense is detailed before they ask further questions. The amount of detail required will depend on each business, VAT man and Inspector. Simple innit.

Proof List - Journal Entries

Date	Narrative	Amount	Dr Cr	Account
31 MAY 84	ROYALTIES	23650.00	1	Takings
			79	General Suspense a/c
31 MAY 84	FEES ARTICLES	8000.00	1	Takings
			79	General Suspense a/c
31 MAY 84	serialisation	5400.00	1	Takings
			79	General Suspense a/c
31 MAY 84	Publicity activities	2734.00	1	Takings
			79	General Suspense a/c
31 MAY 84	lect. fees	250.00	1	Takings
			79	General Suspense a/c
31 MAY 84	payments n 1 3	440.00	25	Rates, Water Rates
			79	General Suspense a/c
31 MAY 84	payts for year	916.00	26	Heating & Lighting
			79	General Suspense a/c
31 MAY 84	payts for year	414.00	30	Printing Post & Stat
			79	General Suspense a/c
31 MAY 84	stationery	659.00	30	Printing Post & Stat
			79	General Suspense a/c
31 MAY 84	payts for year	762.00	28	Telephone
			79	General Suspense a/c
31 MAY 84	payts for secretarial	6866.00	20	Salaries, NHI
			79	General Suspense a/c
31 MAY 84	self motor	3427.00	21	Dir/Prop Motor & Tra
			79	General Suspense a/c
31 MAY 84	photocopying	640.00	30	Printing Post & Stat
			79	General Suspense a/c
31 MAY 84	artists illustrations	715.00	37	Professional Fees
			79	General Suspense a/c
31 MAY 84	ins chas.	308.00	29	Insurance
			79	General Suspense a/c
31 MAY 84	subs to prof bodies	70.00	47	Sundries
			79	General Suspense a/c
31 MAY 84	mags subs.	226.00	47	Sundries
			79	General Suspense a/c
31 MAY 84	misc. exps.	691.00	47	Sundries
			79	General Suspense a/c
31 MAY 84	self cheques	21547.00	74	Proprietors' Drawing
			79	General Suspense a/c
31 MAY 84	office equip.	1700.00	50	Fixed Assets
			79	General Suspense a/c
31 MAY 84	office furn.	510.00	50	Fixed Assets
			79	General Suspense a/c
31 MAY 84	bank at 310584	2265.00	59	Bank A/c
			79	General Suspense a/c
31 MAY 84	petty cashat 31 5 84	28.00	60	Cash A/c
			79	General Suspense a/c
31 MAY 84	capital as at 1 6 83	2150.00	68	Capital
			79	General Suspense a/c
		84368.00		

Traders' Bookkeeping System 7 JUN 1983 Page 1

Trial Balance

Code	Account description	Dr	Cr
1	Takings — ERROR - 5/be cr.	40034.00	
10	Purchases Goods for Resale	0.00	
18	Opening Stock B/Fwd	0.00	
19	Closing Stock C/Fwd	0.00	
20	Salaries, NHI	6866.00	
21	Dir/Prop Motor & Travel	3427.00	
22	Dirs' Fringe Benefits	0.00	
23	Staff Motor, Travel, Subs	0.00	
24	Rent	0.00	
25	Rates, Water Rates	440.00	
26	Heating & Lighting	916.00	
27	Cleaning, R.& R.	0.00	
28	Telephone	762.00	
29	Insurance	308.00	
30	Printing Post & Stationery	1713.00	
31	Advertising & Promotion	0.00	
32	Hire Purchase Interest	0.00	
33	Leasing Charges	0.00	
34	Bank Charges	0.00	
35	Bank Interest	0.00	
36	Credit Card Charges	0.00	
37	Professional Fees	715.00	
38	Accounting and Audit	0.00	
46	Cash Difference	0.00	
47	Sundries	987.00	
50	Fixed Assets	2210.00	
55	Stock	0.00	
56	Pre-payments	0.00	
57	Debtors Control A/c	0.00	
58	Credit Card Suspense A/c	0.00	
59	Bank A/c	2265.00	
60	Cash A/c	28.00	
61	Petty Cash A/c	0.00	
68	Capital ERROR 5/be cr!	2150.00	
71	Hire Purchase Creditors A/c	0.00	
72	Creditor Control A/c	0.00	
73	VAT A/c	0.00	
74	Proprietors' Drawings	21547.00	
75	Accruals	0.00	
77	Opening Balance Control	0.00	
79	General Suspense a/c		84368.00
		84368.00	84368.00

Brian Pain
31. May 84
0908 564231 (H)

Traders' Bookkeeping System 7 JUN 1983 Page 1

Proof List - Journal Entries

Date	Narrative	Amount	Dr Cr	Account
31 MAY 84	correct error	80068.00	79	General Suspense a/c
			1	Takings
31 MAY 84	correct error	4300.00	79	General Suspense a/c
			1	Takings
31 MAY 84	year end adj.	40.00	56	Pre-payments
			25	Rates, Water Rates
31 MAY 84	year end adj.	60.00	26	Heating & Lighting
			75	Accruals
31 MAY 84	depn for year on equip.	550.00	39	depn of fixed assets
			50	Fixed Assets
31 MAY 84	depn for year on furn.	120.00	39	depn of fixed assets
			50	Fixed Assets
31 MAY 84	amount owing year end.	270.00	28	Telephone
			75	Accruals
		85408.00		

Traders' Bookkeeping System 7 JUN 1983 Page 1

Trial Balance

Code	Account description	Dr	Cr
1	Takings		44334.00
10	Purchases Goods for Resale	0.00	
18	Opening Stock B/Fwd	0.00	
19	Closing Stock C/Fwd	0.00	
20	Salaries, NHI	6866.00	
21	Dir/Prop Motor & Travel	3427.00	
22	Dirs' Fringe Benefits	0.00	
23	Staff Motor, Travel, Subs	0.00	
24	Rent	0.00	
25	Rates, Water Rates	400.00	
26	Heating & Lighting	976.00	
27	Cleaning, R.& R.	0.00	
28	Telephone	1032.00	
29	Insurance	308.00	
30	Printing Post & Stationery	1713.00	
31	Advertising & Promotion	0.00	
32	Hire Purchase Interest	0.00	
33	Leasing Charges	0.00	
34	Bank Charges	0.00	
35	Bank Interest	0.00	
36	Credit Card Charges	0.00	
37	Professional Fees	715.00	
38	Accounting and Audit	0.00	
39	depn of fixed assets	670.00	
46	Cash Difference	0.00	
47	Sundries	987.00	
50	Fixed Assets	1540.00	
55	Stock	0.00	
56	Pre-payments	40.00	
57	Debtors Control A/c	0.00	
58	Credit Card Suspense A/c	0.00	
59	Bank A/c	2265.00	
60	Cash A/c	28.00	
61	Petty Cash A/c	0.00	
68	Capital	2150.00	
71	Hire Purchase Creditors A/c	0.00	
72	Creditor Control A/c	0.00	
73	VAT A/c	0.00	
74	Proprietors' Drawings	21547.00	
75	Accruals		330.00
77	Opening Balance Control	0.00	
79	General Suspense a/c	0.00	
		44664.00	44664.00

Traders' Bookkeeping System 7 JUN 1983 Page 1

Final Accounts: Trading and Profit & Loss A/c.

Code	Account description	Dr	Cr
TRADING ACCOUNT FOR PERIOD ENDING 7 JUN 1983			
1	Takings		44334.00
10	Purchases Goods for Resale	0.00	
18	Opening Stock B/Fwd	0.00	
19	Closing Stock C/Fwd	0.00	
	Gross Profit/Loss C/d (% to Sales = 100)	44334.00	
		44334.00	44334.00
PROFIT AND LOSS ACCOUNT			
	Gross Profit/Loss B/d		44334.00
20	Salaries, NHI	6866.00	
21	Dir/Prop Motor & Travel	3427.00	
22	Dirs' Fringe Benefits	0.00	
23	Staff Motor, Travel, Subs	0.00	
24	Rent	0.00	
25	Rates, Water Rates	400.00	
26	Heating & Lighting	976.00	
27	Cleaning, R.& R.	0.00	
28	Telephone	1032.00	
29	Insurance	308.00	
30	Printing Post & Stationery	1713.00	
31	Advertising & Promotion	0.00	
32	Hire Purchase Interest	0.00	
33	Leasing Charges	0.00	
34	Bank Charges	0.00	
35	Bank Interest	0.00	
36	Credit Card Charges	0.00	
37	Professional Fees	715.00	
38	Accounting and Audit	0.00	
39	depn of fixed assets	670.00	
46	Cash Difference	0.00	
47	Sundries	987.00	
	Net Profit/Loss C/d	27240.00	
		44334.00	44334.00

Code	Account description	Dr	Cr
FINAL ACCOUNTS: BALANCE SHEET AT 7 JUN 1983			
Net Profit/Loss B/d			27240.00
ASSETS			
50	Fixed Assets	1540.00	
55	Stock	0.00	
56	Pre-payments	40.00	
57	Debtors Control A/c	0.00	
58	Credit Card Suspense A/c	0.00	
59	Bank A/c	2265.00	
60	Cash A/c	28.00	
61	Petty Cash A/c	0.00	
LIABILITIES			
68	Capital	2150.00	
71	Hire Purchase Creditors A/c	0.00	
72	Creditor Control A/c	0.00	
73	VAT A/c	0.00	
74	Proprietors' Drawings	21547.00	
75	Accruals		330.00
77	Opening Balance Control	0.00	
79	General Suspense a/c	0.00	
		27570.00	27570.00

EDINBURGH WORKSHOP REPORT.

The above took place at Ted Gladstone's hotel - an ex mansion, an ex-bachelor's residence, an ex-army office and very close to Arthur's seat. This meeting was quite something with catering by Ted personally on Friday evening and mutton pies on Saturday evening by Ted's wife.

The programme was as follows, and you can see the local group put on quite a day.
Room 1.
68000 system on show with Leon explaining the design and the construction.
Structured programming and PASCAL with Malcolm Leckie, who was determined to share some of his views with others.
SINCLAIR QL Leon went through the current situation bringing members up to date.
Screen formatting using USRS from BASIC, with Laurie Shields doing his current favourite topic.
QL SUPERBASIC was dealt with by Leon who explained the problem was one of trying to hit a moving target.
68000 Machine Code main features explained by Leon.

