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 computers but special emphasis is placed on equipment in the TANDY range.

Details of the Group accounts, and the constitution of the Group, are available 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 in the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are available from the Secretary.

For confidentiality reasons, the membership list is not generally available, but members may ask the secretary for a list of members in their area, and mailshots to all members may be arranged.

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor, on disk if at all possible (5.25", NEWDOS-80 v2 or Montezuma Micro CP/M prefered, any combination of density, sides or tracks, but please say what it is). Your disk will be returned.

Newsletter Editor
Geof Smith
17 Homefield Rd.,
Bushey,
Herts WD2 3AP
01-950-6345

Secretary & Newsletter Publisher
Brian Pain
24 Oxford Street,
Stony Stratford,
Bucks. MK11 1JU
0908-564271

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EDITORIAL

I've just been reading May 80-Micro and they have some quite interesting figures on Tandy's financial and market positions in the US of A. In the last quarter of 1985 Tandy claim to be the top selling PC compatible and taking 1985 overall claim to be second only to Compaq selling 185,000 units during the year - this includes Model 1000's and 1200's in the various guises. In financial terms Tandy seem to be pulling out of the doldrums with sales for the six month period ending Dec. 85 totalling $1.8 billion, a 19% increase over the same period of the previous year. One should always take these sort of figures with a liberal pinch of salt since the accountants will have performed various 'massages' to present the best picture but none the less this would seem to be a reasonably healthy state of affairs. I still wonder how Tandy are going to fare in competition with the Far East clones, since a no-frills 2 drive, 256K, mono screen machine can be had for under #500. However I have seen the 1000 HD with 128K and a 10MB Hard disk for #1195. This machine is reputed to have a high degree of compatability and of course is backed by Tandy and not Ctl-Alt-Deli and other evanescent companies. The big compatibility problem is with the short slots, although cards for the XT and Portable will fit.

An interesting little tit-bit (no this isn't page three) for PCW 8256 users is that a firm called Citadel Products is selling an upgrade kit for the PCW. The advert claims that it is very easy you only need a screw driver and hacksaw blade (!). The kit adds a 1MB 3-inch disk drive and the extra memory. Cost is #189.95 or nearly 40% of a new 8512 - I wonder how much the individual items can be got for.

On the software front there are a couple of interesting front-ends (definitely not page three !) available to run on PC compatibles, namely 1DIR and PCBOSS. These are somewhat similar to Southern Software's File Commander in that they initiate by doing a directory, display the said directory plus various items of system information and then give you a number of options that you can use on the displayed files such as rename, copy, delete, execute etc. Both programs offer multiple file tagging and file selection is by scrolling with the arrow keys or wild-card. Both allow movement up and down directory trees, making this somewhat tedious process rather less error prone than from the normal command line. 1DIR (do they actually pay people to think up these names) also allows you to build command menus for running applications and batch files etc. Both programs are memory resident and attach themselves do the DOS so that when an application is terminated you automatically return to the front-end rather than DOS. In fact, if you execute one or other from the AUTOEXEC.BAT you need never see A> again. Both programs are to be recomended although the version I have of 1DIR does not work with DOS 3.X only 2.X. 1DIR is from Bourbaki Inc., PCBOSS is from Windmill Software.

For Model 4 owners who are suffering from withdrawl symptoms because they cannot PEEK and POKE to the screen I found this small BASIC routine that you can add to your own programs to give you back this capability.

```
1 ASSEMBLY$=STRING$(26,32) : A=VARPTR(ASSEMBLY$) +1 :
  A=PEEK(A) + PEEK(A+1) * 256
2 FOR I = 0 TO 25 : READ B% : POKE A+I,B% : NEXT : RESTORE
3 CHAR%=1 : A2=VARPTR(CHAR%) : IF A2<0 THEN A2=A2+65536
4 B2%=INT(A2/256) : B1%=INT((A2/256-B2%)*256)
5 POKE A+10,B1% : POKE A+11,B2% : PEAK=A : POAK=A+14
6 A=0 : B%=0 : A2=0 : B1% =0 : I=0
7 DATA 126,103,26,111,62,15,6,1,239,33,32,32,119,201
8 DATA 126,103,26,111,10,79,62,15,6,2,239,201
```

To read a screen character --- CALL PEAK(X%,Y%)
To write to the screen --- CALL POAK(X%,Y%,C%)
Where X% is an integer defining the row (0-23)
Y% is an integer defining the col (0-79)
and C% is an integer defining the character (0 -255) to poke.
The parameters must be integer variables not numeric constants
The variable CHAR% returns the value of the character peaked from the screen. I have not personally tried these routines since I don't run a Model 4.

My apologies to Don Harrison whose advert appeared in last month's issue with the incorrect telephone number, the ad is repeated at the end of this issue with the correct number - I hope.

Finally thank you to those who have sent their contributions on disk, it certainly makes my life easier (if there are typos in telephone numbers I can blame them on you !). For those who include tables or use word processors which put a CR/LF at the end of each screen line, we actually only use a line width of 65 chars since we are using a 10 cpi daisy to allow for reduction to A5 on printing.

LETTERS

Dear Ed.,

Best wishes in your post as Editor. I have every issue of the newsletter since issue 1 in January 1979 and they are a very useful reference.

Being a NEWDOS80 person I am always intrigued by the effort required to field the buffer and file data to discs by other systems. I have recently had to use the IBM system and this is still as antiquated.

Can anybody tell me where I can find a CMD "O" type sort for these new PCs?

The one area in which our newsletter falls short is the answers to questions which are asked by our members. I would like to see the answers to the questions, even if they are a couple of months later. (Agreed, if you manage to sort a problem on the phone, write in with the solution, it could help others, Ed.)

I learnt my NEWDOS80 file handling at a group meeting in a school in North London some years ago and feel that alone justifies my lifelong membership.

I shall be attending the Blandford show on Sunday 7th September, could we have a session on compiling basic programs?

Over the last seven years I have learnt a few tricks and the following one I think may be of use to other members.

Most times your computer will prove very reliable and errors are generally of your making. However, when your basic program crashes with a parity error try typing CONT and press ENTER, you can do this several times and you will often find you can get past the problem.

Finally, can I just say a public 'Thank you' to OS of Blandford Computers, who has provided more information and help for Tandy machines and their users than Tandy themselves.

Yours sincerely,

John Bennett, 11 Haywards, Pound Hill, Crawley, Sussex RH10 3TR.

Members letters cont.

Dear Ed.,

Having spoken to Mr Brian Pain on the telephone this evening, he advised me to drop you a line regarding my requirements.

Firstly a little about my interests. I studied for the City and Guilds Amateur Radio certificate, and was very pleased to pass the set examination, my call sign being G1JQH.

I have been the proud owner of the EG 3003 Genie I computer for almost a year now, adding a secondhand EG 3014 expander unit, two half height 40t SS disc drives and finally a secondhand printer.

I am looking into the possibility of adding Packet Radio and/or Amtor to my existing RTTY system, and I am given to understand that to do this, I would need the RS-232 interface board and interconnections etc.

Having been in touch with LOWES they tell me that the RS-232 Interface is no longer available, and even if were it would cost about #160, which is rather more than I am prepared to pay.

Firstly, are there any other members who share my interest in both computing and amateur radio and secondly, is there anyone with a second-hand RS232 board suitable for use in my Genie.

Thanking you in anticipation,

Dennis Spalding, 171 Minster Road, Minster-on-Sea, Sheerness, Kent ME12 3LH.

Model 4 extra memory - an update

Having installed a 512k memory upgrade in my model 4p and had it working for a month I am able to give a more considered opinion on the value of the extra memory. Like all things it has good and bad points. A good point is that it seems to work without snags and a bad point is that you miss the Ramdisk if it is not available.

When is it not available? I have a model 4p and a 4 and only the 4p has the 512k memory. The model 4 has only a 128k memory. Not only that but I cannot run my model III programs under TRS-DOS 6 and therefore Ramdisk 6 software cannot be used. I can use the older memdisk program TMDD to give me a 64K memdisk on the 128k machine but that will not work with some of the programs which do not respect Highmem.

In other respects I was pleased with the conversion and this left two alternatives. I could get round the software problems by purchasing another driver. There are two available and the original driver was designed to operate with Newdos 80 v 2. As most, if not all of my model 111 programs will run under Newdos, I sent off for the Ramdisk 1.14 driver. This will work on the 128k machine and give it the advantages of Memdisk which comes with TRS-DOS. For that reason the program has some advantage for the 128k machine when working with Newdos. TRS-DOS 6 users get very little for their money unless they upgrade the memory because they already have a 64K memdisk.

One of the reasons for having two systems is to provide a backup and it is highly desirable to have the model 4 upgraded. I had already found the that there is no such thing as too much memory and I decided to opt for the 1 meg expansion. It might be worth noting that the upgrades can be done in stages although it would not make too much sense to upgrade to 128k if you were likely to want 256k or above in the near future. The reason being that the 128k expansion uses 64k chips which are removed for large expansions. On the other hand the 256k and above, expansions are achieved by adding more chips of the same type.

Having waited for six weeks for the model 4p conversion to arrive, I made the point of asking for delivery advice. I got back a reply that said that the model 4p kit had been delayed because of the complexity ot the fitting instructions. This was understandable from the technical point of view as they were both complete and accurate when they arrived. On the other hand they must have known about the delay when they advertised in December and I appear to have got the first delivery in June. Had they mentioned the delay when they quoted prices in April, I would have ordered the Model 4 version.

The delivery note came back in well under two weeks and the kit arrived in the second post of the same day. It also brought some news that needs to be considered against my earlier report. The 4p conversion was complicated because it was done to the motherboard and made the minimum of alterations so that the

expansion could be removed. This is highly desirable as Tandy do not like servicing non standard machines. The model 4 being much larger inside, had room for a board which was grafted onto the motherboard and could be removed if required. Having told me last time that the board cannot be fitted to the 4p and that 512k was the largest upgrade that could be fitted, the new manual now stated the opposite. A board is available for the 4p and a full meg can be fitted.

The new instructions say that a board is now available for the 4p but it requires the Z80 microprocessor and socket to be removed. The Z80 goes back on the board and this is obviously one difference between the two boards. The board supplied for the model 4 has one or two PALs and some odd chips and components. One PAL is marked 512k and the other 1 meg. The 512k PAL is mounted directly to the board but the 1 meg one is in a socket. This would suggest that it is designed for ugrading in stages. While the socket would make it easier to fit the PAL, the upgrade would still require the chips to be piggybacked. This is not a technique for the novice and especially on expensive chips.

The Newdos and TRS-DOS ramdisk are claimed to be different but work alike. Having gained some experience on the TRS-DOS version, I quickly got the Newdos ramdisk operational. I had a slight problem because the Newdos version would not accept the seventh Bank and I had to change the Last=7 to Last=6. This may be due to the slight differences in the way they format but at the moment I have not had time to look at the calculations. With memory to spare it is not too significant. Having had a brief trial I shut down and resumed later.

On my second attempt I could not get the Formated ramdisk to work. It seemed to crash with a Wrong Data Record Type error (or something similar) and eventually I gave up. Later I got my son to have a go and it worked perfectly. Since that time I have not had any trouble except once when I tried to back up my booting disk to the Ramdisk. This may not make much sense to any one that has not used a 4p with Newdos or a Ramdkisk. Firstly the 4p will not boot off a standard Newdos disk unless MODELA/III has been installed by another DOS. I have a zapped disk which came from John Kilpatric and I believe was breathed on by Leo Knaggs. This disk is a hybrid of TRSDOS 6 and Newdos 80. So its not surpising if something odd happens if you move it into memory.

One of the advantages of the Ramdisk is that it can replace the system disk and any other disks. To do this you have a program that copies all the system files to the Ramdisk and makes it drive 0. From then on the system looks straight to the Ramdisk and saves the time taken in disk I/O. In fact you do not need a system disk and can have data disks on all drives.