Room 2 ZEN on show, being demonstrated by Laurie to members as they arrived.
The same problem - members database - but with the hardware always changing - Laurie explained the various problems encountered over the YEARS.
TRADER a short review and worked example by Brian Pain.
Z80 machine code sort by Laurie, using the recently published article in NATGUG's mag.
EPSOM's high-res graphics by Jim Bartholomew, with some assistance from Malcolm AND diskdrives(Plural-Don).
Le Script demonstrated by Ian Wright, of Index and croquet fame.
Summing by Dick Mackie, with the mutton pies.

The above looks good and was good; which other user group puts on days like this, outside the TRS-80 community ?

Brian Pain.

For those interested the following modules are contemplated for the above package. It is considered they are necessary as there are distinct weaknesses at the moment.

Trader/Contents :- This will enable a user to request an analysis of a particular account - either to the display or to the printer. At the moment an account balance is available but not its makeup. The analysis is important where the user might be asked for a breakdown of DRAWINGS or of MOTOR EXPENSES. If a user is to use the package to the full, then on presentation to the Inspector of Taxes, Bank manager or Customs & Excise questions will involve the analysis of accounts to completely satisfy the enquirer.

TRADERVAT/TUTORIAL

As a consequence of talking to existing users there are problems implementing the VAT part of the package. VAT is fast becoming as complicated as Income Tax, and there are definite pitfalls for the unwary, let alone those who try to earn their living from understanding the rules and regulations.

The tutorial will consist of 5 - 10 sessions where the user is taken through the transactions of the different schemes, assuming they are only going to be concerned with that scheme. The manual goes to quickly through this implementation, and completely fails to provide a structured approach to helping the purchaser grapple with the intracacies of a particular scheme. A user is only concerned with their own scheme, and no other.

TRADER/ARCHIVE

This will allow the user to save entries after a session for retrieval later on. They might be wanted for consolidating at a later date,for putting through VISICALC or MULTIPLAN and of course SCRIPSIT. At the moment all the entries are printed out on hard copy, which is the AUDIT TRAIL, and the latter is good enough to satisfy any critical eye when it comes to the security of the system. It is expected that the user will be prompted for file name, overwriting existing file name, and advising of errors eg no disk in drive, full disk etc.

TRADER/REPORT

As the title suggests the user can customise the final reports, as the current layouts are fixed, and in no way alterable. It is envisaged that the code numbers can be suppressed, the titles personalised and insets made available. At the moment the layouts are meaningful to the professional, but lack the style that is available on so many other packages.

TRADER/INDEX

This is an obvious fault, and the index will be just that, but obviously held on disk, so that any major typos etc can be put right.

Brian Pain / Laurie Shields.

This will be used where several files created by ARCHIVE are to be added together, rather like VISICALC, but with the program in total command. The user will be able to consolidate a years figures, or just a months, depending on the initial requirements. It is envisaged that bulk files can be added, or just the individual files. The expression 'BULK' means a range from say Jan1 to Jan4, or possibly Jan84 to Dec84, with files held as a lookup table provided with the module or set up by the user. By developing this consolidation feature the user could be a high volume user, with just the 79 codes in use, but the volume causing storage problems, solved by ARCHIVING the data in preset file names, and possibly stored on multiple diskettes.

TRADER/UPDATE.

In view of the limited interest of the program an update sheet will be started using information gathered from wherever. It is anticipated that it will be more of PR exercise, than a newsletter, but who knows. I (BCP) only wanted the TRS to be used for accounting in my original office, and now would like to introduce it to others using standard packages plus addons where necessary. Laurie Shields expressed an interest in supplying the addons if economic, so that formally explains any INTEREST. Some members will read MONEY instead of INTEREST, and of course it will be involved. So far TRS has provided all the power required in the financial accounting spheres I am involved in, and the current range and second source appear to maintain that position.

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OPUS TECHNICAL SPECIFICATION
OPUS 5800 5¼" DOUBLE SIDED 80 TRACK DISC DRIVE SPECIFICATION

Item	Model	
Memory capacity	Unformatted	
	Disk (Kbyte)	1,000
	Surface (Kbyte)	500
	Track (Kbyte)	6.25
	Formatted (256byte/track)	
	Disk (Kbyte)	655
	Surface (Kbyte)	328
	Track (Kbyte)	4.1
Encoding method		MFM
Recording density (BPI)		5,877
Transfer rate (Kbits/sec.)		250
Track density (TPI)		96
Number of cylinders		80
Number of tracks		160
Number of heads		2
Rotation speed (rpm)		300
Mean latency time (ms)		100
Access time	Average access time (ms)	94
	Track to track (ms)	3
	Settling time (ms)	15
	Head-loading time (ms)	50
Power requirement	5VDC + 5%	0.5A (av) 1.0A (max)
	12VDC + 5%	0.7A (avg) 1.0A (max)
Ambient conditions	Operating temperature (^{o}C)	10 – 40
	Operating humidity (%)	20 – 80 (WBT 29^{o}C max)
	Nonoperating temperature (^{o}C)	10 – 50
	Nonoperating humidity (%)	5–95
Dimensions & Weight	Height (excl.front panel) (mm)	41
	Width (excl.front panel) (mm)	146
	Depth (excl.front panel) (mm)	203
	Weight (kg)	1.5
Front panel dimensions	Height (mm)	42.9
	Depth (mm)	149
Reliability	MTBF (under normal conditions)	10,000 POH or more
	MTTR	0.5h
Error Rate	Soft read error	10^{9} bits
	Hard read error	10^{12} bits
	Seek error	10^{6} seek
Medium life	Rotational life	3.5×10^{6} pass/track or more
	Insertions	3×10^{4} or more
Unit life		5 years or 20,000 power on hours whichever comes earlier.

NATGUG NEWS

Volume 5 Issue 12 June 1984

OFFICIAL JOURNAL OF THE

National TRS-80

& Genie Users

Group.

INFORMATION ON THE GROUP

Membership of the Group is by subscription to the Newsletter, which is published monthly. Membership details are obtainable from the Group Secretary. Membership of the Group is open to anyone with an interest in the TRS-80 range of microcomputers, and compatible systems such as the Video Genie.

Details of the Group accounts and the constitution of the Group are obtainable from the Secretary.

Members requiring assistance with problems related to the TRS-80/Video Genie may call the Secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops are arranged from time to time in various parts of the country.

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are obtainable from the Secretary.

A membership list is obtainable on disk from the Secretary.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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EDITORIAL

Sorry about the delay again, but I have to wait until I get sufficient material before putting the newsletter together. In fact, contributions seem to be drying up, probably as a result of the drop in membership and lack of interest in the TRS-80 range generally. Brian tells me that membership is currently around 475.

As mentioned in the last issue, we had a joint NATGUG and IQLUG stand at the London Computer Fair at Earls Court. There was, as I expected, far more interest in IQLUG than NATGUG.

The Milton Keynes workshop takes place at the end of the month. The Sunday will be shared with IQLUG, and the way things are going there might be more IQLUG than NATGUG members, especially since we are having one of the QL's designers along to talk about the machine, and we will be holding the inaugural General Meeting. I will be demonstrating the use of my Model II as a development system for the QL, a task for which the Model 4 is ideal, as it now runs CP/M, and could utilise the same MC68000/8 cross-assembler that I use. The QL can also use many of the Tandy printers, and the connection of the low-cost colour plotter or the colour ink-jet printer to the QL would be a very interesting exercise. I am sorry to sound a bit defeatist about the prospects of NATGUG, but we just have to face the facts.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. If possible, send material in printed form.
2. Scripsit or Pencil disks/cassettes are acceptable.
3. Ensure your ribbon is in reasonable condition.
4. Printer output should be on A4 paper if possible.
5. If you send in hand-written material, write legibly.
6. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

LIBRARY INFORMATION

Model 1: Leighton Davies, 105 Caerau Road, Caerau, Glamorgan. Tel: (0656) 738337

Model II: Jim Hutton, 25 High Street, Stroud, Glos. Tel: (045 36) 4423

MEMBERS LETTERS

I have recently fitted a 48K internal RAM expansion supplied by GNOMIC which caused some difficulties as I have a Hitachi built TRS-80 and the internals are very different, and am looking now for one or two disk drives (and DOS) which I intend to interface via the GNOMIC DP1000 interface. Should you know of any second-hand drives which are available, I would be pleased if you could let me know of them.

I hope my knowledge will grow sufficiently so that I can understand more of the magazine - just now a lot of it is really too advanced for me, but I read that this is everyone's experience and so I don't feel too bad about it.

J.C. King,
5 Market Street,
Hebden Bridge,
W. Yorks. HX7 6EU.

(* Blandford Computers often have second-hand disk drives in stock. Give Os House a ring on (0258) 53737. LFH *)

PROBLEM SECTION

When Noel (my wife) rang you re May issue I did tell her to ask you whether the Journal has died from natural causes or has it been murdered ? Only I gather she never managed to get to the end of my message as you had rather a bad day. Well, we all have them. My mini was on the blink since Thursday last week and DIR/BAD was giving me a varied number of bad blocks on the System Master - up to 99 on one occasion. On the advice of our OEM I re-initialized the System Master using one of my copies. I have three of those - apart from the official copy. The trouble was that I have made some program alterations to the subscriptions' programs (I have 22 of those) on the System Master and not all of them have been copied onto my copies. On top of that the accounts update program is still suffering from hiccups in spite of three cracks at it by OEM. (For obvious reasons I would not touch the sources of the accounts' programs). The latest hiccup was that on the update of a group of nominals the nominals, which should not have been updated, not only lost first links with the transaction file but also doubled their Current Period Total. Being a accountant and using a computer is bad enough but this combined with being DP manager (kind of - as the only mug in the establishment who ever saw computer) can be sheer hell. Incidentally the bad blocks were the result of dirty heads - now cleaned by DEC maintenance chappie.

Being a devil for punishment I am looking for a decent accounting program for my Model 4. Do you know of any ? I would like to be able to print or display accounts with transactions and balances at any time, be able to contra the original entries to more than one nominal, accommodate about six bank/cash accounts, about 200 nominals and about 500 transactions between updates (monthly). I would like to be able to print day's transactions and not the transaction file from the beginning each time I require a print. Also I would like the update to run without accounts' print.

I wrote to about ten places, got very few replies and those which I got were not suitable. The price I would expect to pay is about £300 - 400. You know how I value your knowledge - any advice would be appreciated.

Anon.

(* Any suggestions to Brian, please. LFH *)

I am writing to you as NATGUG newsletter editor and a TRS-80 expert hoping that you might be able to help a fellow memeber of the group ?