To further speed up the working of the computer, it is possible to copy across all the programs and data files. All this can be done under Newdos by adding ILF=$ to RAMDISK/PAR.

This copies all the files (including SYS) from drive 0 and saves typing in a long list. It was this part that seemed to lock up with the zapped DOS disk. Using an ILF file it is possible to specify all the files and this is required for the TRS-DOS version. Although TRS-DOS does not support ILF files the Ramdisk program adds the facility. Both drivers can be set up by a JCL if more complex loading is required but I have not tried it.

Another facility on the Ramdisk is the ablity to change the number of the Ramdisk. This means that you can have it as drive 0 and make the former drive 0 into drive n, or you can set it up as drive n and have it as an extra drive. The decision is made on the bases of the software and your specific requirements. There is an obvious problem with having the Ramdisk as drive 0 as files are usually saved to drive 0 as default and the contents will be lost if you shut down without saving the data to disk.

A Ramdisk allows faster and sometimes more convenient working but rarely does it do anything that cannot be done another way. Perhaps the nearest may be the facilty to have a large data base that is largely protected from disaster. If a data base and the sysfiles are in the Ramdisk as drive 0. It is possible to write protect the Ramdisk and remove all the disks. That way the computer is fairly safe and can be left for access by a lot of relatively inexperienced people. They can pull the plug but cannot easily corrupt the data in memory and the data on the disks will remain safe.

The other feature of large Ramdisks is the way they can be used to suppliment the other drives. A large Ramdisk is more convenient than another drive for backing up and copying etc. The standard machine with its 40 track single sided drives can be given a large tempory drive but some care has got to be taken in saving data when the ramdisk can easily overfill a data disk.. It is also more convenient if you have a 40 and an 80 track drive. It is very easy to backup the 40 track drive to a switched 40/80 and then find that the disk is unreadable on a standard 40 track drive. On the otherhand a 40 track disk can be backed up via the ramdisk without resorting to disk swapping. Single 80 track drives can be backed up in the same way provided that there is sufficient memory available. (main reason for choosing 1 meg instead of 512k)

No system can ever be perfect and I have been disappointed in some respects. Firstly the speedup is nowhere near the 20X claimed. It is true that they only said 'up to 20X' and we all know that 'from #xxxx' means a second hand clapped out Mini and not the Rolls in the picture. The position is very complex because disk I/O is not the only factor in operating speed. I timed one program with a sequentional GET and PRINT and was surprised how long the PRINT took. Speeding up the GET will not affect the PRINT and I found that several programs were only accessing three times faster.

If you load a file into Scripsit from ramdisk it is speeded up dramatically and the same goes for Saves. If you load and save once, there is no overall gain as the files have to be copied to and from the disk in the beginning and at the end. If you have a virtual memory program like SuperScripsit the time saving is dramatic.

Loading data into Visicalc is only slightly faster than from disk. This is due to the processing time taken when the data is put into the cells. Multiplan loads its overlays from the ramdisk and is noticably faster in a notoriously slow program. The improvement is appreciable. Wordstar would also benefit but no CPM driver is available. This is particularly galling when you see how the small memdisk on Montezumas CPM can improve the program but lacks the capacity to have the program, overlays and data.

Sometimes programs do not benefit from the Ramdisk because of the way that they are written. SIR has overlays and makes frequent accesses to the data disk. It would benefit greatly from the faster loading. However the program is written to look for the modules on drive 0 and the data on drive 1. This means that the Ramdisk can only be used for one or other but as mentioned earlier it would be ideal to have it entirely in memory. This is not the fault of the Ramdisk and can only be resolved by modifiying the program.

The earlier report did not mention the price as this was not to hand. In fact the Access charge has only just arrived and appears as £167 charged in Dutch Guilders but there were no extras to pay. As the price is quoted in US dollars there is a three way currency calcualation. The price includes the memory, PALS as required and the Ramdisk driver. In my case I needed both model III software drivers (Newdos 80) and a model 4 driver (TRS-DOS). As I was purchasing two upgrade kits I got both drivers included but they and the chips are available separately.

Some people might like to buy a small upgrade and add the extra when the prices of memory fall. The Ramdisk drivers are the same for any upgrade from 64k to 1 meg. A 64K machine can have a 256K kit installed and the additional 256k added later. A 128k machine would become 320k. The 256K chips are available from Seatronics but other suitable chips could be used. To expand above 512k it is necessary to fit another PAL and one or two sets of 256k RAMS. Seatronics claim that they supply 125 nano second refresh chips to allow for the microprocessor to be speeded up. Slower and cheaper chips might be adequate but I have no experience in this field.

Derek Traylor Hornchurch, Essex

FINDWORD

(Ed. Like all good structured programs, this follows top-down principles and tre explanation procedure is near the end !. You will see that Geoffrey has used the dreaded GOTO in the later part of the program, I hope that he has included it just to show that it is possible to use it in PASCAL. I can't see at the moment why A CASE construct would not have done the job rather more elegantly, but programming isn't always about elegance, practicality is often more important)

```
PROGRAM Findword; (* To find a key word in TEXT files*)
(*G.H. &  A. Taylor*)

LABEL      Loop1, Loop2;

TYPE
  longline = STRING [255];

VAR
  dfile                                          : text;
  dfilename,Qfind                                : STRING [14];
  dline                                          : longline;
  n,linecount,pagecount                          : INTEGER;
    (*n is a general counter.
     linecount counts the lines in the file being searched.
     pagecount counts  the lines  used on the screen for printing
     the file.*)
  c                                              : CHAR; (*for inkey*)
  lprint                                         : BOOLEAN;

PROCEDURE Printline;

VAR len_dline       : INTEGER;

BEGIN

  IF lprint THEN (*if printer output*)
     WRITELN (lst,linecount:3,' ',dline)  (*print line*)
   ELSE  (*Not Printer output*)
     BEGIN
        len_dline := LENGTH(dline);
        IF (len_dline > 235) THEN pagecount := pagecount + 4
        ELSE
        IF len_dline > 155 THEN pagecount := pagecount + 3
        ELSE
        IF len_dline > 75 THEN pagecount := pagecount + 2
        Else
        pagecount := pagecount + 1;   (*paging routine*)

     END; (*If not printer output*)

  WRITELN(linecount:3,'  ',dline); (*On screen in any event*)

   IF pagecount >= 16 THEN   (*only if NOT lprint*)
```

```
      BEGIN
        GOTOXY(1,25);
        WRITE('Press any key to continue');
        REPEAT UNTIL KEYPRESSED;
        CLRSCR;
        WRITELN(dfilename);
        WRITELN(' Line    Text');
        WRITELN;
        WRITELN(linecount:3,'  ',dline);
        pagecount := 0;
      END; (*inkey$ routine*)

END; (*PROCEDURE Printline*)


PROCEDURE Start_chk_file;

BEGIN
  linecount := 0; (*init vars*)
  pagecount:=0;
  CLRSCR;
  WRITELN(dfilename);
  WRITELN('Line    Text');
  WRITELN;
  IF lprint THEN
     BEGIN
        WRITELN(LST);
        WRITELN(LST,'The      file      being      searched      is
.......',dfilename);
        WRITELN(LST,'Looking for ..................... ',Qfind);
        WRITELN(LST);
        WRITELN(LST,'Line    Text');
        WRITELN(LST);
     END; (*If lprint*)

END; (*PROCEDURE Start_chk_file*)

PROCEDURE End_chk_file;
BEGIN
  WRITELN;
  WRITELN('End of File');

WRITELN('---------------------------------------------------------
--------');
  IF lprint THEN
     BEGIN
        WRITELN(LST);
        WRITELN(LST,'End of File');

WRITELN(LST,'-----------------------------------------------------
------');
     END; (*If lprint*)

  CLOSE(dfile);
```

```
  IF NOT lprint THEN
    BEGIN
      WRITELN;WRITELN('Press any key to continue');
      REPEAT UNTIL KEYPRESSED;
    END; (*IF NOT lprint*)

END; (*PROCEDURE End_chk_file*)


PROCEDURE Query_print;
BEGIN
 REPEAT
    CLRSCR;
    GOTOXY(1,8);
    WRITELN('Do you  want a printed list  of the lines  in  which
the word is found?');
    WRITE('  Enter Y or N   :');
    READ(KBD,c);
    c := UPCASE(c);
 UNTIL (c = 'Y') OR (c = 'N');
 WRITE(c);

 IF c = 'Y' THEN
    BEGIN
      lprint := TRUE;
      GOTOXY(1,18);
      WRITELN('When the Printer is ready press..... "C"');
      WRITELN;WRITELN;
      WRITELN('Or to abort the printout press........"A"');
      REPEAT
         READ(KBD,c);
         c := UPCASE(c);
      UNTIL (c='C') OR (c='A');
      IF c = 'A' THEN lprint := FALSE;
      CLRSCR;
    END  (*IF c=Y*)
  ELSE lprint := FALSE; (*IF c <> 'Y'*)

END; (*PROCEDURE Query_print*)


PROCEDURE Getfile;  (*get filename & open file*)

 var OK : Boolean;
BEGIN
  CLRSCR;
  REPEAT   (*UNTIL FILE OPENED OK or dfilename = ''*)
     dfilename := '';
     gotoxy(1,8);
     WRITELN('Please Enter the name of  the TEXT file you wish to
search');
     WRITELN('(   with   the   Drive   and   file   extension   as
necessary)');
     WRITELN;WRITELN;
     WRITELN(' or just press <ENTER> for Menu');
     WRITE(':');
```

```
     READLN (dfilename);
     IF dfilename <> '' then
      BEGIN
         ASSIGN(dfile,dfilename);
         (*$I-*)   RESET(dfile)  (*$I+*) ;    (*turn  off e/check
while                                              opening    for
reading*)
         OK := (IORESULT = 0);

         IF NOT OK THEN
           BEGIN
             CLRSCR;
             GOTOXY(5,5);
             WRITELN(' Cannot find File ',dfilename);
           END;

      END (*IF dfilename <> ''*)

    UNTIL OK OR (dfilename = '');  (*file opened OK or dfilename
                                    is blank*)

END; (*PROCEDURE Getfile*)


PROCEDURE Findword;
VAR  xline     : Longline;
     II        : INTEGER;
     len_x     : INTEGER;

BEGIN

   xline:= dline;
   len_x:= LENGTH(xline);
   II:=1;
   WHILE II < len_x + 1 DO        (*Convert line to upper case*)
     BEGIN
        xline[II]:=UPCASE(xline[II]);
        II:= II+1
      END; (*WHILE II < ETC*)

   IF POS(Qfind,xline) <> 0 THEN Printline;

   IF (POS(Qfind,xline) = 0) AND (Qfind = '') THEN Printline;

 END; (*PROCEDURE Findword*)


PROCEDURE Heading;  (*Not necessary for running programme*)
BEGIN
CLRSCR;
WRITELN;
WRITELN('                        * * *  F I N D W O R D  * * *');
WRITELN;
WRITELN('Written   by  G.H.  &  A.  Taylor  42  Davenham   Avenue
Northwood Mddx HA6 3HQ');
WRITELN;WRITELN;WRITELN;
```

```
WRITELN('This  programme  searches through a  TEXT  file for  the
word you specify');
WRITELN('and displays each line in which the word is found.');
WRITELN;WRITELN;
WRITELN('The search is not case dependent.');
WRITELN;
WRITELN('A TEXT File is an ASCII file');
WRITELN('with  the lines  terminated with  a carriage return/line
feed.');
GOTOXY(1,25);
WRITE('Press any key to continue');
REPEAT UNTIL KEYPRESSED;
END; (*PROCEDURE Heading*)


PROCEDURE Enter_word;
BEGIN
   CLRSCR;
   GOTOXY(1,8);
   WRITELN(' Please ENTER the word you wish to find ');
   WRITELN;
   WRITE('or just press <ENTER> to print whole file  :');
   READ(Qfind);
   For n := 1 to LENGTH(Qfind) DO Qfind[n]:=UPCASE(Qfind[n]);
END; (*PROCEDURE Enter_word*)


BEGIN     (*MAIN*)

Heading;

Loop1:
Getfile;
IF dfilename <> '' THEN Query_print;

Loop2:
IF dfilename <> '' THEN
  BEGIN
    Enter_word;
    Start_chk_file;

    WHILE NOT EOF(dfile) DO
      BEGIN
        READLN(dfile,dline);
        linecount := linecount + 1;
        Findword;
      END; (*DO*)

    End_chk_file;
  END; (*IF dfilename <> ''*)

CLRSCR;
GOTOXY(1,8);
WRITELN('Press -');
WRITELN;
```

```
WRITELN('          1  To find a word in a new file');
IF dfilename <> '' THEN
 BEGIN
   WRITELN;
   WRITELN('          2   To find  a new keyword  but in the same
file');
 END;
WRITELN;
WRITELN('          3  To exit programme');
REPEAT
   GOTOXY(1,19);
   READ(KBD,c);
   c := UPCASE(c);
UNTIL (ORD(c)=49)  OR  (ORD(c)=51) OR ((ORD(c)=50) AND (dfilename
<> ''));
(*i.e until c = 1 or 2 or 3*)

IF c = '1' THEN GOTO Loop1;

IF c = '2' THEN
   BEGIN
      RESET(dfile);
      GOTO Loop2;
   END;

IF c = '3' THEN HALT;
END.
```

Geoffrey & Ariela Taylor.