I am I am afraid not very technically minded and am somewhat confused about using Electric Pencil with my Video Genie. My set up is VG EG3003 with EG3014 48k expansion and twin disks (Micropolis).

At the moment I run Electric Pencil in upper case and all is well. But as my printer can print lower case it would be nice to implement lower case in the computer as well. Having contacted Lowe's they advise that they can fit lower case for me for approx £44 plus carriage; (Phew!!). But they are not sure if it will operate O.K. with Pencil and there was a letter in the March newsletter from a Mr Williams who seems to have a similar problem.

Now this is where my confusion starts. My Pencil manual tells me that to have lower case fitted I need two extra switches (a) a control key and (b) a single pole double throw switch to switch the extra bit of screen memory in and out. At the moment my Pencil is set up by the vendor to use the 'Clear' key as the Control key, and this is quite satisfactory in upper case usage. But do I really need the other switch ? Lowe's seem unsure, they say that lower case is imlemented by a software driver they supply on tape with the modification.

Help please ! I am totally confused. My version of Pencil is titled on the disk as 'Pencil/LC' which sort of suggests that lower case is around somewhere, but on powering up I do not get a question asking if lower case is fitted or not (as Mr Williams mentions he does in his letter, and as also is mentioned in the Pencil manual).

Could you kindly throw some light on the lower case modification and the usage of Pencil in lower case please; is the Lowe's one the best one to have or are there others available which might be better. Any words of wisdom would be greatly appreciated I assure you.

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(* Eric Hartley on (0200) 22880 can help with the L.C. mod. Can anyone help with the other problems? LFH *)

I have been using SCRIPSIT patched to run with enhancemnets on LDOS. The patches were published in the LDOS quarterly way back in OCT 82 and I can get most of them to work but not P,F print to file or P,D print to display has anybody succeeded?

For those that have not tried LSCRIPT it is a very big improvement on standard SCRIPSIT for the model I. The ability to speed the cursor up and to use a spooler is a great asset. As the control keys are moved to the top row I use a printed overlay which puts the functions along side the key. This makes it much easier to use for somebody that is not familiar with the idea that V = page and S = insert.

The strange thing about Scripsit is that it gains usefulness with experience. I used to regret that there was no multiple print facility until it was explained that the repeat key allows up to 255 copies and even more recently I found that _____ can be printed with YQW together (as in Name: _____.). This has two advantages. It provides a space on manual forms and SORTS high. In a list of figures or letter grades there is a tendency for the records with nothing in them to SORT to the top. Although the character is really an underline character it cannot be used for this purpose but it is visually better than ..... or -------.

In case anyone wonders what sorting has got to do with SCRIPSIT I should add that if I have simple data to work with I find it easier to set up a file in Scripsit or Visical and use CMD "O" to sort it before returning. This way you get the all the input and printout routines written for you.

I have also seen mention of a hardware buffer PCB. Where can I get one?

Derek Trayler

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(* Print buffer PCBs are available from Roger Hamlett on 01-508 0062. LFH *)

PADDING WITH RSET

The CMD"O" SORT that is available under most DOS's is very fast but will only work for strings. If STR$ is used to convert the number into a string, it can be sorted by CMD"O" but the result can be strange. I found 5 sorted greater the 1500 but less than 60 and this turned out to be because it was sorting on the first character. I tried to use 0005 but the leading zeros were suppressed.

Reading through an old newletter gave me the tip to use RSET as this pads the string to get an acurate sort. A demo program shows the effect and it can be PRINTed or LPRINTed as required. It is interesting to see the effect of the CHR$(95) in line 100. If this is changed to CHR$(32), a different order is obtained.

```
10 CLEAR10000:P$="    ###    %     %"
100 DIMN$(100):FORN=1TO20:N$(N)=STRING$(6,95):NEXT
200 FORNN=1TO14
300 READD:RSETN$(NN)=STR$(D)
400 NEXT
500 DATA1,34,99,24,129,2990,199,2,187,3,123,4,128,6
600 FORN=1TO20:LPRINTUSINGP$;N;N$(N):NEXT
700 CMD"O",20,N$(1)
800 FORN=1TO20:LPRINTUSINGP$;N;N$(N):NEXT
```

Derek Trayler

SUPERSCRIPSIT PROBLEMS

I continue to have trouble with Tandy's latest version of Superscripsit (1.02). It is much improved on the initial disaster issue, but still a little too prone to occasional catastrophe. The first time this version was used, it behaved alright for about an hour and a half, with frequent @W's to save the text. At the end of this time it produced "DATA RECORD NOT FOUND" or some such message. It transpired that the system had written some of the text on the directory track and thoroughly lost its place as a result. Reconstitution of the text was possible with Leo's help at Swindon, using Superzap. The text was found on the corrupted disk by searching sector-by-sector, then copied by sectors to a previously prepared empty Scripsit file on another disk. Although this took longer than retyping the text would have done, it was reassuring to prove the method. As far as Tandy Customer Services were concerned, no advice was available to recover "lost" text like this.

Another recent fault was that a Superscripsit file which had apparently saved alright would not load when next needed. The system froze when it attempted to open the document. The first sector of the file had been corrupted and could not be read by Scripsit or by Superzap. In this case, recovery was achieved by copying the first sector of another Scripsit document into the faulty sector. It was then straightforward to the formerly corrupted file under its old name (since the directory was not altered by the sector copy and 'knew' the correct address from when the document was previously saved). Scripsit automatically copied the correct document name back into the 'Open Document' details but tab layout needed readjustment, once back in the document itself.

Both of these faults happened while using Superscripsit under TRSDOS 2.3, on two different Model 1 systems. On a third Model 1, Scripsit kept returning to the main menu each time an attempt was made to open a new document. I was using TRSDOS because my school has not yet taken my advice to buy a decent DOS. With my own NEWDOS 80.2, Superscripsit has worked very well in the few weeks since I received from Apparat the zap list for this latest version.

Tandy Customer Services tell me that many people are using Model 1 and Superscripsit without troubles like these. I wonder how many more still have difficulties like mine but have learned to live with them, found solutions or simply given up. It was only after a particularly bad session with an earlier version of Superscripsit that I was annoyed enough to go back to Tandy for the third or fourth time, to discover that they had produced another improvement. It is a sorry reflection on their after-sales service that they hadn't even bothered to tell registered owners that the new version was available to remedy unsatisfactory performance of the earlier one.

I hope this will be a help to some other members, but I would still be glad to know, has anyone a solution or even an explanation for these problems?

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CLOSE ENCOUNTERS OF A STELLAR KIND

Whilst casting around for simple routines to dress up as BASIC programs for those of my pupils who are prepared to use their Spectrums, VIC 20s and so on as other than games machines I came across a novel use of astrophysics - the prediction of stellar close encounters. Thus for general amusement I present some calculations which allow prediction of time and distance of closest approach for those slightly rogue stars that do not follow the plane of the Galaxy and which have a resultant velocity in our general direction. Not being an astrophysicist I have limited this program to handle stars with a negative radial velocity - that is they are headed in our direction!
Certain information will need to be found from star catalogues but I include a list of some of the nearest stars and their relevant properties to start you off.
As it stands the program will give answers accurate to around 0.2%. Better results would come with more significant figures in the constants plus account taken of factors such as precession but one can be too picky!
Should you build a garden fish pool with exacting specifications of around 10 places of decimals for it you'll have cause to tear your hair out when any insect drops in as it will distort space curvature enough to ruin your meticulous figures.
For those of us who do not aspire to Mensa status help with derivation of the formulae, constants and units can be found in a 'simple' text, the two volume set by A.E. Roy & D. Clarke entitled Astronomy and published by J.W. Arrowsmith, Bristol. An article on the subject may be found in the U.S. magazine 'Astronomy', April 1979.
The works of the program lie in lines 380 to 430 the rest of the program is self explanatory flannel meant to make it user friendly. In line 480 the straight left hand bracket indicates that 2.512 is being raised to the power of (AM - NM).

STAR	R.A.(h,m)	DEC (°)	PARALLAX	P.M.	R.V.	MAG	S.T.
α Cen C	14 28	-62 36	0.764	3.841	-15.7	11.05	M5
α Cen AB	14 38	-60 46	0.743	3.673	-27.0	-0.29	G2,K0
Barnard's	17 56	+04 36	0.553	10.278	-110.0	9.54	M5
W 359	10 56	+07 10	0.428	4.691	-12.0	13.53	M8
Sirius AB	6 44	-16 42	0.374	1.323	-7.6	-1.46	A1,wdA
Ross 248	23 40	+44 04	0.314	1.584	-81.0	12.29	M6
L 789-6	22 38	-15 28	0.298	3.270	-60.0	12.18	M6
Ross 128	11 47	+00 58	0.300	1.369	-13.0	11.10	M5
61 Cyg AB	21 06	+38 38	0.292	5.204	-64.0	4.80	K5,K7
ε Ind	22 30	-56 52	0.285	4.694	-39.0	4.68	K8

These figures are for the epoch 1980. Take the reciprocal of the parallax to obtain parsecs. Proper motion is in seconds of arc per year, radial velocity is in Km per second and MAG is the star's apparent visual magnitude - the smaller the number the brighter the star. The last column shows spectral type.