Using Binary Coded Decimals (The DAA command).

I have recently been working on a program that needs a counter value. The solution that I came up with involved the use of binary coded decimals (BCD). BCD arithmetic is often used where the round-off problem associated with floating point math as normally implemented on micros could cause embarrassing problems in some software such as accountancy programs. The principles behind BCD are not well covered in the usual books and therefore you may interested in the routines that I used.

My program contained a simple M/C routine that uses the Byte Counter (BC) to tell it how much to add to a decimal value. The actual counting was done with the aid of DAA (Decimal Adjust Accumulator). This little used instruction applies the necessary correction to the contents of the Acc. if you are using BCD format. Before we can look at the routine it is necessary to understand BCD's.

The BCD represents a decimal digit (0,1,...,9) by the corresponding 4 bit binary number. Here are the ten BCD codes:

Decimal	0	1	2	3	4	5	6	7	8	9
BCD	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001

Here is an Example: 2039 => 0010 0000 0011 1001
7847 => 0111 1000 0100 0111

Note that 2 decimal numbers can be contained in 1 byte and that numbers of 1010 or greater are invalid. If a mathematical operation results in 1010 or greater then a BCD correction has to performed, ie do a carry as we would in normal arithmetic. One could write a routine to do this but the Z80 provides this automatically with the DAA instruction.
Lets look at an example

```
decimal          binary
   6719          0110 0111 0001 1001
 + 1126          0001 0001 0010 0110
   ----          --------------------
   7845          0111 1000 0011 1111
         HEX=>    7    8    3    F   Wrong !
```

If we perform a DAA on the low order byte, the following steps will be carried out:

```
   00111111 (3F)
+  00000110 (+6 as 1111 is not a BCD value)
=  00110101 (Answer: 35 and Half carry set)
+  00010000 (+Half carry)
=  01000101 (45)
```

If adding the half-carry resulted in a number greater than 1001

then the full carry would be set and is therefore used as a flag to transfer 1 to the next byte. This may all be a little confusing for you, so let's see the command in action.

```
                ; DAA Counter Demo Program - DAA/SOF
                ;  Copyright (C) 1983 BY P.Knaggs
                ;
                          ORG  0A000H
                ;
A000 00         NUMBERH:  DEFB 0     ; Reserve space for counter
A001 00         NUMBERL:  DEFB 0
                ;
A002 010100     START:    LD   BC,1           ; Set add value
A005 CD1AA0               CALL AddToNumber    ; Add it
 A008 DA50A0               JP   C,PROGEND      ; Is Counter over
the limit?
A00B CD34A0               CALL DisplayNumber  ; No - Print
                ;
                ; A simple delay so as you can see the value
A00E 0605                 LD   B,5
A010 48         LOOP:     LD   C,B
A011 06FF                 LD   B,255
A013 10FE                 DJNZ $
A015 41                   LD   B,C
A016 10F8                 DJNZ LOOP
A018 18E8                 JR   START
                ;
                ;
                ;
                ; ****************************
                ; ***   THE SUBROUTINES.   ***
                ; ****************************
                ;
                ;
            AddToNumber: EQU  $
A01A 78                   LD   A,B       ; Is it all complete
A01B B1                   OR   C
A01C C8                   RET  Z              ; Yes - Return
A01D 0B                   DEC  BC             ; No - minus 1
A01E 3A01A0               LD   A,(NUMBERL)    ; Get the value
A021 3C                   INC  A              ; Add one to it
A022 27                   DAA                 ; Decimal adjust it
A023 3201A0               LD   (NUMBERL),A    ; Put it back
A026 30F2                 JR   NC,AddToNumber ; Is it over 99 ?
                             ; No - Repeat for all of add value
A028 3F                   CCF      ; Yes - Stop DAA taking the
                                      ;the carry into account
A029 3A00A0               LD   A,(NUMBERH) ; Get the high value
A02C 3C                   INC  A              ; Add one to it
A02D 27                   DAA                 ; Decimal adjust it
A02E 3200A0               LD   (NUMBERH),A    ; Put it back
A031 D8                   RET  C              ; Return if over 99
A032 18E6                 JR   AddToNumber ; Else repeat for
                ;
                ;
```

```
50                  DisplayNumber: EQU  $
51 A034 21103C                LD   HL,3C10H   ; Point to the screen
52 A037 3A00A0                LD   A,(NUMBERH); Get the high part
53 A03A CD40A0                CALL DISPLAY       ; Print it
54 A03D 3A01A0                LD   A,(NUMBERL) ; Get the low part
55                  ;
56 A040 F5          DISPLAY:  PUSH AF         ; Save the BCD value
57 A041 0F                    RRCA
58 A042 0F                    RRCA
59 A043 0F                     RRCA             ; swop high  nyb  for
low nyb
60 A044 0F                    RRCA
61  A045  CD49A0                 CALL  NYB              ;  Print  the
Nybble
62 A048 F1                    POP  AF       ; Get the original value
63                  ;
64 A049 E60F        NYB:      AND  0FH      ; Strip High Nybble
65 A04B C630                  ADD  A,'0'    ; Add the ASCII offset
66 A04D 77                    LD   (HL),A   ; Put it on the screen
67 A04E 23                    INC  HL       ; Move the pointer on
68 A04F C9                    RET           ; Return from routine
69                  ;
70                  ;
71                  ;
72 A050 C350A0      PROGEND:  JP   $              ; End of routine
73                  ;
74                            EXEC START
75                            END
```

Cross Reference Table

NUMBERH	A000	6	42	45	52
NUMBERL	A001	7	35	38	54
START	A002	9	21	74	
LOOP	A010	16	20		
AddToNumber	A01A	30	10	39	47
DisplayNumber	A034	50	12		
DISPLAY	A040	56	53		
NYB	A049	64	61		
PROGEND	A050	72	11		

This program simply fills up the counter to 99 as a BCD digit. The routine AddToNumber adds one to the counter value. The routine DisplayNumber will move the high Nybble (1/2 a byte) to the low nybble. It then makes the value an ASCII character and puts it onto the screen. It then repeats the process for the low nybble. Play with it and see what you think.

P.Knaggs
12, Seymour Road, CHIPPENHAM, Wilts. SN15 3NH
Tel: (0249) 654940

OGGY OGGY OGGY

Sorry to have missed last month - pressures of work can be but a poor excuse !

Now, although I'm writing this in July, you should be reading it in September, just in time to be reminded about THE BLANDFORD WORKSHOP - SUNDAY SEPTEMBER 7th - see you there ! The Swindon agenda is coming together nicely. The emphasis this year seems likely to be on "applications" software, with talks on CP/M software common commands, DOS window routines, and, hopefully, a demonstration of Deskmate running on a 2000. Brian is offering a comprehensive session on 'Sage', the very powerful Model 4 accounting package, and Ariela will be giving us a further dBase II tutorial. I can only repeat my previous comment - if there is ANYTHING that YOU would like to see discussed or demonstrated at Swindon, then ring either myself or Bob Sparling - WITHOUT DELAY ! We're here to oblige, you know!

After what seems like years, I've suddenly had hundreds (well, actually three) requests for info from the 80-Micro library and so I've been galvanised into action to update the listings for same. (For the benefit of the new readers, 80-Micro is an American magazine dedicated to the Tandy computer, and we have a copy of each issue from which photocopies are available to NATGUG members). Since 80-Micro now publishes an annual index, I am now only recording all subsequent references and updates so that these can be supplied with any requested article.

That's all for this month folks, get your Swindon booking forms in as soon as possible (it helps the Hotel to know how much extra beer to get in !).

PS. If you do want to ring me at home (0373 72739) please remember my 8.30pm curfew - Thanks !!

KERMIT - Part IV

Rules and Heuristics

During a file transfer, one KERMIT sends information packets - file headers, data, and so forth, and the other KERMIT sends only ACKs or NAKs in response. The most important rule in the KERMIT protocol is

1. "Wait for a response before sending the next packet."

This prevents buffer overruns, and allows participation by half duplex systems. Of course, KERMIT should not wait forever; a timeout should occur after a few seconds if the expected packet has not arrived. Upon timeout, a sending KERMIT retransmits the current packet; a receiving KERMIT re-ACKs the current packet or NAKs the expected one. Some interesting heuristics are used in the KERMIT protocol to boost efficiency and improve error recovery. A number of important rules take care of the cases when packets are lost in transmission. The first can be stated as

2. "A NAK for the next packet implies an ACK for the current packet."

A NAK with packet number n+1 means the receiving KERMIT got packet n, sent an ACK that was never received, and not knowing that the ACK didn't get through (since we don't ACK an ACK), is now waiting for packet n+1, which was never sent. In this case, we simply send packet n+1. An important exception is when the missing ACK is for a Send-Init packet; do you see why? The next rule,

3. "ACK and discard redundant packets."

handles the situation where the same packet arrives again. The sending KERMIT timed out waiting for an ACK which was sent, but lost, and retransmitted the packet. The receiver must discard the redundant data and ACK the packet again; to do otherwise could have undesirable effects, like adding the same data to a file twice or opening the same file multiple times. Note that the situation resulting from a lost ACK depends upon which side times out first. KERMIT must handle another situation arising from possible lost packets:

4. "NAK the expected command."

The potential problem occurs in either the Receive Init state or when a KERMIT server is waiting for a command. In either case KERMIT won't know whether communication has begun if the other side's initial packet was lost. KERMIT can't assume the other side will time out and retransmit, so it must check periodically by sending a NAK for packet zero. If KERMIT gets no response it assumes nothing has happened yet and goes back to sleep for a while. But sending periodic NAKs opens the door to the buffering problem. Some systems buffer input for a device; when a program isn't looking for input some or all the input is saved by the computer for future re quests. This can cause problems

when talking to a KERMIT server or sending a file to a KERMIT in receive wait. If some time has elapsed since activating the remote KERMIT and escaping back and starting up the local KERMIT, a number of NAKs may have accumulated in the local KERMIT's input buffer, so:

5. "Clear the input buffer at the beginning of a transfer."

If the input buffer is not cleared, the local KERMIT will think the remote side is having trouble receiving the first packet. In an effort to get the packet through, it will be sent again; this repeats for every NAK waiting in the input buffer. By the time the first ACK is finally encountered in the buffer, a number of duplicates of the first packet will have been sent out. If this number exceeds the NAK threshhold, the connection will be broken. If not, however, the second packet will be retransmitted once for each of the extra ACKs the remote KERMIT correctly sent for the duplicate first packets. This can continue throughout the file transfer, causing each packet to be sent many times. So, in addition,

6. "Clear the input buffer after reading each packet."