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```
10 CLS:FOR S = 1 TO 5
20 PRINT @ 467,STRING$(26,"*")
30 PRINT @ 531,STRING$(3,"*")"  STELLAR KAMIKAZE  "STRING$(3,"*")
40 PRINT @ 595,STRING$(26,"*")
50 FOR W=1 TO 500:NEXT W:CLS:FOR W = 1 TO 100:NEXT W:NEXT S
60 PRINT @ 192,"This program will calculate both"
70 PRINT"the closest approach of a Star"
80 PRINT"to our Solar System and the Time"
90 PRINT"it will take to do so"
100 FOR W = 1 TO 2000:NEXT W:CLS
110 CLS:PRINT @ 192,"You will need to enter:":PRINT
120 PRINT"1. Name of Star":PRINT"2. Its Proper Motion"
130 PRINT"3. Its Present Distance":PRINT"4. Its Radial Velocity"
140 PRINT"5. Its Apparent Magnitude":FOR W = 1 TO 2000:NEXT W
150 CLS:PRINT @ 456,"For a short explanation of units used"
160 PRINT @ 520,"PRESS <ENTER>"
170 PRINT @ 648,"To continue press <SPACE BAR>"
180 A$ = INKEY$:IF A$ = "" THEN 180
190 IF A$ = CHR$(13) THEN 520:IF A$ <> CHR$(13) THEN 200
200 CLS:PRINT @ 64,"Note that approaching stars have negative radial velocities"
210 PRINT:INPUT"Name of Star";S$
220 INPUT"Proper Motion - in seconds of arc per year";PM
230 PRINT"If "S$" distance is in parsecs then type P"
240 PRINT"If "S$" distance is in light years then type L"
250 B$ = INKEY$:IF B$ = "" THEN 250
260 IF B$ = "P" THEN 300:IF B$ = "p" THEN 300
270 IF B$ = "L" THEN 280:IF B$ = "l" THEN 280:GOTO 250
280 INPUT "Distance - in light years";L
290 D = L/3.2615:GOTO 310
300 INPUT"Distance - in parsecs";D
310 INPUT"Radial Velocity - in kilometres per second";RV
320 INPUT"Apparent magnitude";AM
330 PRINT:PRINT"£££ If you have correctly entered information press <ENTER> £££"
340 PRINT"£££  If you have made a mistake press <SPACE BAR> £££"
350 E$ = INKEY$:IF E$ = "" THEN 350
360 IF E$ = CHR$(13) THEN 380:IF E$ = CHR$(32) THEN 370:GOTO 350
370 CLS:GOTO 110
380 TV = 4.74 * PM * D: REM ** Tangential or Transverse Velocity (Km/S) **
390 SV = SQR(TV * TV + RV * RV):REM ** Space Velocity (Km/s) **
400 MD = 4.74 * D * D * PM/SV:REM ** Minimum Distance (pc) **
410 NPM = 0.0444 * SV * SV/(D * D * PM):REM ** Proper Motion at MD
                                (s of arc/year) **
420 NM = AM + 5 *(LOG(MD/D)/LOG(10)):REM ** New Apparent Magnitude at MD **
430 T = 977 800 * D * RV/(SV * SV):REM ** Time taken to MD (years) **
440 CLS:PRINT @ 320,"In "T * -1" years "S$" will be at"
450 PRINT"its nearest, "MD" parsecs, and will"
460 PRINT"appear to have a magnitude of "NM
470 PRINT"an increase of "(AM - NM)" magnitudes"
480 PRINT"which is "2.512[(AM - NM)" times as bright"
490 PRINT:PRINT:PRINT"£££ for another calculation press (?) £££
    £££   Press any other key to finish   £££"
500 D$ = INKEY$:IF D$ = "" THEN 500
510 IF D$ = CHR$(63) THEN 110 ELSE STOP
520 PRINT @ 192,"Measurements of Distance:":PRINT
530 PRINT"1 parsec (1pc) = 3.261 5 light years"
540 PRINT"= 1/p where P = parallax in seconds of arc"
550 PRINT:PRINT"Measurements of Angle:":PRINT
560 PRINT"1 radian = 180 * 60 * 60/PI seconds of arc"
570 PRINT"There are 60 minutes in 1 degree and 60 seconds in 1 minute"
580 PRINT"Thus 1 degree = 60' = 3 600''"
590 PRINT"1 degree = PI/180 radians"
600 PRINT:PRINT:PRINT"££ To return to main program press any key ££"
610 C$ = INKEY$:IF C$ = "" THEN 610 ELSE 200
```

WHY THE NEWSLETTER IS LATE, A RELATIVISTIC HYPOTHESIS.

In a rare brainwave (well something rippled) the explanation came to me as to why it seems that NATGUG News comes out late no matter how hard our editor works. It is all down to relativity. The faster Leon compiles the magazine the slower his watch appears to run. Thus when he looks up and sees he is ahead he takes a well earned break only to find out when it comes to distribution time that his creation has missed the last post.

For example, even if Leon works at the speed of his slowest Model 1, after a full working day his watch would be over 2 hours slow compared to everyone else s. The faster he works the later the magazine!

Proof lies in the program below. Incidentally, can anyone tell me why spurious values (in this case > 1 for ST) arise in line 60 with velocities of around 100 000ms-1. I had to put an elastoplast conditional statement in line 70 to trap them. Around V = 100 000 seems to be the point where the SQR function is going to produce a non unit answer. While I am asking would a Model 1 user please explain why in the INKEY$ routine, lines 140 to 160, I can not merge the test statements into one line.

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```
5 REM %%% RELATIVISTIC TIME CONTRACTION %%%
10 DEFDBL A-Z
20 CLS:INPUT"The work rate in metres/s";V
30 IF V > 299792459 THEN 180
40 PRINT:PRINT"Enter working time in hours, minutes"
50 INPUT"How long is the work session";H,M
60 OS = H * 3 600 + M * 60:C = 299792459:      REM $$ Time in secs-Light speed $$
70 RV = (V#V)/(C#C):ET = 1 - RV:ST = SQR(ET): REM $$ Time contraction factor $$
80 AT = OS * ST:IF AT => OS THEN 120:          REM $$ Test SQR(ET) < 1 $$
90 A = (OS - AT)/60:MIN = INT(A):S = OS - AT - MIN * 60: REM $$ Time in mins,secs $$
100 CLS:PRINT @ 192,"Your watch reads "MIN" minutes and "S" seconds"
110 PRINT"slower than anyone else's.":GOTO 130
120 CLS:PRINT @ 454,"Apologies, time difference too small to register."
130 PRINT:PRINT:PRINT"   $$$ Press (F) to finish otherwise press (SPACE BAR) $$$"
140 A$ = INKEY$:IF A$ = "" THEN 140
150 IF A$ = "F" THEN 200
160 IF A$ = "f" THEN 200
170 GOTO 20
180 PRINT"Faster than light travel not allowed here"
190 FOR W = 1 TO 1000:NEXT:GOTO 20
200 CLS:PRINT @ 535,"NO TIME TO LOSE":PRINT:PRINT
```

More on CP/M Plus for Model 4 from Roy Barber.

There appear to be two of us following a parallel theme on the Model 4 CP/M. Anon and I overlapped a little in the last issue. Perhaps we should compare notes !. Anyway, my regards to that gentleman.

I am continuing to relate my experiences on the subject of this CP/M as I think it is of some importance to the prospective purchaser.

My comments in the last issue about the drive stepping rate being inactive were not strictly correct. Although the prompt says 'inactive' it does work and the prompt changes to 'active' only while the stepping rate is actually being changed.

For those who have not yet experienced any of the problems of this version of CP/M I should point out that an even more serious bug has come to light associated with the stepping rate change feature than it just not working. This has been brought to my notice by another member who has purchased CP/M Plus. This bug manifests itself as follows:
If a new stepping rate is selected and an attempt is then made to install this as a permanent change as the SETUP utility allows, after the new stepping rate is written to disk the disk will no longer boot !. This is obviously a major fault and if a newcomer to disks is unfortunate enoughto try it on the master disk he will be in a very unfortunate situation.

On the subject of documentation, which Anon commended, I agree it is ample and most of the users requirements are well covered but when it comes to the installation of CP/M Digital Research has maintained its tradition of incomprehensibility. Most Model 4 users will not be too concerned with this aspect as the CP/M comes configured for them but if the user needs to alter the configuration, as I do for double sided drives he will have little chance using the DRI documentation. A source list of the actual BIOS implementation for Model 4 would have helped but DRI provides only a sample BIOS for 8 inch SD SS drives. The only help provided is a source list of the model 4 ports and addresses. (Incidentally, DRI's comments like 'This does not work' have been left intact here.)

The GENCPM utility which is used when a new BIOS is incorporated also does not function as indicated in the manual. I have been unable to get it to run to the first prompt shown in the examples. I may have missed some subtle point somewhere in the instructions but as I am unable to get the results indicated by DRI I do not feel like working on modifying the BIOS only to find the bugs in the installation program prevent it from being installed.

All in all, unlike Anon, I find this CP/M a great dissapointment and I only hope other purchasers can get more value for their money from it than I consider I have so far. Of course, in time this may all be put right and maybe someone will figure out or explain how to modify the BIOS for drives other than Tandy standards but in its present form.....

Roy Barber. (01 394 3856 for your comments.)

Unprotecting SCRIPSIT (and other odds and ends).

As this is my first contribution to the newsletter perhaps an introduction is in order. My name is Roy Sainsbury and I live at Park Farm Nurseries, Landford, Salisbury ((0794) 390319 after 6). I have had a Model-I for about 3 years but in February I changed to a Model-III. At the moment I am beginning to wonder if this was a good idea: I had no disk I/O errors to speak of on my model-I, but the new machine's drive 1 seems to have the gremlins and is currently back at Tandy's in Southampton to have it checked (again). However, on to the interesting bits...

As I already had Model-III SCRIPSIT (which came with the model-I package), I decided to put this to use and was horrified to find that not only had one of the demo files been replaced by a lot of rubbish files but also that I could only get one backup out of it. After that, neither my master or the backup would do another backup without reporting that I had exceeded the limit and had copied everything except SCRIPSIT. Like most people I have a dislike of this kind of thing so I wrote to Tandy about it and in the meantime used SuperUtility to copy the master. Tandy were very good about it and in fact sent me a replacement master disk, so now, armed with two masters, one used and one unused, I could investigate how the limited backup protection (which allows only 2 copies) is done. This I did, and came up with the following 'un-protect' procedure. For this you'll need a zap program (I used SU+):-

1. Go to the directory (track 17) and search for the filename of the protected program (Tandy tells me that at the moment only SCRIPSIT and VISICALC are limited). The first byte of the line containing the filename will contain 7EH. Change this to 5EH, which 'unflags' the file as being protected.

2. Go to the BOOT sector (track 0 sector 1). Byte 22H is the backups counter. On normal disks this will be FFH, but on limited copy disks it will be the number of copies allowed. Change this from whatever is there to FFH to clear the counter. (Note: If you use SU+, it's repair-BOOT also sets this to FFH).

3. You may now backup the previously protected program using TRSDOS as usual.

Incidently, trying to backup a protected disk that is write-protected results in backup aborting because it can't change the counter on the source disk. Once the counter reaches zero (or the disk is not protected), you can keep the write-protect tab on.

Regarding protection, It appears that Tandy, in an attempt to let Model-III BASIC programmers protect their programs by giving them "EXEC" only access (if the program is stopped it is ereased), they have left a loophole by which it aught to be possible to copy ANY program, without knowing passwords and without using a zap program to get rid of them. I haven't actually tried it yet but I do know that you can read an "Exec" only program from BASIC.