Any computer that buffers its input should clear its input buffer before the transfer and after each packet that arrives successfully. But since not all systems provide a clear-buffer function, we may add another rule:

7. "Discard redundant ACKs."

In the situation just described, the first packet would be sent out multiple times, once for each buffered NAK. Upon receipt of the first ACK, the second packet would go out, but the next response would be another ACK for the first packet; by rule 7, KERMIT would simply take in the redundant ACK, ignore it, and look for the next ACK, until it got the desired one, in violation of the spirit of Rule 1. If we allowed ourselves to violate Rule 1, we could add a final rule, "An ACK for packet n also ACKs all previous packets," as is done in network protocols like DDCMP, allowing data packets to be sent in a continuous stream. KERMIT cannot use this rule for many reasons: sequence number wraparound, buffer overflows, locking out half duplex systems (how can they NAK a bad packet if they can't get control of the line?). Thus if we violate rule 1, it must be only in a very minor way. Here is a sequence of packets from a real file transfer. Each packet starts with Control-A, shown as ©A.

```
©A) SH( @-#©                                          !Send Init
©A) YH( @-#%                                  !ACK for Send Init
©A+!FMOON.DOC2                                      !File Header
©A#!Y?                                      !ACK for File Header
©AE"D  No celestial body has required J  !First Data packet
©A#"Y@                                !ACK for first Data packet
©AE#Das m%%%uch labor for the study of its#      !Second Data
                                                  !packet, Bad
```

```
©A##N8                                  !NAK for second Data packet
©AE#Das much labor for the study of its#    !Second Data packet
                                            !again
©A##YA                                      !ACK for second
                                            !Data packet
©AE$D#M#Jmotion as the moon.  Since ClaA    !etc...
©A#$YB      (many packets omitted here)
©AD"Dout 300 terms are sufficient.#M#JU     !Last Data packet
©A#"Y@                                      !ACK for last Data
©A##ZB                                      !EOF
©A##YA                                      !ACK for EOF
©A#$B+                                      !EOT
©A#$YB                                      !ACK for EOT
```

In the first packet, we see following the control-A the packet length ")" (41 , less 32, or 9), followed by the packet type, S (Send-Init), followed by the appropriate parameter declarations: maximum packet length is H (72-32=40), timeout is "(" (40-32=8), number of padding characters is 0 (space=32-32=0), the padding character is 0, end-of-line is "-" (45-32=13, the ASCII value of carriage return), the control-quote character is "#", and the remaining fields are omitted, defaulting to appropriate values. The final character "©" is the single-character checksum, computed as follows (all numbers and computations in decimal, and "sp" represents a space):

```
    )    sp   S    H    (    sp   @        #
    41 + 32 + 83 + 72 + 40 + 32 + 64 + 45 + 35 = 444
```

Remember the various bits are combined in the single character checksum in the following way

```
    CHK = S + ((S AND 192) / 64) AND 63
```

where S is the sum of the ASCII values
therefore

```
    CHK = 444 + ((444 AND 192) / 64) AND 63 = 62
```

convert to a printable character with the char function

```
        char(62) = 62+32 = 94 = "©"
```

The receiver ACKs with its own parameters, which are the same. Then comes the file header, the file, EOF, and EOT. One data packet was corrupted by a burst of "%" characters, NAK'd, and retransmitted.

* Performance

For text files (documents or program source), assuming an average line length of 40 with lines separated by a carriage-return/linefeed pair, the only control characters normally found in the text file, we see about 5% overhead for prefixing of control characters. Assuming no line terminators for packets (although one or both sides may require them), no retransmissions or timeouts, and no time wasted for the line to turn around between packet and response, then for average packet length p, using a single-character checksum, the KERMIT protocol overhead consists of:

5 control field characters in the data packet
5 characters in the acknowledgement packet
+ 0.05p for control character quoting

This gives 10/p + 0.05 overhead. E.g. if the packet length is 40, there is 30% overhead. If p is 96 (the maximum), there is about 15%. These figures will vary with the average line length and the frequency of other control characters (like tabs and formfeeds) in the file, and will go up with immediate retransmissions, and way up with delayed retransmissions. For binary files, the quoting overhead will be higher. But transmission overhead can also go down dramatically if prefix encoding is used for repeated characters, depending on the nature of the data (binary data containing many zeroes, highly indented or columnar data or program text will tend to benefit). Each file transfer also gets a fixed overhead for the preliminary (Send Init, File Header) and terminating (EOF, EOT) packets. If the mainframe end of a connection is heavily loaded, it may take considerable time to digest and process incoming characters before replying. On half duplex mainframes, there may be a pause between sending and receiving, even if the load is light; this might be used to advantage by preparing the next packet in advance while waiting for the current ACK. Another problem may occur on heavily loaded mainframes, that of undesirable timeouts. Timeouts are intended to detect lost packets. A heavily loaded system may take longer than the timeout interval to send a packet. For this reason, mainframe KERMITs should take the requested timeout interval only as a minimum, and should adjust it for each packet based on the current system load, up to a reasonable maximum. On a noisy line, there is a greater likelihood of corrupted packets and therefore of retransmission overhead. Performance on noisy lines can be improved by reducing the packet length, and thus the probability that any particular packet will be corrupted, and the amount of time required to retransmit a corrupted packet. A KERMIT program can unilaterally adjust the packet length according to the number of retransmissions that are occurring. Short packets cut down on retransmission overhead, long packets cut down on character overhead.

* "User Interface"

KERMIT was designed from a mainframe perspective. Like many mainframe programs, KERMIT issues a prompt, the user types a command, KERMIT executes the command and issues another prompt, and so on until the user exits from the program. Much care is devoted to the command parser, even on microcomputer versions. The goal is to provide English-like commands composed of sequences of keywords or operands, with abbreviations possible for any keyword in any field down to the minimum unique length, and with "?" help available at any point in a command. Not all implementations need follow this model, but most do. The basic commands are SEND and RECEIVE. These allow most KERMITs to exchange files. Operands can be the name of a single file, or a file group designator (e.g. with "wildcards") to transmit multiple files in a single operation. Although some systems may not provide wildcard file processing, the KERMIT

protocol allows it. The CONNECT command provides the mechanism for logging in and typing commands at the remote host, which is necessary in order to start the KERMIT on that side. The CONNECT facility provides character-at-a-time transmission, parity selection, remote or local echoing, and the ability to send any character, including the "escape character" that must be used to get back to the local KERMIT. However, there is no error detection or correction during CONNECT, just as there normally is none between an ordinary terminal and a host. When two systems are dissimilar, a SET command is provided to allow them to accommodate each other's peculiarities, for instance SET PARITY ODD to add odd parity to all outbound characters, or SET LOCAL-ECHO to do local echoing when connected as a terminal to a half duplex system. The SET command must sometimes be used to supply information to the target system on how to store an incoming file with respect to block size, byte size, record format, record length. Most KERMIT implementations take special care to reassure the user during file transfer. The names of the files being transferred are shown, and a dynamic display is made of the packet traffic, showing successful transmission of packets as well as timeouts and retransmissions. Messages are issued when the user connects to the remote system or escapes back from it, and KERMIT prompts identify the implementation. Helpful error messages are displayed when necessary; these may emanate from either the local or the remote system. The final disposition of the transfer is clearly stated, complete or failed. The actions required of the KERMIT user depend upon the degree to which the KERMIT programs involved have implemented the specification. Minimal implementations require that the user connect to the remote host, start KERMIT there, issue a SEND (or RECEIVE) command, escape back to the local machine, and issue the complementary RECEIVE (or SEND) command. All this must be done for each transfer. More advanced implementations allow the remote side to run as a "server" and to take all its instructions in special command packets from the local KERMIT; all that is required of the user on the remote end is to connect initially in order to start the server. The server will even log itself out upon command from the local KERMIT. A minimal server can process commands to send files, receive files, and shut itself down. Given overpage is an example of a session in which the user of an IBM PC gets files from a DECSYSTEM-20. The actions shown are required for minimal KERMIT implementations. The parts the user types are underlined, comments begin with "!". Everything else is system typeout.

```
A>kermit                          ! Run Kermit on the PC.
Kermit V1.20
Kermit-86>          ! This is the Kermit prompt for the PC.
Kermit-86>connect      ! Make connection with mainframe.
  [Connecting to host. Type CTRL-]C to return to PC.]
@terminal vt52     ! Set your terminal type (optional).
@login my-id password  ! Login using normal login method.

    (The DEC-20 prints various messages.)

@kermit                           ! Run Kermit on the DEC-20.
 Kermit-20>                       ! This is Kermit-20's prompt.
 Kermit-20>send *.for             ! Send all FORTRAN files.
 ©]c                              ! Type the escape sequence to
                                  ! return to the PC.
          [Back at PC.]
 Kermit-86>receive                ! Tell the PC files are coming.

  (The progress of the transfer is shown continuously on the
                                                      screen.)
          Transfer Complete.
 Kermit-86>connect                ! Get back to the DEC-20.
 [Connecting to host. Type CTRL-]C to return to PC.]
 Kermit-20>exit                   ! Get out of Kermit-20.
 @logout                          ! Logout from the DEC-20.
   Logged out Job 55, User MY-ID, Account MY-ACCOUNT, TTY 146,
    at 24-Apr-83 15:18:56,  Used 0:00:17 in 0:21:55
  ©]c                             ! Now "escape" back to the PC,
  [Back at PC.]
  Kermit-86>exit                  ! and exit from the PC's Kermit.
```

The session is somewhat simpler when the remote KERMIT is being run as a server. The user must still CONNECT, log in, and start KERMIT on the remote end, but need never again CONNECT to issue subsequent SEND, RECEIVE, EXIT,LOGOUT commands, even though many transactions may take place. All actions can be initiated from the PC.

Next month really will be the final session on Kermit where I will detail the commands available in the version that run on Model 1/3 (under TRSDOS etc), Model 4/Genie CPM, Model 4 TRSDOS 6.x and PC versions.

READERS ADVERTISEMENTS

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Tandy DMP 110 printer and Tandy Model I computer.
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The above is offered O.N.O. - buyer collects.
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NEW ADDRESS
As from 7th July, 1986 Leighton Davies will be contactable at Glammor, Brynna Road, Pencoed, Bridgend, Mid Glamorgan.
Telephone - (0656)-860398.

RB080486 A survey of NATGUG computers.

Original Micro computer system.

1) Micro computer model:
2) Date when purchased :
3) Price :
4) List ALL later additions :

About yourself.

1) Are you ;
  i) a student . . . . . :
 ii) a professional. (please specify):
 iii) other (please specify) . . . . :

About the system

1) Why did you buy a computer ?

2) Why did you buy a model from the Tandy range?

3) What uses did you envisage for your computer ?

4) What was it actually used for ?

5) Where you content with system purchased ?

6) If no to 5 then please state your upgrade path ?

7) What high level languages did you use on your system ? If more than one, please put in order of use:

8) Did you use an assembler on your system ?

9) Please list the top 5 application programs that you used ?

10) How many HOURS were spent on your system per week ?

11) What (if any) features of your system were most irritating ?

12) What (if any) features of your system were most pleasing ?

13) What is your impression of the reliability of the system

14) What problems (if any) have you had with your system ?

15) Please comment on :-
i) Support given by Tandy or supplier

ii) Support given by NATGUG or other local user groups:

Documentation.

1) Was the documentation for setting up :-
/ EXCELLENT / GOOD / POOR / USELESS /

2) Was the documentation for using BASIC :-
/ EXCELLENT / GOOD / POOR / USELESS /

3) Was the documentation for using Machine Code :-
/ EXCELLENT / GOOD / POOR / USELESS /

3) List the best features of the documentation.