I found this out quite by accident (I wonder how often we do that?) using the "Load Module Locator" program from Machine-Language Disk I/O & mysteries on SCRIPSIT, totally forgetting that on the Model-III it is password protected with Execute-only access and therefore should have had access denied, but it wasn't!
When I hit BREAK to stop using the program, the "Protection has CLEARED Memory" message came up. When I realised that BASIC was letting Execute-only access through as if it where a program!

From this, it seems that a simple program could copy any such program. Just open two random files, one to read the file, and another to re-write it to a new file, then read records one-by-one from the 'protected' file and write them out to the new one! Of course, if any errors occur you'll loose the program, and I don't know if it closes files correctly under those circumstances, but if you are really stuck for getting into a protected program, it might work!

If any of you have tried using the Misosys Disassembler (disk version) on Tandy's Series-I Editor/Assembler, you'll know that it won't work. I found this out on the Model-I, and at first thought it was incompatability with TRSDOS 2.3B, which seems to differ from 2.3. In fact it is not, but an incompatability with the Assembler as it doesn't work on the Model-III either. Or at least, I should say that it didn't, because I have found a fix for it, along with fixes for a few other bugs in it. I would have listed them here but as the computer isn't around I can't print out the relivent information (I gave my previous list to the chap who bought my Model-I!). However, when it gets back I'll run it off and send it in. By the way, I suggest that if you're using TRSDOS 2.3B on Model-I, consider the PATCH command as a 'program destroyer', because my experience with it is that files which were loadable before produced LOAD MODULE ERRORs after a patch was attempted. Safer to LOAD the program, patch it with DEBUG and then DUMP it again.

One contributor in an earlier newsletter commented that when he ran his Model-4 in Model-III mode but switched the speed to model-4 speed, he got errors on disk I/O. Although I haven't got a model-4 I thought about this a bit and it seems to be to be reasonable that it should happen that way. If you have a model-III DOS running on the machine It will think it is running a model-III at the speed that machine runs at, so software time loops to allow for disk startup time and initial read/write delays and so on will have been programmed accordingly. Speed up the clock and all those loops run faster and thus terminate early, so the disk could be written to before it's fully up to speed. Interestingly, the manual for Howe's System Diagnostics (version 3.0) says that even in Model-III mode that program will show the drive speed as being 7% higher than it should be, which I suppose means that in Model-III mode the 4 is actually slower than the actual model-III.

HELP - TRSDOS 1.3, SNAFUWare & a strange bug

Perhaps some members will be able to help me with the following:-
a) When using SuperUtility 3.2 on my Model-III with TRSDOS 1.3, I note that all system disks have a bad GAT. Experimenting with two identical backups indicates that after you do a "repair-GAT" two granules are released for use (track 2, sectors 7 to 12 inc.). It appears that these granules don't belong to any of the DOS files but for some reason Tandy allocates them. Sector 7 contains what looks like a "load module" which does make machine-code sense (but I don't know what it actually does), and sector 10 is full of zeros except the first byte. Now, the point is that SU+ also repairs the GAT whenever you kill, recover, copy or build a file, and the danger here is that those sectors might get clobbered by a new file if it's short enough to fit. Can anyone tell me if these sectors actually do anything or are they just remnents from a previous version of TRSDOS (not of 1.1 because my 1.1 has an active program (CONVERT, I think) occupying that area). I can reinstate those granules by zapping byte 02 of the GAT from 33H back to 3FH, but this presupposes they don't get clobbered first!

b) I recently bought SNAPP VI (garbage collector), but I am worried about using it after reading that it requires the production of a 42 track disk. Trouble is, the drives are only supposed to be 40 track and I don't want to wreck them using this program. Unfortunately, Molimerx won't support SNAPPWare and I think SNAPP is out of business anyway, so there's no help there! I would rather throw the disk away than cause a disaster, so if anyone knows if 42 tracks is safe or not, please let me know.

c) I have a strange bug. A machine-language subroutine used with a BASIC program worked OK on Model-I, and also on a model-4 but on model-III? It just crashes everything. The program manipulates the screen while it's in 32-chr. Mode, and I have since discovered that it works on Model-III if left in normal mode (swtiching over after it has been done). I tried this out on a model-III that was in Tandy's for repair the other day, and the same thing happens. Is this a design fault or is there something I should be doing in 32-chr. mode to stop that happening? If anyone with a model-III want's to try it I can send them a copy (probably on tape but it needs disk BASIC).

Finally, I would like to order some programs from the States, and having never done this sort of thing before, don't know the procedure: Do they accept Access if as Mastercard; What happens about Customs/VAT and all that stuff? I know lots of people even buy hardware abroad, so if someone out there knows the works, it would be a great help (I shall probably get Trashman and junk SNAPP VI if it's unsafe).

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(* Buying items (hardware or software) from the States does not present any problems. Just quote your Mastercharge or Visa number (they don't know about Access or Barclaycard over there), and ask for the goods to be sent airmail. The postman will ask for the duty and VAT when he delivers the goods to you. I have used this technique lots of times without any problems. LFH *)

MODEL 1 High Resolution Graphics.

Main Character Generator.

Each HI-RES graphics Character is made up of a matrix 6 pixels across & 12 lines down. This chatacter is the same 'size' as the original TANDY character No 191 but instead of being sub-divided into 2x3 it is now 6x12'

Each of the 72 dots of a character has 1 bit of Ram allocated to it. To achieve this each line of 6 dots is allocated 1 byte of ram with 2 bits not used.

Bit 0 is the rightmost dot & bit 6 the leftmost, with bits 7 & 8 not used. As the line count for each character is 0-11, lines 12 to 15 are never accessed, gating of the address lines could have been employed here to use the minimum amount of ram, but as yet manufacturers of 1536x8 (128x12) rams are hard to find, so 2048x8 (128x16) have been used & 4 bytes wasted on each character.

The character generator section is made up 4Kx4 low power rams (2114s), I/Cs 7 to 10, I/C11 Gate & Hex Tristate gate I/C6. The rams are configured into 2 1Kx8 blocks, with ***MA 10 & MA 10*** (via I/C 11 inverter) acting as the block selector. I/C6 acts as a buffer between the CPU Data bus & the character generator output.

In operation there are simply two modes, first, READ, when the character generator is supplying video character line information to the video shift register, & second, WRITE, whereby the character generator is being written to by the CPU. (similar to the writing of information to the 1K of video ram).

In the READ mode the control line to the address multiplexers (I/C 3, 4 & 5) is LOW, this means that the ram R/W is high, setting the rams to the READ mode & I/C6 buffer otputs to the tristate mode, it also means that the character generator is getting it's address inputs from the video timing circuits of the keyboard (LO, LB1 etc). Thus the ram outputs are providing signals for the HI RES video shift register (I/C12).

In the WRITE mode the control line to the address multiplexer is HIGH. The ram R/W line is now a function of the 0 to 2K decoding & the CPU WR line. To actually write a byte to the generator the CPU must do a write operation to any location between 0 & 2047 with the address multiplexer control line in this high state. Address 0 - 11 correspond to lines 1 - 12 of character 128, 16 - 27 to character 129, 32 - 43 to character 130 etc, the line dot pattern as described earlier, but to indicate it, 0 will give a blank line, 63 a complete line, 1 a rightmost dot & 32 a leftmmost one.

Remember though, as your characters are now ram based, on power-up they will be filled with 'junk'. To clear all the characters run the following program:-

```
10 OUT 140,1:FOR X=1TO2047:POKE X,0:NEXT:OUT 130,1
```

Or in Assembler for speed:-

```
        LD   HL,0
        LD   (HL),0
        PUSH HL
        POP  DE
        INC  HL
        LD   BC,2047
        OUT  (140),A
        LDIR
        OUT  (130),A
```

Address Decoding.

CPU address lines A3 - A7 inclusive are used with the OUT signal to decode the following I/P ports 130, 140, 150 & 155 via I/C 1, these signals are used to toggle two 'D' type flipflops (I/C2), (both these flipflops are reset on power-up & on operation of the reset button). When an I/O operation is performed to port 130 this produces a -VE going pulse which is applied to the CLK of I/C2A flipflop, this latches the low held on the 'D' input onto the 'Q' output. This output is used to control the ram character generator address multiplexers (I/C3, 4 & 5). When it is low the generator receives it's addresses from the video divider chain L1, L2, LA, L(, LB0 etc.

When an I/O operation is performed to port 140 a -VE going pulse is applied to the SET of I/C2A, this latches a HIGH on the 'Q' output & thus the address multiplexer control line. With the line in this state the ram character generator receives it's addresses from the CPU address bus.

When an I/O operation is performed to port 150 a -VE going pulse is applied to the CLK of flipflop I/C2B, this latches the LOW held on the 'D' input onto the 'Q' output & the Q output is set to a HIGH. The LOW on the Q output is fed to the CLEAR input of the HI-RES video shift register I/C12, this forces the shift register to continually shift out a 'LOW' signal, this is inverted by I/C11 & sent to the keyboard via pin 9 on th 20 way ribbon cable & the I/F PCB to the video driver I/C Z41 pin 7, thus the HI-RES graphics are inhibited.

Memory Mapped Address Decoding.

CPU address lines A11 - A15 inclusive are decoded by I/C14 to produce a LOW signal called ROM A whenever the CPU address bus is within the 0 - 2K range. This signal is then gated (I/C11) with the CPU WR signal to provide the R/WR required by the ram character generator whilst it is being programmed.

HI-RES Video Shift Register.

The HI-RES video shift register supplies, when enabled, via inverter I/C11 serial graphic video data to be mixed with ASCII data at Z41 in the keyboard. The timing signals SHIFT & GRAPHIC SHIFT/LOAD are brought in from the keyboard via the 20 way ribbon connector. The shift register is enabled & disenabled by having it's CLEAR line taken low to disenable it, this is selected by doing an I/O operation to port 150, for more information see address decoding I/O section.

New ASCII Character Generator.

The new ASCII character generator is in the form of a pre programmed 2Kx8 Eprom. It provides true descending tails by instead of blanking the inter-character lines (L8 - L11) at Z26-12, the signal is removed & the generator is programmed to give 4 blank lines to characters without tails.

(See track cut in Fig 2 of fitting instructions).

The generator also provides 5 special characters 123 - 127 to enable a grid to be drawn for the character set-up program supplied with the modification.

These new characters need to be the full six dots wide, hence the pink wire to the isolated leg Z10-14.

Power Supplies.

The Unit uses the +5v of the Keyboard assembly for it's power.

General.

All references to PL1 refer to the 40 way bus extension connector. It must be noted that the numbering at present uses the convention of the Manufacturers, which is DIFFERENT to the TANDY numbering.

John Kilpatrick

C COMPILER

I have now aquired a working version of the C compiler that I mentioned some time ago. At least, it compiles itself, and the resultant program works perfectly under CP/M. I could get it working on the Model I but I think that I would be better off modifying it to produce MC68000 code and turn it into a cross-compiler or even a resident compiler for the QL, since the financial rewards would be much greater. On the other hand, if 100 members said they were interested and would buy it for say, £40 (don't send any money, my name is not Sinclair!) I might be persuaded otherwise.

Leon Heller

So the debate has started - or has it ? I refer to NATGUG and IQLUG of course. Should we or should we not - that is the question ! Whether 'tis nobler in the mind to suffer the outdated models, IBM compatibles etc or not to take arms against a sea of Sinclairs and by ignoring - oppose them. No doubt, WS (not the WordStar one) could have put it much better. Or, alternatively, if you cannot beat them .....

Until recently I used to buy monthly 80Micro, Byte, Personal Computer World and Practical Computing - probably more money than sense. For quite a while now I had a feeling that I was wasting my money and cluttering unnecessarily the house by the two latter publications. From month to month I was hoping to find at least one or two bits of interest or some value but all I could find were pages of Sinclair, Oric and Commodore 64. And to think that one of these publications is considered (by its' editors) a small business system paper. Well - no more ! Byte and 80Micro will have to do in the future unless there should appear an English computer paper devoted to a micro and not a micro-toy.

No doubt the IQLUG will be big as there are plenty of those, who will buy it for Xmas or on the spur of a the moment and won't know what to do with it. They will be buying all sorts of magazines devoted to this new wonder, will be joining groups, buying lots of programmes (mainly rubbish), won't learn anything, and finally will consign their IQL to the bottom of the cupboard - the IQ not being up to it. There also will be some (a minority) who will learn to write simple programs and, as any proud creator, will seek their publication.

Judging by the latest issue the NATGUG (magazine) has been put on a strict diet and I wish that I could shed pounds as NATGUG has shed pages. Still I would hate it to grow on material of the type found in the magazines devoted to Sinclair products. I hope that I do not give an impression of being anti-Sinclair. Nothing of the sort and my interest in microcomputing has started with the acquisition of, believe it or not, ZX80. What I am trying to convey however is that cheap products do not address a serious audience and this, I am greatly afraid, is going to be the case with the majority of IQL users. Let's keep the Group as it is. Let our motto be:

Never mind the width - feel the quality.

We may be a dying species but we will take our time about it yet. We may even take a turn for the better. After all Tandy is selling a lot of machines and some are bound to be sold in this country. In fact I hear that the business in Model 4 is very good, and now that the CP/M is with us it may even become better. I do not wish to get involved in the Model 2000 controversy - but I wish that I had held off changing my Model 1. Nothing adverse as far as Model 4 is concerned only it would be madness to take a loss on selling it now to get Model 2000.

I am one of the guilty ones, who attended MK workshop but failed to stay for the AGM. Well, at the best of times AGMs are a bore - great bore to be honest, whether they are AGMs of the society, group or company. They are a necessary evil and there is no getting away from it. I would however like to know how many pins has the chip referred to by David W in his article. If it was a forty odd pin chip then maybe I can offer some words of consolation. In the hope of picking brains I attended the CP/MUG AGM. Not that I was there long. There were NO SMOKING notices all over the place and those, who know me, also know that the pipe never, but never, leaves my mouth. This however has nothing to do

with the subject and is just a recollection of rather an unpleasant experience. The point is that the AGM in question was attended, I estimate, by some 40 - 60 members. Considering that the Group has over 1000 members and is still growing and that AGM was held in London (next to the tube) I think that, by comparison, our group has not done so badly (at all, at all).

Still on the subject of these gatherings. During my long army service I had to attend Mess meetings. These you could call a type of monthly AGM with a small difference that you do not do the talking - you just listen and vote as the Chair wishes. It was not so bad whilst I was just a listener but when, in the Buggin's turn, I had to take the chair for quite a number of years the burden was becoming unbearable. It is so difficult to tell others what to do when one is fighting the sleeping sickness. Of course from time to time some intrepid, misguided soul made a proposal. This always did liven up the proceedings as everybody watched for the reaction from the chair - silly chaps. The chair reaction was, as everything in the army, well thought out in advance and went just as drill by numbers:

1. Thank you - sit down.
2. This is what I think we shall do .....
3. Basilisk eye on the mess members fix !!!
4. Anyone against ?
5. Passed unanimously.

However - now that we are all civilians and the COs do not drop in at the AGMs to refresh themselves from the water carafes filled with gin, why don't we have postal AGMs ? Call for proposals in the NATGUG and circulate the agenda with the proposals and any other necessary junk (like accounts) to the members who indicate their wish to participate in the debate. Let the members send the written comments on the proposals etc to the Committee who can do the sorting and finally publish the minutes in the NATGUG. Well, the postal votes for committes exist in many organisations and throwing the AGM open to a much wider audience could bring new ideas etc. After all, I am sure that it is not the lack of interest which causes poor attendance but lack of time and, in some cases, lack of money. The additional benefits of such an AGM would be that no one - but no one - would have to sit through three member discussion on the merits of the library (or was demerits ? I cannot remember) and the Committee in their wisdom could decide what has been passed unanimously etc.

I have received my Pro Pascal and very impressive it is. It must be impressive and clever as I got eleven compilation errors in six lines program ! It took me about two evenings before I managed to send couple of characters to the printer. So there is learning to be done and there is so little time for it. There are only a few hours in the evening after coming home from the "big smoke", one has to eat, have a bath and enter the accounts. At the weekend there are all the jobs not done during the week and even Nature has refused to water my garden for the last five weeks. Apart from the Pascal there also are all these CP/M+ manuals - 7 lbs of them according to my wife's bathroom scales. Slowly I will get there. Pro Pascal is very powerful judging by the manual and, when I get into it a bit more, I shall say more about it. The No 1 issue of CP/MUGUK newsletter lists in the library Vol 18 containing ProPascal and C80 programs. The only trouble is that they do not say whether the programs are written for CP/M or CP/M-86. I would ring to find out if I did not know that the answering machine will say "Send two Pounds and disk". I am delighted to have discovered that CP/M+ does read the IBM CP/M-86 format without any trouble. This means that I can buy any machine independent program meant to run either on 8080 or Z80 on that format disk.

Writing Pascal programs I require square brackets and curly brackets. The square brackets are no problem as CTRL (/ CTRL) provide them. But the curly brackets are not available in spite of their inclusion in Appendix B to TRS-80 Model 4 Reference Manual (CP/M+). Nor does the keyboard provide ESC. All is not lost however as the SETUP utility permits defining the F keys. The pointer sign ^ is obtained by CTRL/Up arrow. Underline can be obtained by CTRL - .

I had a slight problem customising the WordStar to CP/M+. CP/M+ emulates VT52 which is not one of the terminals listed in three pages of choices in the INSTALL program. So I had to go for the option "None of those" and do the patching. There is really not much to it. Label CLEAD1:+2 (absolute address 024C) needs changing 59H. Both LINOFF: (025E) and COLOFF: (025F) need to be 20H. I have also patched the optional ERAEOL: 2H, ERAEOL:+1 1B, ERAEOL:+2 4B. If you want highlighting which WordStar uses on menus and blocks you need to patch IVON: 2H, IVON:+1 1BH, IVON:+2 40H, IVOFF: 2H, IVOFF:+1 1BH, IVOFF:+2 41H and HIBIV: 01H. That has done the trick. Oh yes - and CRBLIV: FF to have the flashing cursor in blocks.

As I have already said the keyboard does not provide ESC so useful to avoid the stupid questions in printing. SETUP does take care of that. There is also no DEL key but CTRL/5 does rub the character before the cursor. I find that the cursor does flash a bit too fast and CAPS key works on a hit & miss basis. Several tries are sometimes required before the change of case occurs - something to do with the speed of Model 4 and keyboard scanning. No missed characters in typing though.

Anon.

FOR SALE AND WANTED

GNOMIC SALE

GNOMIC have a few of their expansion units (disk interface and memory) for sale at £25 each. They are uncased and without power supplies, but look like a good buy if you don't mind a bit of work. Contact Ken Grey for further details on:-

(0783) 860314 (work)
(0632) 561761 (home)

Tandy DWP-410 Daisy Wheel Printer, Tractor Feed, 3 Print Wheels, 7 Spare Ribbons.	£500
Dosplus 3.4 Operating System for Model 1	£ 50
Basic Compiler	£ 35
Microfiles Filing Program	£ 20
MODEM80 Communication Program	£ 15
Newscript 7.0 + Labels	£ 50
Microproof Dictionary Program	£ 10
Zork Game Program for Model 1	£ 10

Graham A Welsh
2 Grange Crescent
Edinburgh
EH9 2EH

FOR SALE:- * 12" HIGH RES, GREEN MONITOR - £50
* V/G HIGH RES UNIT - £50
* TRS80/S100 'ELECTRIC MOUTH' c/w 274 WORD DICTIONARY - £60
* PERCOM DATA SEPARATOR - £7
* LARGE RANGE OF ORIGINAL V/G-TRS80 SOFTWARE (DISK & TAPE) - MOSTLY SERIOUS + SELECTION OF BOOKS - 40% OF COST. SSAE for LIST.

AL NEILSON (051-220 5470)
78, ACKERS HALL AVE,
LIVERPOOL.
L14 2EA

FOR SALE

OMICROM MAPPER 1 complete with;-
CP/M 2.2 CP/M Accessory Disk M Basic C Basic Wordstar & Micro-Pro spelling checker. £175.00

E.C.Kilpatrick,
3a Gainsborough St,
Sudbury.
SUFFOLK. CO10 6ET.
27/06/84.
Phone 0787 79504.

FOR SALE

FOR SALE

MICROLINE 83 15" carriage

Tandy graphics

Great business machine (cost £700)

Charles Davies 01-393 9255

64K Print Buffer Board
or made up.
Pete Drew a group member
can help out with the
construction of the above
Ring him on 0582-840680

FOUR TRS-80

Software Library List

Model 4 owners who wish to keep abreast of developments can obtain an up-to-date list of all commercially-available software for the Model 4 by sending a large, stamped and addressed envelope to ->

Ken Arntsen
3 Home Pastures
Hatfield Heath
Bishops Stortford
Herts CM22 7ES

The information is regularly culled from "80 MICRO" AND "BASIC COMPUTING" as well as various catalogues and includes references to published reviews of the software where this information is available.