4) List the worst features of the documentation.

5) Make any additional comments about documentation here:

Changing system. (only applicable if you have changed system)

1) Name new micro :
2) Date . . . . . :
3) Price. . . . . :

4) What was your reason for changing ?

5) Where did the old machine go ?

6) What features do you like about new system ?

vi) What features don't you like about new system ?

vii) What features did you miss when comparing new with old ?

Please return the completed form with any additional comments to :
R. Bains, 452 Leagrave Rd., Luton, Beds., LU3 1RH.
Thank you for taking the time to complete this questionaire.

NATGUG NEWS

Volume 8 Issues 2/3 August/September 1986

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 computers but special emphasis is placed on equipment in the TANDY range.

Details of the Group accounts, and the constitution of the Group, are available 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 in the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are available from the Secretary.

For confidentiality reasons, the membership list is not generally available, but members may ask the secretary for a list of members in their area, and mailshots to all members may be arranged.

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor, on disk if at all possible (5.25", NEWDOS-80 v2 or Montezuma Micro CP/M prefered, any combination of density, sides or tracks, but please say what it is). Your disk will be returned.

Newsletter Editor
Geof Smith
17 Homefield Rd.,
Bushey,
Herts WD2 3AP
01-950-6345

Secretary & Newsletter Publisher
Brian Pain
24 Oxford Street,
Stony Stratford,
Bucks. MK11 1JU
0908-564271

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EDITORIAL

Just a short editorial this month, I have been cajoled by Dave (OGGY) Washford to get this on the road asap to ensure that you all know about SWINDON. Don't forget * OCTOBER 17 - 19 * Let us show those QL'ellers just what real computers are about. I mustn't be too rude about them since Leon has contributed an article to this issue, which is more than 95% of our membership bother to do ! As you can guess were getting short on articles again so how about extracting the digit and putting pen to paper. I still have real doubts about the continued existence of the group and the newsletter will almost certainly have to go bi-monthly if the situation does not improve rapidly.

I was fortunate enough (or maybe crazy is the right word) to be able to get to the PCW show on a business only day. Disappointing to see no sign of TANDY at the show, neither the firm nor the user group. I would have thought that TANDY UK might have had their two new machines there, the new 1000 and 3000 models, but perhaps there are none in this country as yet. The whole show seems a little bit boring these days, the star of the show was of course AIRO (An Ibm Rip Off) as Alan Sugar calls it, meaning the new Amstrad 1512. I actually sat and played with one for about ten minutes and was quite impressed. The colour monitor is pretty ropey but the paper-white monochrome is acceptable, the keyboard has a reasonable feel and the key placement is better than IBM PC but not as good as the AT layout. The machine is pretty damn fast (see Ariela Taylors bench-mark) and would probably be even more impressive with a V30 cpu. The only major draw-back seems to be that if you want to use another monitor you still have to leave the Amstrad one attached since it contains the power supply. Doubtless some enterprising little firm will quickly get around that. If you are in the market for a MSDOS PC type machine I really can't see any other choice unless you really like wasting money.

The only other hardware of real note was a device to read a whole sheet of text into your PC in one go. It still needs printed text but can manage many type styles, only £3,000 ! Most software was pretty boring, with a lot of emphasis on do it yourself Rupert Murdoch kits - desk top publishing, such as Pagemaker etc. The only thing I bought was 25 80TR DS disks for fifteen pounds. How the hell can Dysan etc get away with charging 35 pounds for the same thing.

Enough rambling, I hope to see many of you at Swindon.

OGGY OGGY OGGY

With apologies to Rodney - Oh what a plonker ! Yes, me ! For years I've extolled the virtues and superiority of Newdos 80, my only complaint being that Visicalc never had as much free memory as it had under DonkeyDos - and all those wise sages sorrowfully shook their heads in sad agreement. Plonkers all of you as well, I say ! Today I made the second greatest computing discovery of my life (the first was that I couldn't spell when typing in a Basic listing!). All my ND80 disks have System AP set to 62128 (to accommodate Southern Software's EDIT) - if I reset this to zero then Visicalc comes up with that magic 23. Well, at least I found out before the Model I finally goes out to grass - pity it wasn't six years earlier !!! I only hope that this admission of incompetence might help someone else.

What a good weekend we had at Blandford - and thank you, Helen and your team, for your usual superb luncheon. One would expect NATGUG meetings to become a little more sedate but this one was just as hectic as my first one at Milton Keynes. It was very encouraging to have the official attendance of Tandy UK - and many members were more than delighted with the bargains that they picked up. Tandy have promised to come to Swindon and if they bring more of their surplus stock for sale then I recommend that you study it carefully - apparently several binders sold at Blandford contained much more than the titles indicated - real Value For Money !!

Separate talks by Rex Simpson of Tandy and Paul Ostwind combined to show how we just mustn't let NATGUG become, in reality, just a Model 4 Users Group. Although Model 4's, and the 1's and 3's, will continue to give good service for years to come, MSDOS has proved to be the way we need to go if we are to avoid the fate of the Dodo; fortunately Paul's experiences show that we have no need to be either afraid or reluctant of taking this step and I do believe that his demonstration at Swindon could have you all racing off to Os for your new 3000.

I was pleased to hear that other members have purchased Longview, the Prosoft program that prints wide Visicalc spreadsheets downwards. As I've said before, Prosoft is one of the few companies left supporting our community and we must, in return, support them. I would suggest that perhaps a few people who have "borrowed" some Dotwriter fonts to "try" might like to give Prosoft some encouragement by ordering one (or more) of their other disks.

Of the items that Tandy were selling off cheap for the Model 4 was Target Plannercalc - would any user of this care to write a review for Natgug, giving comparisons with the old faithful, Visicalc ? We probably could find time for a volunteer to demonstrate its powers at Swindon - any takers ?

Dotwriter users - I've been promised a "public domain" program that in effect is the good ol' CP/M SQUEEZE but which runs

under DOS. I should have it in use by the time of Swindon, and as it is Public Domain then I'll willingly share it. Just to wet your appetite below is a small example of the versatility of Dotwriter.

DOTWRITER STUNTS

Before the dreaded MS-DOS takes over with its fantastic Fontasy, let us have another look at Prosoft's Dotwriter printing software. Although there are more than enough afficianados about to provide a veritable font of expertise, one does observe many examples that could be greatly improved. I would like to offer a few points for consideration:

Line Height - experiment with differing values.

Alternate Fonts -which will use the line height of the main font - can be used to good effect. Note how the D and the S in the headline, from the MOON/PR set, have been mixed with the ANT/PR character set.

DOUBLE WIDTH using the Escape codes imbedded within your text can affect just one character or many.

COoncantenation off is a real beauty for price lists since it will allow you to form left and right columns on the page. you can have three columns if you try hard enough !

The above was all printed with KRON and this tends to cause exaggerated spaces between words. These two sentences have KROFF and the difference should be quite noticeable.

There will be a prize for the best Dotwriter exhibit at Swindon. See you there !

Washy

Talking (again) of Swindon, I hope you've all noticed the cabaret item for Saturday evening - SEE YOU THERE I TRUST. David Washford, 6 Houston Way, Frome, BA11 3EU. 0373 72739 (before 8.30pm please).

The Tandy 3000 at work

Our laboratory has been using a microcomputer system for report entry and retrieval since 1982. A 'report', for us, is the result of a diagnostic test for one patient and varies from under 200 to over 2000 characters of text. We produce over 10,000 reports a year, nearly reaching CPM's 8 Mb file limit by December, and need 'instant' retrieval of individual reports by patient name or number as well as batch searches on various combinations and criteria.

We started with a 20Mb S100 based system and dBase II. The S100 system (which it is kinder not to name) was chosen because it offered expandability to multiuser when we had enough money, and dBase seemed the quickest and easiest way of producing programmes that did what we need.

We had no real problems with the software once version 2.4 of dBase appeared. Not so for the hardware though. Our hospital is old and the electricity perhaps not the most steady and the computer varied from mildly temperamental to unusable for weeks on end. In fact the Genie III that was bought for programme development and emergencies spent so much time as the office working machine that we had to get a hard disk for that too. Eventually the S100 system collapsed dramatically in a cloud of nasty smoke (in the middle of one of my frequent, acrimonious phone call to the supplier too. It was the only time I've known that gentleman at a loss for words). When returned to us it did no worse than hang up or corrupt files occasionally for many months but, predictably ,these occasions became more frequent and so when we had some money again a replacement computer seemed to most urgent use for it. The question of course was what.

At that time the choice was either another CPM system or an IBM(ulator). We have no need (or use) for graphics or number crunching and dBase is noticeably slower on 8088 machines (see table) so the IBM PC family didn't seem to offer any us advantage. On the other hand we were fairly near the practical limits of CPM and did need multitasking if not multiuser capability. Speech recognition and CD storage, both very desirable for us, seemed to be on the remote horizon too but clearly not for CPM. While we were still undecided the AT was announced and appeared to have what we wanted. A particularly bad couple of weeks with the S100 system came just as the Tandy 3000 was arriving over here - so enter our 3000.

The 3000 is Tandy's version of the IBM AT, but running at the faster 8 Mz speed of the new ATE. It comes with a 20 Mb hard disk and a single floppy which can work as either high capacity 1.25 Mb, or standard IBM 350K format. Recognition is automatic for everything except formatting, but of course special disks are needed for 1.25 Mb.

The actual machine consists of the usual 3 pieces - monitor,keyboard and 'works'. The main box is quite a bit smaller

than the AT with no particular provision for floor mounting (and you can't turn the logo round either) and fits comfortably among the clutter on the office desk. The keyboard is more or less standard IMB layout apart from very welcome indicator lights on the caps/scroll/num lock keys. The touch is nice and our secretaries like it. The combined cursor and numeric keypad system is heartily disliked by all of us though so the keyboard is being changed for one with a separate cursor cluster like the 4P. We tried both colour and monochrome monitors. The colour one is excellent, with a good crisp character set, entirely acceptable for text work. Unfortunately it has no anti-glare surface and we can't get away from windows in the office so we had to have the monochrome. A pity; colour is a most enjoyable way of wasting time!

Os and Neil delivered the machine over the Spring Bank holiday and I had it at home for a week to get used to MS DOS and make all the programme changes needed because MS DOS calls its floppy drive A: and insists that its hard disk is C: - all 20 odd MB of it - while the CPM hard disk has A: B: and C: (Leo is trying to configure a 16 Mb drive C: under CPM for us though). It then went to the office and has been running happily since. It is noticeably faster than its unlamented predecessor, even running our large dBase system. Our dBase batch searches take about half the time and anyway are now done as a background task while the secretaries continue entering new reports and dealing with phone queries and unexpected hang-ups and file corruption are just a nasty memory now. We have had one monitor fail, luckily on a Sunday and Blandford's usual efficiency had us working again the same day.

The documentation consists of three thickish manuals - DOS, BASIC and DESKMATE- and a thin User's guide. DESKMATE is a multifunction wordprocessor, spreadsheet and simple database which is bundled' with the 3000 and its manual is clearly designed so that even complete beginners can quickly do something useful with their system. I've not tried to use the BASIC manual yet but the DOS book is clear and helpful (and indexed). With the 3000 it seems that Tandy have at last accepted that it doesn't pay to be different - from IMB of course - even if your product is actually a lot better, as the 2000 was. We've tried a lot of software so far, both commercial and public domain, and the 3000 has run pretty well everything we've tried on it, including programmes like Borland's Editor Toolkit which is said only to run on IBM and very close compatibles . The only failures have been versions of programmes that only run under DOS 2 and so presumably don't work with the AT itself either. The 3000 comes with DOS 3.

We've now had the 3000 for about 3 months and it provides what we wanted - multitasking without loss of speed, reliability and expansion capability. There have been some minor problems of course - this seems inevitable with anything new. The monochrome monitor had not yet been modified for 50 cycle operation (although the colour one has) and needs a programme similar to HERTZ50. This wasn't supplied with the system and until Os

collected it from Tandy the screen was too wobbly for sustained use. The other niggle, which will presumably be there at least until the next release of DOS, is that the high capacity floppy format program refuses to work from the hard disk if we have 15 buffers, 20 files assigned as recommended for dBase.

These are minor criticisms though and in general we are very happy with the system. At over £2500 (get exact price) this is obviously not a machine for the private purchaser. For anyone wanting a computer for business use though the Tandy 3000 should provide an excellent system, backed by a firm which is unlikely to vanish overnight, at a price which is not that much more than many unknown clones.

Some 'benchmarks'

The Norton Utilities give the 3000 a speed rating of 8.4 times that of a 'standard' IBM (There is something of a bias towards Integer arithmetic in the Norton Speed Test - Ed)

My dBase 2 'benchmark' is taken from a charity covenants programme and updates 100 donor records. It involves money and date calculations as well as disk and screen i/o so is strictly a practical comparison and not a scientific one. For what they are worth though the figures, using dBase 2 version 2.43* European (the slowest version) were -:

Tandy 3000	Hard disk	3 min.	40 sec.	Floppy	7 min.	30 sec
Compaq	Hard disk	11	10	Floppy	14	33
Amstrad 1512	----------NA----------			Floppy	9	01
Tandy 4p (Montezuma CPM)	Hard disk	9	53	Floppy	15	25

Ariela Taylor

KERMIT - part V

In this final article on Kermit, we will take a look at the commands and facilities offered in the Kermit versions that are of most interest to us, ie. for the Model 1/3 (TRSDOS, NEWDOS etc.) Model 4 (TRSDOS 6.x), Model 4 (CPM) and Model 1000, 2000, 3000 etc (MDSOS).

The Table below gives a summary of the features that were considered 'desirable' for an ideal Kermit implementation and shows which are present in the various Kermits that we are most interested in.

Kermit Features

Feature	Machine / Operating System 1/3	4-TRSDOS	4-CPM	MSDOS
Local Operation	Yes	Yes	Yes	Yes
Remote Operation	No	Yes	No	Yes
Xfer Text Files	Yes	Yes	Yes	Yes
Xfer Bin. Files	Yes	Yes	Yes	Yes
Wildcard Send	No	Yes	Yes	Yes
©X/©Z interrupt	Yes	Yes	Yes	Yes
Fname avoidance	Yes	Yes	Yes	Yes
Time Out	No	Yes	Yes	Yes
8th bit prefix	Yes	Yes	Yes	Yes
Alt. Blk. Chks.	Yes	Yes	Yes	Yes
Term. Emulation	Yes	Yes	Yes	Yes
Set Comms	Yes	Yes	Yes	Yes
Transmit break	No	Yes	Yes	Yes
IBM (m-f) Comms	Yes	Yes	Yes	Yes
Trans. Logging	No	No	No	No
Session Logging	Yes	Yes	Yes	Yes
Act as server	No	No	No	Yes
Talk to server	Yes	Yes	Yes	Yes
Loc. File Man.	Yes	Yes	Yes	Yes
Handle File Atts.	No	No	No	No
Command/Ini files	No	No	Yes	Yes
Printer Control	Yes	Yes	Yes	Yes

In general terms the Model 1/3 version is the most primitive. It does not use a buffer, merely writes a sector to disk as it comes down the line. There is very limited terminal emulation and the help facilities are very poor. For example there is no implementation of Escape to fill in the response if that typed already allows unique interpretation. However the protocol implemetation does work and with very little bother, the general ambience is just a little crude.

The MSDOS version is perhaps not surprisingly, the most sophisticated, although the Model 4 TRSDOS 6.x version is not far behind. The MSDOS version can act as a server, ie. you can operate it remotely, using another machine / terminal to control both Kermits. Both the TDSDOS 6.x and MSDOS versions can request

system functions of the server (ie. do a dir, change directory etc) when talking to a remote. The CPM and Model 1/3 versions can only GET and SEND files to a remote, system operation is not implememted. The degree of printer control is also quite varied, the Model 1/3 and CPM versions just copy it out to the printer as it comes over the line and just assume the printer can keep up. The TRSDOS 6.x version does some XON/XOFF handshake. The MSDOS version uses device re-direction and can put a transferred file to Disk, Printer or Screen but not more than one of these at a time.

For those who need it, the terminal emulation in the MSDOS version is excellent and the VT102 mode is superior to at least two commercial emulators that cost several hundred pounds. Both the MSDOS and TRSDOS 6.x versions can use .ini files to take a string of commands from the file at start-up as if they had been typed from the keyboard and are therefore easy to configure to a particular situation with minimum user interaction. Both these versions can also use TAKE files which are similar to .INI but used within Kermit to run repetitive tasks. With the exeception of the Model 1/3, all other versions support wildcard transfer of files in both directions.

Although it states in the list that the ability to set communication line conditions is included, this is in fact very minimal in all Kermits, since including a lot of specifics to set up the RS-232 would ruin the portability of the implemenation. Therefore most Kermits expect you to set up baud-rate, parity, etc external to the program. However all of the above versions allow you to alter the baud-rate. The parity / word length area is almost always the cause of initial setting up problems. If 7 bit word length is used the Kermit will often connect alright but will not transmit file, since it uses all 8 bits in calculating the checksum. Therefore even the INIT package will not get through. The proper sequence is: **8 bits, N parity, 1 stop**

A list of the direct commands available in the MSDOS version at the Kermit> prompt are given below. You will actually see this list if you type the ? at the prompt.

```
Bye       (to remote server)
Connect   (to a remote host)
Clear     (key definitions)
Close     (logging file)
Comment   (text is ignored)
CWD       (change dir &/or disk)
Define    (a command macro)
Delete    (a file)
Directory
Do        (a macro)
Exit      (leave Kermit)
Finish    (to remote server)
Get (remote file opt new name)
Hangup    (drop DTR, hangs up )
Help      (show this list)
Local     (opt command prefix)
Log       (session to a file)
Logout    (to remote server)
Push      (go to DOS)
Quit      (leave Kermit)
Receive   (opt local fname)
Remote    (prefix for commands)
Run       (a program)
Send      (local file new name)
Server    (become local server)
Set       (most things)
Show      (various definitions)
Space     (left on current disk)
Status    (show main cond'ns)
Take      (do a command file)
Type      (a file)
Version   (show Kermit's id)
```

Most of the commands are self explanatory but one or two need a little amplification. Bye, Exit, Finish and Logout are all ways of "quitting" but used in different circumtances. Exit just finishes running your local kermit and drops you at DOS READY. The others are used when connected to another Kermit operating in Server mode. Finish terminates the remote kermit but still maintains the connection. Logout terminates the remote Kermit and logs you off the remote system. Bye closes all connections and terminates your local Kermit as well.

Remote and Local are only in the MSDOS and TRSDOS 6.x versions and precede a whole set of sub-commands used for performing operating system commands on surprise, surprise the remote or local machines. Do and Define are involved with the operation of macros. The meaning of this much abused term in this context is the ability to define a new keyword which may cause the operation of a number of sequential Kermit commands ie,

DEFINE telenet set parity mark, set baud 1200, connect

defines the macro telenet which is then used by typing DO telenet when you want to set up conditions to access telenet

One command only in the MSDOS version is PUSH which will cause another COMMAND.COM to be loaded and run on top of the Kermit. This allows you to do all sorts of DOS things, run other programs etc. then with the MSDOS Exit command, return to the Kermit in exactly the same state as you left it. Its a sort of primitive multi-tasking where the job left behind stays dormant until you get back to it.

The SET command allows you to set up a whole host of things and configure the system to your particular application and circumstances. To give you a flavour of the range of options I've listed the major Set options below for the MSDOS Kermit.

Options available for the SET command

Baud or Speed	many speeds
Bell on/off	at end of xfers
Block-check-type	checksum/CRC
Debug on/off	display packets
Default-disk	
Destination	Disk/Screen/Printer
Display quiet/reg/serial	show cnts?
Dump filespec	screen to disk
End-of-line char	cr or whatever
EOF Ctrl-Z/NoCtrl-Z	©Z ends file?
Escape char ©]	or whatever
Flow-control	xon-xoff or none
Handshake	xon/xoff/cr/lf/bell/esc..
Incomplete file	keep/discard
Key	key + macro definition
Local-echo	on/off
Mode-line	on/off
Parity	even/odd/mark/space/none
Port for i/o	1/2/COM1/COM2
Prompt string	(new Kermit prompt)
Receive parameter	many things
Remote on/off	show xfer counts?
Retry	limit for packet send/receive
Send parameter	many things
Take-echo on/off	display commands?
Terminal	none, Heath-19, VT52, VT102, + many terminal setup param'ers
Timer on/off	time packet waiting
Warning on/off	if file renamed

Well, I think that must cover most aspects of Kermit. I think you will be seeing a great deal more of it in the future, not from me I hasten to add but as part of your general communication software. There are many comms programs appearing now which include the Kermit protocol not least being the very well reviewed shareware product PROCOMM which has in fact included 7 (yes seven) different protocols in its repertoire. If you want to get hold of a copy of Kermit, then Leo Knaggs care of Os House is the best person to contact for Model 4 CPM or TRSDOS 6.x versions, I think he also has an Amstrad version. I can supply Model 1/3, Genie CPM and MSDOS versions, and I also have access to the master tapes for many of the mini and mainframe versions - so if you've got a CRAY-11 hiding under your bed which will not talk to your Model-1 then give me a ring and we will send **super frog** to your rescue.

Geof Smith.

ZORLAND C - A REVIEW

I didn't believe it when a dealer friend of mine showed me a leaflet describing the Zorland C (ZC) compiler. It was claimed to be Lattice C compatible, supported the 8087 and 80287 maths co-processors, produced highly optimised code, used the DOS linker (therefore generated native code), was K & R and Unix System V compatible, could generate ROMable code, etc., all for £29.95! The aforesaid dealer owed me a favour so I actually got the package for nothing. I just happened to have a genuine IBM PC/XT with a hard disk cluttering up my desk (on loan for a job I'm doing), so I transferred all the files on the two disks supplied onto the hard disk and tried the compiler out. The documentation was rather crummy, but all the functions provided with Lattice C seemed to be present, as well as various goodies in the proposed ANSI standard such as enumerated data types, prototyping, passing of structures to and from functions, etc. I tried a small program, and the compiler seemed to work, so I thought I'd give it a real test.

I'd been using the Softfocus Btree package for some time with Lattice C on my QL, so I loaded the source code (about 150K in total) onto the XT's hard disk and tried compiling it. Much to my surprise, it compiled very quickly, without any problems. I was even more surprised when the test programs supplied compiled and ran perfectly. Error handling with ZC doesn't seem as good as with Lattice C: missing out the semi-colon terminating a statement resulted in several error messages, whereas Lattice C usually recovers quite well from that sort of error. Full text error messages are displayed. A nice touch was the display of the time taken by each phase of the compiler.

Several unusual functions are provided with ZC, such as a direct disk sector read and write function. I used this to write a little program that enabled me to transfer QL disk files (read as successive sectors) into PC files. It should be possible to read Model I/III/IV disks in the same way. A rudimentary text editor is included with the package, written in ZC, presumably. It's fine for beginners, but something much more powerful would be needed for serious users. Apart from the error handling, and the documentation, ZC seems just about as good as Lattice C, which sells for over £300 for the PC version. I haven't used Microsoft C, which is about the same price as Lattice, but I doubt if it's much better than ZC, although it does have what looks like a very nice debugger. At £29.95 ZC is a real bargain, and highly recommended. I'd like to check it properly against Lattice C on the PC, but I only have the Lattice QL version, and the Lattice 68000 cross-compiler, which runs on the PC, but only produces code for a 68000 machine. Perhaps another member with Lattice C on a PC or one of the Tandy clones would help me conduct some proper tests.