+CODA+ v 4.1

V 4.1 is a substantially revised version of the +CODA+ data security program originally introduced in 1981. The main features of the earlier releases are retained eg. the 48 character teletype compatible character set, facilities for input from keyboard, disc or tape and output to screen, disc, tape or printer. The key library has been expanded to provide 10,000 keys - accessible by library/page number and the encryption routine has been revised to implement recent developments in cryptography.

+CODA+ uses a stream cipher to encrypt data, a form of encryption in which the clear text input is combined with a stream of pseudo-random characters. This stream is generated by the interaction of an internal key (specific to the individual +CODA+ program used) and an external key selected by the user. The external key consists of an 11 character keyword and a 2 digit page number. Since the +CODA+ character set has 48 characters, the number of external keys available to each user is $48^{13} \times 10^2$ or just over 3×10^{29}.

In a stream cipher the corruption of a single character in a piece of encrypted text results only in the corruption of the equivalent character in the decryted text and not in the corruption of a block of text, as occurs in many high security ciphers. Because of this +CODA+ can be used with any type of data storage or transmission system without the need for any special error checking precautions.

+CODA+ consists of a machine code program which provides high speed and security for the encryption and decryption processes and a BASIC program which handles the input and output functions. The machine code section provides routines for encryption and decryption, for subdivision of encrypted data into 5 character blocks, for removal of spaces between blocks or words, for text, keyword and page number entry and for the encryption or decryption of data with automatic incrementing of the page number after each 1 kbyte section of text has been processed. An exit routine which wipes out both program and text buffer is included. The input/output section is written in BASIC in order to permit easy modification by users to meet their individual needs.

+CODA+ provides a preamble with each piece of text which can be used to give information about the key needed for decryption. V 4.1 provides guidance on key management and includes a short key translation program for transforming keys into a form suitable for use in the preamble.

+CODA+ is available for TRS 80 Modal I/III (32k disk) and is normally supplied on a TRSDOS data disc. Price $100.00

An MSDOS version is scheduled for release in December 84.

For details contact
D. S. Brown.
+CODA+ Data Securit,
17, Douglas Avenue,
Newcastle upon Tyne,
NE2 4XD. ENGLAND.
Telephone 091 285 8667

VISICALC DATA TRANSFER

Re reading the FEB newsletter I noticed a comment on the need to re-input data from one Visical file to another, to continue working large sheets. Surely the best way is to save the Totals cols as a DIF file and to load it into the Tot carried forward col of the new file. I have a file which totals the monthly figures and comes up with a monthly total. The sum of the monthly totals gives me a yearly figure. To extend this to the next year, I use a blank sheet with the monthly and weekly labels in place. By saving the last col Mon/Tot as a DIF file I can carry it forward to the new sheet where it is inserted under Bal c/fwd.

The enhanced Visical is available for the model III but not the model I. This is a pity because the Edit function is very useful if you make a small error in a formula. There are two ways round the problem. Either use program published in Micro 80 which I have not tried but understand is very good or LDOS users can patch Mod III Visical ver 160-Y0-T83 to be used on a Mod I

The enhanced version is better than the previous but whether it is worth upgrading is a difficult decision in view of the cost. Also the extra code takes up more room which leaves less for work space.

Derek Crayler

LeScript - Comments from a Potential User - Part 1.

Zorloff has been advertised quite widly but has never made an appearance at a workshop, until Edinburgh. Peter Frederick of Wordsworth commented that LeScript(formerly Zorloff) and the Model 4 made a first class word-processing package. In the late afternoon Ian Wright demonstrated the program and Laurie Shields, on the way home, commented that it looked good.

The disk and manual arrived just before the Gloucester meeting and on arrival Dave Holman was invited to look it over. A little later he agreed to run through its main features after lunch which went quite smoothly ! As with all our lectures the subject can appear quite attractive and more useful or better than the current program in use - in my case SCRIPSIT. As always the bottom line is - do I buy it ? Here the answer was Yes and the users will be fellow lecturers at college preparing text for themselves, for students, exam papers and sundry correspondence.

The following comments will perhaps explain why.

1. Supports 80 x 24 display on the Model 4 and the extra 64k of extra memory.
2. Works on M1, M3, M4 I use all three.
3. On screen representation of underline, bold, superscript, subscript, italics and expanded characters. Once these features are all in use the screen is all singing and all dancing and can be turned on/off.
4. Horizontal scrolling like Scripsit 0 - 252 - which the new TANDY/TOSHIBA can handle.
5. Commonly used phrases can be inserted with one key strokes - lawyers Companies Act 1981, Accountants Association of Certified Accountants.
6. Built in support for 150 printers - we use 4 TANDY printers.
7. Headers & Footers can consist of multiple lines and use the character enhancenents.
8. Delete - a word, a line, to the left & right of the cursor.
9. Search & replace automatically.
10. Search & delete --do--
11. Memory, Word and Line count.
12. Convert U/C to L/C and vice versa.
13. Display/Print directory and by extension plus kill files.
14. TAB - vital to lecturers in numerate subjects.
15. Write blocks to disk.
16. Clear and exit to DOS require two keystrokes.
17. A form of hyphenation is supported.

more next month.

Brian Pain

MULTIPLAN

This will be a three part series on the above as some members may being seeing a spreadsheet for the first time. Multiplan has already had enough rave reviews to warrant material in our own mag.

At college we have VISICALC for the Model 3, and MULTIPLAN was bought for our Model 4's. The main features to explored are the jargon free commands and the SORT. Micro 80 is most complimentary and awards the following ratings:-
EASY TO USE 5 stars.
GOOD Documentation 4 Stars.
Bug Free 5 stars.
Does the job 5 stars.

Over this short series the following will be attempted by me or any member who would like to contribute.

1) Execute files only where the user cannot adjust the formulae, but just input the amounts.

2) Consolidation of departmental/subsidiary files carrying forward totals only.

3) Transferring MULTIPLAN files to our own IBM PCs and manipulating with LOTUS 1-2-3.

4) Transferring data from Model 100 to Model 4 and incorporating that data into M4 Multiplan model/sheets - preferably exec. only.

5) Doing some over the phone transfers between home and college perhaps with other members joining in. Here they would be supplied with the files, transmit them and then see the result of their files on the overall result. Remember you can use my account at college - Phone 0582-411842, Account no. 12,110, Password 566660 - 110 baud.

6) Standard exam questions on the topics - management/financial accounting, taxation, perhaps statistics.

We have bought the Tandy MULTIPLAN book, I have the SIRIUS MULTIPLAN manual, and of course we have the 421 page manual that comes with the disk.
Please note that SORT is not in the SIRIUS manual -I bought first, looked second !

Brian Pain

GLOUCESTER WORKSHOP 17th June 1984

The location was the very convenient Crest Hotel just outside Gloucester, and the theme of the day was WORDPROCESSING.

The main features of the day were:-
1) Model 2000 making its debut, hooked to a inkjet printer and showing off its colour and excellent resolution. Members looked on with just a shade of envy. Bradley House and a succession of members enjoyed playing with it during the day.

2) Os also brought along an EPSOM lookalike, made in Germany, and proved its compatiblity by working with DOTWRITER, producing exactly the same output as the EPSOM - price around 250 pounds.

3) Amongst Os's goodies was the TANDY/TOSHIBA 24 head/wire printer that featured in the afternoon as a lecture topic. Dave Holman had finished the LeScript session and proceeded to play with this printer. Members agreed that TANDY were not marketing this product properly, it is quite superb.

4. Disks were on offer at around 13.00 pounds from Os and this needs a mention because many members forget that they can order their disks through the post from Blandford.

5. Jim Roden brought along his new modem and seemed rooted to his keyboard going through this product - see the specification at the end of the mag.

6. John Carne's 40/80 switchable twin disk drives attachd to his Model 3 were on show for the last time this year as John is off to BOTSWANA - it could happen to nicer bloke!

7. Dave Washford's considerable library of fonts for DOTWRITER were on show, which seem to be a regular conversation stopper.

8 LeScript was sent along by Peter Frederick of Wordsworth, and Dave Holman very kindly did an hour on its main features in the afternoon.

9. Os House had two second-hand hard drives on offer - once we read about them - here were two s/h, lady owners, never raced or rallied, good all round condition - or have I got the wrong product ?

10. Dave Holman had some own designed fonts for his regimental mag, including a map of the UK.

11. Tony Evetts did a really smooth dem. of DOTWRITER and was promptly signed up for MILTON KEYNES Sunday morning.

12. Ken Arnsten had an extensive list of Model 4 software and has agreed to make this available to members.

13. Colin Ashford did a first class overview of WORDSTAR, with helpful tips of actually using it on quite an extensive report.

14. John Christie very kindly went through the patches that are supplied in the LDOS newsletter for SCRIPSIT

Brian Pain

STERNBERG BUSINESS PROGRAMS

At last the short course that had been promised tho my Luton accountancy students in the dark months of January & February took place in June (22/23)
The idea was quite simple (mine always start out quite simple) take accountancy students through some BASIC which relates to their work, and then try out the above book's early chapters - initialisation of the general ledger, posting the entries and concluding with the trial balance.

The students had been sent sent their homework, three chapters plus the instructions to GOTO the library and take out a beginners book. Did they ? Did they heck ! We all met on the Friday and started promptly at 6.00, finishing at 9.00 with just a 5 minute break. The session consisted of the students following the blackboard and seeing the results on their own micros (Model 3/4).

We started in earnest on the Saturday morning - 9.00am - and slowly went through the program which initialises, setting up the parameters required by the program. As a teacher on the course the importance of clear documentation became quite obvious, with the students demanding rem statements nearly every line.

During the Friday and Saturday sessions the IBM BASIC manual was referred to and compatibility was comfirmed where it became a point of interest. I am pleased that my out of date micro's BASIC is compatible with the no. 1 business micro's BASIC.

Brian Pain

CP/M USERS GROUP (UK)

72 MILL ROAD, HAWLEY, DARTFORD, KENT DA2 7RZ Telephone (0322) 22669

THE SOFTWARE LIBRARY

The CP/M Users Group (UK) maintains a Library of public domain software. Most of the material available at the present time originates in the USA but a growing number of disks are becoming available from the UK Group and from other groups around the world.
The two US groups are:

1) The CP/M Users Group. This was the first group to be set up in the US. This group has currently produced 90 volumes of software.