I got my copy of Zorland C from:-
D.S. Enterprises, 25 Trinity Rise, London SW2 2QP. (01-671 0209)

Leon Heller, Tel: 01-994 7976

SUPERCALC2 ON AMSTRAD 8256

As a long time user of VISICALC on a Tandy Model III, I found some startling differences when using Supercalc. In the main these were a greater range of facilities plus a great increase in speed, but even here the 8256 has not really enough memory available to cope with the bigger spreadsheets although compared with the 13K the Tandy offers it is some advance.

However to get back to the facilities offered on Supercalc2, arranged alphabetically these are:-

SLASH COMMANDS (/)

/Arrange -this is a very good Sort Program, which also adjusts the formula if desired, it also specifies the row or column range
/Blank - same
/Copy - copies blocks of cells complete with Adjust or Values only.
/Delete -as VC except deletes files as well
/Edit - as VC
/Format - mainly as VC but includes User defined format which gives such things as Blank for Zero, floating $, embedded commas and scaling factor
/Global -F - displays formula, N - turns off/on curser advance (here I miss the VC enter which occurs with the arrow keys)
/Insert -as VC
/Load - can call up Directory and also load part only of program, also can consolidate and adjust
/Move - Row or Column to new location
/Output -Display - All contents - Printer/Disk/Overwrite
/Protect -range or active cell only
/Quit - to leave SC2
/Replicate - as VC
/Save - all/part/values only/overwrite
/Title - locks in Titles
/Unprotect - as protect
/Window -includes synchronise split-wise scroll
/X(eXecute - creates files which perform SC2 operations automatically without any keyboard entry - this is something I am not familiar with but it appears to have great possibilities.
/Zap - empties all cells.

Functions

These are generally as VC, some additions being the Textual Values may be transferred and referenced as formula values, also Calendar functions are provided but these are (MM/DD/YY) format and so are not so useful. A Status setting appears at the bottom giving cell width, Memory, Last Row/Col,? Help key, error message,

number of characters used in formula in current cell. Text can be entered over several cells provided they are not occupied or a blank cell can be protected to stop repeating character.

ENTRY GUIDLINES

Some differences are the dual use of Tab keys, they can be relocated by pressing the ALT and RELAY keys together, and E,X,S,D become the curser keys when used with ALT, this releases the curser keys to become a standard numeric key pad, this save entering numbers using the top row of the keyboard.

Another important addition is the use of the IF,OR,AND and NOT functions, this means a construction similar to basic can be used eg IF a is true, then b else c. In practice IF(D14<>0,MAX(A8:A13+1,0), That is if D14 does not equal zero (or is blank) then the highest number in the list has one added to it, otherwise none is added to it (ooh so that is what it means). Maximum characters per entry Numbers 16, Formulas 116, Test 115, again formulas can access formulas in other cells to extend range.

However in spite of this quantum leap from Visicalc I see that Supercalc4 has now been released which jumps again into the Lotus 123 field, however what we as a small business require is something very friendly which enables us to put in figures and to let the program do the rest, including sorting and invoicing as required, as I see it Supercalc2 is not yet at this stage - but again it may be that a few weeks is not enough to test its full potential.

In any case I would be please to hear from experienced users particularly with regard to the /X option so I can sort and print information as desired, the type of thing is three columns of amounts, sort them into monthly accounts , say 50 of them and print them onto invoices at the end of the month - and that is just the beginning.

JOHN JEFFERY. (Derby 881239)

Trials and tribulations with Ramdisks

After my first flush of enthusiasm I started to use my Ramdisk thoroughly and ran into some problems. Some of these are probably unique to me and I hope to be able to clear them up in the future but I have also found out something about Ramdisk working that may be of interest to 128K users.

The 512K upgrade does not give an extra 512k of Ramdisk but a total memory of 512K. 64K is taken out for the basic system or 128K in the case of banked programs like Pronto but you still get a worthwhile increase, with at least 350K approx of Ramdisk storage. Increasing the memory side does not do anything unless you have some software to use it and Seatronics supply two drivers which work like larger versions of the TRS-DOS 6 Memdisk. There are other drivers advertised in the States which may or may not work on the Seatroncis expansion. I say that because the patches mentioned in the Natgug mag did not work but that may be my fault.

The two drivers available, are for TRS-DOS 6 and Newdos 80. This is not just a matter of personal preference. TRS-DOS 6 is needed for the model 4 mode programs and Newdos for those that are only available in III mode. (Spelchek, SIR etc). I found the TRS-DOS driver would not work with more than one file Random Access file Open on the Ramdisk but I could have a sequentional access one. This seemed to relate to a problem with GET but also CLOSE which made it impossible to get round the problem by closing 1 before opening 2. Seatronics say the problem has been solved and have sent me a new version. (it would have been preferable if they had notified me before I complained and thus saved me hours of work. So far the new version seems to be working and certainly the problem with two files has been fixed.

The Newdos driver would not work at first and Seatronics could only suggest that I returned the driver in case it had got zapped on the way. More by accident I found that one of my DOS disks worked and others did not. There must be some subtle differences and as the ones that worked came from somebody else. I suspect I have applied a zap incorrectly or missed one out. At the moment I still not have discovered what is wrong but I can get the Ramdisk to work and it does not suffer the restrictions of the TRS-DOS version. I should mention that there have been versions 4.0 to 4.14 in Newdos but Ramdisk 6 is the first version for TRS-DOS 6.

The 1 meg installation in my model 4 is a sorry story but again this might be down to my machine. At first it apeared to be working and I could format a Ramdisk that could backup an 80 track DS drive. I soon noticed that I was having problems and eventually found about 250K worked while the rest was unreliable to the point of being useless. As there is very little technical information available it has not proved simple to find the fault but standard checks suggest that mine is a very early model 4 and there are several faults in the ROMS. I should add that Phil Haswell has not been able to diagnose the problem with the model 4 and has doubts

about the refresh rates of the chips supplied. This is further complicated by the lack of technical information given with the conversion. All I can say is that my 4p works quite well with the 512k conversion but my model 4 has not proved reliable over 250k. The conversion for the model 4 has been on sale for over a year and there have been no other complaints mentioned in the press, so mine may be the exception.

When manipulating files the RAMDISK is very useful but the method that you use is likely to affect the ease or time taken. This applies even more if you have to Sort a file from Memdisk to or from a floppy as can happen due to the limited size of the standard 64k memdisk. You could copy the data to the memdisk and then sort it back via an index or you can Get it in sorted order to a sequentional file on the memdisk. I found that there is a big difference in the time take and the best way was to sort from the memdisk. I put this down to the fact that the memdisk does not have a head to move physically from record to record. I also notice a big difference in writing to an existing file as I normally delete files so that old data is not left from and earlier version. It is much quicker if the file exists because the head does not have to keep going back to the directory. The best way is to CREATE the file before writing to it, as the time saved on a large file can be considerable.

When you get down to using the Ramdisk it transforms programs. Especially with programs that use disks (surprise, surprise). If you search for a string in FED6 it will find it in seconds even if it is at the end of a 200k file. Spelchek is improved and allows you to check on screen without the frustrating waits. I had hoped to use SIR because it has overlays and lots of disk handling which should have been improved. Unfortunately it has been written so that the data files are on drive 1 and the overlays on drive 0 this is necessary with 40 track SS drives if you want a full disk file. You can put the data on the Memdisk or the Sys and Modules but not both. Thanks to Molymerx and Gordon Hatton I have now fixed SIR to work on the Memdisk to give one of the fastest data bases around.

One of the nice features of the Ramdisk is the silent working but in a way that is also a problem for the neurotic. If you Convert a file from ASCII or reverse in Superscripsit, you know that it takes time. The periodic drive access lets you know that it is still working and has not crashed. Although the screen has that infuriating 'wait a moment message' we all know that the moment could be for ever because the system has crashed (why doesn't it play music while you wait). Using a Ramdisk will reduce the overall time to a third or less but it gives no indication that it is still alive. On other occasions things happen so fast that you think that it has not worked. Perhaps a future version will have a simulated drive noise like the electric clocks that tick.

The latest news from Seatronics is that there is to be a new Ramdisk driver for external Ramdisks. I have no further details but perhaps they are going to do a battery powered Ramdisk that I have heard about.

(Latest update to the story. - Ed)

Since the above notes were written, several things have happened. The 1 Meg version on the model 4 has proved to be unreliable but there are many strange things about that particular machine. It was an early cassette machine upgraded by an amateur enthusiast! I also found what appeared to be a bug in the Ramdisk drivers. The TRS-DOS one has been confirmed and version 6.1 seems to overcome the problem. The Newdos 4.14 seems to be a local fault as follows and it would be preferable to dump the previous copy that I sent you. An update and some othe bits are enclosed.

I have traced my problem with the Newdos 80 driver but not actually found the answer. It appears that if I try to initialise the Ramdisk driver it ends up with a "wrong diskette record type". If I use the 4P disk breathed on by Peter Knaggs it works. Thus my master disk is wrong? BUT if I use the Peter Knaggs Newdos I get problems with Newdos file handling in Basic. I looked at the SYS setting and PDRIVES and both seemed correct and the same.

If I set up the Ramdisk with the zapped disk but copy the sysfiles from the other (the ramdisk supports ILF files), the system works beautifully and very fast. It is possible that I have corrupted my master disk when I did some of the zaps in the early days. Seatronics maintain that there is no problem with Ramdisk version 4.14 and although there are not many (if any) other users in the UK but I am inclined to believe them. This sounds complex but what I am trying to say is that the fault appears to be with my copy of Newdos which has been zapped incorrectly.

Derek Trayler Tel. 04024 47661.

Readers Advertisements

For Sale.
TRS80 Model 4.

128 K with 2 built in SS DD 40TR disk drives	£500
Tandy 7 Printer	£50
Model 4 Visicalc	£50
Model 4 Hartforth	£50
Typitall word procesor	£50
Montezuma CPM	£50
Hypercross	£20
LPA Microprolog	£50

Please contact Dr. J.R. Sampson. Tel:061 440 9705.

NATGUG NEWS

Volume 3 Issue 4/5 October/November 1986

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 computers but special emphasis is placed on equipment in the TANDY range.

Details of the Group accounts, and the constitution of the Group, are available 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 in the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are available from the Secretary.

For confidentiality reasons, the membership list is not generally available, but members may ask the secretary for a list of members in their area, and mailshots to all members may be arranged.

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor, on disk if at all possible (5.25", NEWDOS-80 v2 or Montezuma Micro CP/M prefered, any combination of density, sides or tracks, but please say what it is). Your disk will be returned.

Newsletter Editor
Geof Smith
17 Homefield Rd.,
Bushey,
Herts WD2 3AP
01-950-6345

Secretary & Newsletter Publisher
Brian Pain
24 Oxford Street,
Stony Stratford,
Bucks. MK11 1JU
0908-564271

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EDITORIAL

Time really seems to fly by when there is an editorial to get out each month. Swindon has come and gone and was greatly enjoyed by all those who attended. The system room was as usual crowded with machines, but as you might expect the balance is now swinging away from the old Model 1's to somewhat newer kit. Those of you who still use their old faithfuls might like to know that the 1986 Othello competition run in the US of A was won by a program written by Charlie Heath of Microsmiths running on - guess what ? Yes a venerable Model 1. It beat off competition from the likes of DEC, IBM and ATandT.

Back at Swindon, Model 4's were the most prevalent machines although we had a sprinkling of MSDOS clones, including a Tandy 3000, a Toshiba portable, a PCC IV/VIII (mine) and two Opus's (Opii ?). There was a fair amount of 'software evaluation' going on for these machines. The most unusual and interesting hardware was a hybrid experimental system comprising 8 Z80's configured for parallel processing, I/O being handled by a Model 1 and output going through Carl Rabe's highly modified colour system. The setup was being used to calculate and display Mandlebrot sets (.... I think).