2) The SIG/M Group. This is a specialist group within the New York Amateur Computer Club. They have so far issued 162 volumes of software. (As of March 1984).

Other groups have been formed in Australia and Holland.

The UK Library was set up in 1981 and has so far issued 18 volumes of software. UK Volume 0 contains up-to-date catalogue information on volumes held in the Library. (Currently counts as 2 volumes).

All libraries rely on contributions from their members. Contributions to the UK library are always welcome. Please send as much documentation with your software as possible. All contributions must be original or in the public domain. If your contribution was originally published as a magazine listing, please obtain permission from the Editor before submitting it to the library. Please note any software or hardware dependencies either at the beginning of the source file or in a separate .DOC file.

The only standard format for floppy diskettes is 8" SS SD. This is the only 8" format supplied.
5.25" diskettes involve the Group in additional expense and time for copying. Please order 5.25" disks only if absolutely essential. The methods used for copying 5.25" disks cannot cope with large amounts of copying, so this service has to be restricted to small orders only. Please note that up to 4 disks per volume will be required for single density 5.25" formats.

Note that some formats rely on the assistance of other members. Allow up to 4 weeks for delivery.

Current charges:

Copying charge . . . . .#1.50 per volume.
Post/packing . . . . .#0.50 per volume.
Media charge (8" only) .#2.50 per volume.

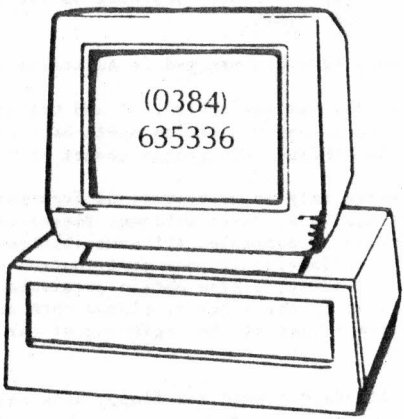
We cannot supply media for 5.25" orders at present owing to the difficulty of stocking several different types of disk.

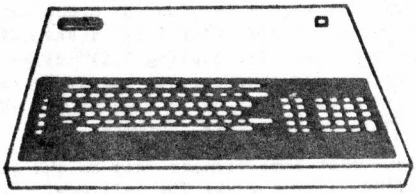
D.P. Fordred
Librarian

INTRODUCING THE

Digicomm Panther





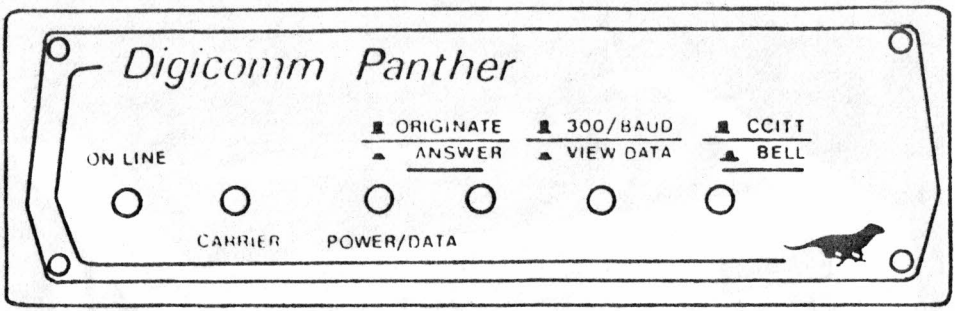


THE DIGICOMM 'PANTHER' MODEM.

This is one of the first of a new breed of international modem that runs on both North American and European phone systems so can be used almost anywhere in the world. It supports the following features:-

1. An industry standard 25 way 'D' socket to connect to the micro computer.
2. 300/300 baud full duplex CCITT standard (this is used by all MAILBOX systems).
3. 1200/1200 half duplex for fast transfer of data.
4. 1200/75 baud for PRESTEL/MICRONET etc.
5. Full Answer/Originate on all of the above.
6. Carrier Detect LED (to show if computer is logged on at other end of phone link).
7. Data Tri state LED (to show that data is being transmitted between both computers).
8. Online switch to connect call (when computer loggs off at other end this will automatically disconnect the phone line).
9. Optional Auto/Answer board (this allows your computer to answer the phone without intervension from you).
10. Comes complete with a 600 series modular jack plug to connect your phone line (the phone plugs into the PANTHER).
11. Full instructions for use.

FRONT PANEL



DIGICOMM Systems
(0384) 635336

One of the great (and not as yet fully realised) advantages of using a microcomputer is the ability to communicate with other computers via a modem and a telephone system.This advantage can be realised today with a state of art modem by DIGICOMM called the 'PANTHER'. This modem uses the very latest LSI technology to bring you a world standard modem of unheard of power just a few years ago.

WHAT IS A MODEM ?

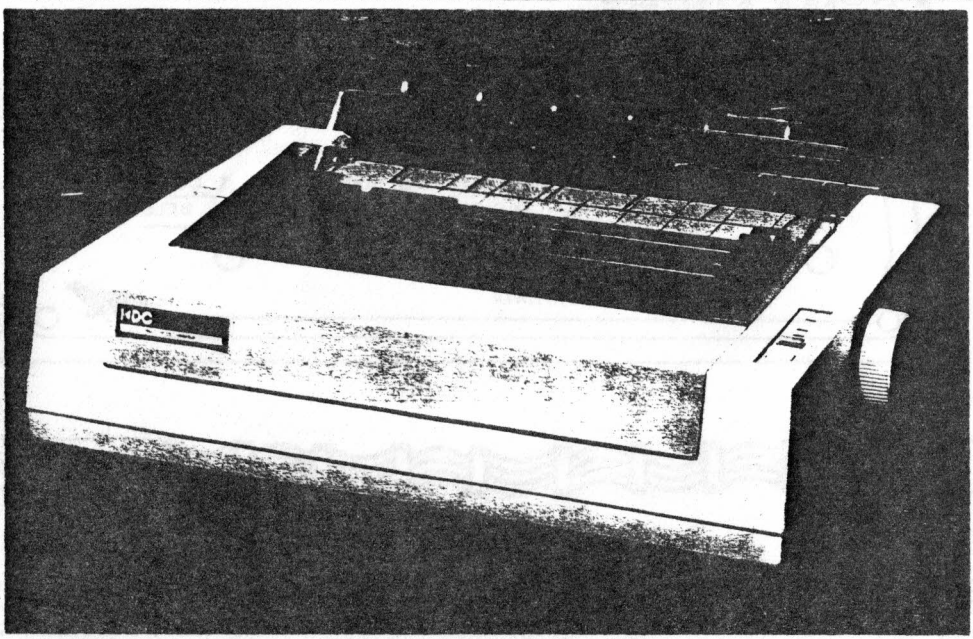
A modem is a device that interfaces between the micro computer and the telephone line allowing communication to be established between two computers. These computers can be alike or not as the case may be.
You could use this link for :-
contacting friends for the exchange of computer software, transfering personal mail, banking or even shopping.
In the US where the use of modems for communications are now firmly established there are around 2000 privately run MAIL BOX systems, these allow you or I to dial them up and browse around a whole new world of free information, free software, messages and any other thing you can think of. In this country there are around thirty privately run MAIL BOX systems but these are increasing almost daily as more people find out about the fascinating world of communications. On the commercial side of this there is of course PRESTEL/VIEWDATA, MICRONET, TELECOM GOLD, COMET, REWTEL, DIALOG INFORMATION SERVICES etc etc.

WHAT ELSE IS REQUIRED ?

All that is required other from a modem, computer and a phone, is software to handle the exchange of information between the computers. We have some free software for several popular computers including CP/M machines, BBC, TANDY, ELECTRON, SPECTRUM etc.
We can also supply software for a number of computers just ask for prices and availability, MAIL BOX software can be purchased i.e. TBBS, FORUM80, MAIL BOX, CBBS etc. (Includes CP/M machines) this software can be used with a number of well known computers.

Tel: Cradley Heath 635336

164 HALESOWEN ROAD CRADLEY HEATH WARLEY WEST MIDLANDS



FT 5001 DOT MATRIX PRINTER

FEATURES

Friction and adjustable sprocket feeding
Variety of printing modes with PICA and ELITE pitch
100 cps bi-directional printing
96 ASCII with descender, 8 international character sets and 49 semi graphics
Automatic paper insertion
Low cost, high reliability

CONTROL CODES

Code	Function
CR	Printing command
LF	Printing and new line command
VT	Line feed up to designated line
FF	Printing and paper feed up to top of next position
HT	Movement of printing point up to designated character column position
SO	Double width elongated printing
SI	Printing of characters compressed to half in horizontal direction
DC4	Double width elongated printing release
DC2	Compressed character printing release
DC1	On-line mode establishment (select)
DC3	Off-line mode establishment (de-select)
CAN	Print buffer data cleared
ESC	Code for expansion control command
BS	1 character immediately before in print buffer cleared
BEL	Buzzer sounds for approx. 0.5 sec.
NULL	Tab setting completion code

SPECIFICATIONS

Print Rate	100 CPS
Print Direction	Bi-directional with logic seeking
Line Spacing	DIP switch selectable; 1/6", 1/8"
	Programmable; 1/6", 1/8", 7/72", n/72", n/144"
Character Set	96 ASCII characters with descender
	8 international character sets
	49 semi graphics
Font Registration	Up to 62 fonts
Character Size	2.46 (H) × 1.67 (W) mm
Character Structure	Text mode; 9 × 9 Bit image, 480 × 8, 576 × 8, 960 × 8, 1152 × 8 dots/line
Print Size (character/line)	Ordinary (PICA)/(ELITE); 80/96
	Elongated (PICA)/(ELITE); 40/48
	Compressed (PICA)/(ELITE); 113/136
	Compressed elongated (PICA)/(ELITE); 57/68
Forms Handling	Form feed; Programmable length to 255 lines
	Horizontal tab; 12 positions
	Vertical tab; 12 positions
Paper Feed	Friction feed, Sprocket feed
Paper Width	Fanfold; 4 – 10 inches
	Cut sheet; 4-9 inches
Copies	3 max.
Interface	Standard; Centronics-style 8 bit parallel
	Option; RS232C with 2k buffer
Ink Ribbon	Cassette (service life; 3 mil. characters)
Power Requirements	AC120 or 220 V (50/60 Hz)
Power Consumption	20 W (standby), 50 W typ. (operation)
Dimensions	115 (H) × 399 (W) × 286 (D) mm
Weight	6.8 Kg

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