As usual Os House had a consultation suite on the 8th floor, fixing errant machines and displaying some of the new wares from the Tandy stable including the Model 1000 EX and the new Model 3000 (an XT Clone driven by an 80286). He'd also managed to get hold of an Amstrad 1512 for demo purposes. I'm still not keen on the colour screen on these machines but they really are very good value for money. A friend of mine has actually managed to take delivery of one and persuaded the engineers at GEC where he works to unsolder the 8086 from the main PCB and replace with a chip carrier, into which he plugged a NEC V30 cpu. They then compared its performance with a Standard 8 Mz IBM PC/AT. Overall the speed of the Amstrad was only down by about 10%, compared to the AT. Amazing considering the price differential between the two systems.

Two of the most interesting software items that I saw at the meeting, were both to do with graphics software running on the Model 4 and both were being developed by group members. The first was a program to display and manipulate Dotwriter fonts as they would be printed, this is of course possible with Fontasy under MSDOS but not normally possible for the Model 4. Secondly Mike Collcutt (see Read - Data Construct in this issue) is developing a utility to interface Turbo Pascal to the Hi-Res graphic board of the Model-4 with the possibility of extending it to use existing graphic libraries. If the Model 4 / TRSDOS environment were still a force in the market place, then I think that both these programs would be commercial prospects. It's good to see that the group still has a great fund of talent.

Still talking of software, I often get asked which is the best wordprocessor for MSDOS machines. There's no easy answer,

its all horses for courses, and to my mind there is no easy to use, relatively powerful and above all cheap system. There are plenty of cheap editors, that are suitable for programmers and plenty of very powerful, word processing packages, that do everything including make your morning coffee but cost an arm and a leg. The middle ground is somewhat sparse. Two possibilities to consider are PC-WRITE and Volkswriter Deluxe. PC-WRITE is shareware (copy freely but if you use it a lot then register for $75) and VW-deluxe is now available for £49.95 and represents very good value for money. Both word processors are rather heavy on use of ALT/CTL/SHIFT command sequences but offer a lot of facilities. Neither is a real WYSIWYG wordprocessor but for that sort of money you can't really expect anything else.

Again returning to Swindon, we were honoured(!) by the presence of Tandy themselves at the meeting, but talking to one of their sales executives they still seem ambivalent as to whether or not they should publically acknowledge the existence of the group. Brian tells me that we've had no new members has result of Tandy store referral, but we do now get pleas for help from Store staff when they don't know how to do something. I'm not sure that is the object of the groups existence.

However, Swindon was a great success and I'd like to publically thank Dave Washford and Bob Sparling for all the work they put into organising the Swindon meetings.

NB. In the two Pascal programs in this issue, the left and right curly brackets that mark comments will be printed as $..†.

Readers Letters

Mrs K. Lynsky,
75 Alderton Heights,
Moortown,
Leeds
Yorks LS17 5LT

Dear Ed.,

I have recently bought a TRS 80 Colour 2, 16K computer and am trying to find out where I can write to for a subscription to a computer magazine called "RAINBOW" which is I believe published in the USA. I would be grateful for any information that readers could let me have concerning this magazine,

yours sincerely

Mrs K. Lynsky

-O-O-O-

Mr. J.B. Roadley
27 Roundhill Rd.
Leicester
LC5 5RJ
Tel. 0533-739914

Dear Ed.,

I wonder if any of the members know if there are any ROMS available for the Model 4 that are analogous to those available for the BBC machine, ie containing a wordprocessing program etc. If anyone should know of the existence of such devices I'd be grateful if they could let me know. Also I would like to obtain a copy of Versafile on 5.25 disk for either the Model III or 4. If anyone has a copy for sale, please contact me at the above address,

Yours sincerely

J.B. Roadley.

Notes from ANON

General Chat.

It must be almost a year since I last appeared in print. It has been a very busy time for me as, in September my successor started taking over, then in January the audit of my last accounts has started and this took about three weeks. After that there was preparation for my last Finance Committee meeting, which involved production of several papers. This done I left my lady successor to carry on on her own (she has resigned since) and set myself to writing a system for administration of about 2,000+ Welfare records. With system analysis and training the job took about two months. The coding spread to 6,325 lines of dBASE II code in eleven programs. The screen has 44 fields so I had to combine data into 32 fields available in dBASE II and there are eleven index files required for different jobs. After original snags and surprisingly few bugs the system was well in use before I left and the Welfare Officers found it very helpful. But I still have a manual to write - sometime in the future.

The final job was production of a data entry program for the Corps property. I still have to write programs for data manipulation but this will not be anything as big as the Welfare system.

At the end of June three generals and two colonels very kindly gave a lunch for myself and my wife in the Rag, I was presented with a couple of lovely water colours by the Committee and a walking stick by the staff and that was that. As I left, the RHQ were proud owners of model 4P ('little menace'), 2 models 4, 2 20MB NEC drives, two external 80 track DS drives, a DW II and 2 Epson printers - all that in addition to the mini installed in 1982. So, to finish my working life, I managed to install quite a few bits of TRS (or compatible) equipment.

In July I bought a house in West Tarbert, Harris, Outer Hebrides and on the 1st of September I took the boss, my computers and some of our possessions to the Western Isles.

My computer equipment now consists of Model 4, Model 4P with two 40/80 DS drives, HSC1686, 20MB NEC hard drive, dual external 80 track DS drive, WS300, Epson FX100 and a printer switch which permits switching between two computers and two printers. Very clever box - but it does strip 'LF' from the output. I had to reset switch 2.4 on the Epson to stop printing everything on one line. The only bit of equipment, which I want now, is a standby power supply unit. Apparently the winter winds tend to bring the power lines down and I would hate to have a hard drive crash.

It is astonishing how Parkinson's law works with everything. Two Tandy drives did not provide much storage so, some time ago, I bought twin Cumana 80 track DD DS drives. I thought myself really rich in hard storage as my Model 4 had some 1.75BM storage. Now my 20MB NEC, which is attached to Model 4P, is

almost full and I have less than 3MB left free. My NEC is divided into four logical drives (all under CPM) and to keep the directories managable I use different user areas. With the drive comes a program called CPMFIX.COM which permits a program residing in User area 0 to be run from any other User area and also flags the programs and data changed since last backup.

Also very useful is NEWSWEEP.COM as this permits copying programs between different User areas. One has to beware though of a couple of bugs. These are - on deletion the program/data is deleted in all User areas ie if one has say PROGRAM.CMD in User area 3 and User 5 (the two being different programs but with the same name) NEWSWEEP will delete both of them although asked to delete one only say in area 5. Another bug occurs on copying. Should one wants to copy say WS.COM from User area 0 to User area 6 NEWSWEEP will change the flag and there will be only one WS.COM in User area 6. I discovered these two bugs when I was given a public domain program on CP/M 2.2 system disk containing all system programs. I copied this disk to a User area other then 0 and found that the system programs disappeared from area 0. I pipped them back to area 0 and then, with NEWSWEEP, I tried to delete them from the other area and deleted them in both.

Supercalc 2.

Having got myself SuperCalc 2 (version 1.2) it is time that I should say something about it. My version runs under MSDOS 2.11 on my box which has 256K memory. After the system is loaded the remaining memory is 226K. The SC2 occupies 38K and so, the first nice surprise. Supercalc tells me after initialisation that I have 188K free. Multiplan under CP/M gives about 13K and VisiCalc on 128K Model 4 about 90K. One can really make a sizeable spreadsheet in 188K and, anyway, my box can accommodate 768K of RAM. No worry about running out of space.

SC2 announces itself and gives an option of entering into the spreadsheet or providing 'Help' information (Return or ?). The spreadsheet contains 254 rows and 63 columns (15902 cells if I can multiply). At the bottom of the screen are three lines : status, prompt and entry.

The status line shows the direction the cursor is pointing (<, > and similar arrows for up and down), the address of the current active cell, cell format, P if protected entry, and, if the cell is not empty, the cell contents preceded by type (Text, Rtxt (repeating text) and Form (Formula)). Inexperienced users do sometimes find on the right hand side of this line a message 'Formula ERROR'. Pressing any key apart from <enter> clears this message and one can proceed.

The second line in data entry mode shows the width of the active cell, remaining memory in Ks, last col/row (being the last cell of the rectangle containing data) and finally '?', which is a shout for help. This can be invoked at any time in command

mode. In command mode this line displays the current prompt - about which later.

The third line also has a dual purpose. In data entry mode it shows current cursor position and the data being entered. Data may be a string (begin with "), repeating string (begin with ') or formula. In this context 5/12 or SUM(A1:A8) are both formulas. In the command mode the following can be specified: = being Goto, ! for recalculation, ; switching the windows, & for eXecute Resume and / for selection of slash commands.

SuperCalc has two cursors - spreadsheet cursor and editing cursor. Only one cursor is active at the time - normally the spreadsheet cursor unless one is entering data or executing a command. The movements of the spreadsheet cursor are controlled either by the arrow keys or the usual WS diamond (©E, ©X, ©S, ©D). The same keys control the editing cursor with the only change that down arrow or <CTRL>X delete the character under the cursor and up arrow or <CRTL>E open up a space (Insert). Pressing <ESC> whilst the editing cursor is active permits the use of spreadsheet cursor to select a range of cells whilst entering a command or a formula. Entering a character without inserting a space overtypes the character under the cursor. TAB moves the edit cursor to opposite end of the edit line and it works with data entry mode and edit mode. Backspacing to the beginning of the data entry line, or <CRTL>C, or <CRTL>Z return control from the editing cursor to the spreadsheet cursor.

Whilst on the the cursor control I ought to mention the '=', Go To command. This command places the cursor on the target cell if that cell is in the current window. If not, the target cell is placed in the top, left hand corner. The same thing happens to the current (active) cell if the Go To command is invoked without specifying the target cell. I find this placing of the target cell in the top left-hand corner one of the less endearing aspects of SuperCalc. I would prefer to have the selected cell in the middle of the window (if possible).

The spreadsheet unit is a cell. Each cell has content, value and format. Format of cells formatted individually is displayed on the global status line, but is not displayed for cells formatted within global, row or column range.

Cell content may be text, repeating text, formula or the cell may be empty. All cells are empty to begin, all strings are started with " and repeating strings with '. Anything else entered is a formula whether containing functions or just simple numbers. Text strings may be up to 115 and formulae up 116 characters long.

Cell value is one of the following - numeric, date, text, not available or error. Empty cells, text cells or repeating text cells have numeric value of 0. Formula cells can have numeric, date, textual, not available or error values.

Cell formats can be varied greatly - more than in VisiCalc or Multiplan. Columns can have even 0 width and cells can be hidden. Format does not alter the value of a cell - only the way the cell is visible (or not) or printed. Column width 0 and hidden cell are not the same. Width 0 column is not visible at all but one does require two movements of the cursor to go to it and pass it. Hidden cells are visible on the spreadsheet but the data contained within is hidden (not visible). If I last the course and time will permit I will cover the formatting when on /(slash) commands.

Diverting from the manual - I have been playing with the customisation of CP/M version of SC2 with absent Install modules and a corrupted HLP module. I managed to borrow the installation modules of SC (not SC2) and managed to install SC2 with it. I also imported from my 16bit version of SC2 the HLP module and it works. Interesting - isn't it? SC2 (CP/M version gives 26K work space - against some 13K of Multiplan) and of course it is very fast whilst Multiplan can only be described as ponderous. However SC2 does not have the NAME option so one cannot go to a name. GOTO can also accept a reference to a row or column only (GOTO 8 puts the cursor in A8 whilst GOTO D puts the cursor in D1). SC2 cannot use the second 64K of Model 4 for data but it does fit there very nicely which speeds up the proceedings quite a lot.

Also I have managed (quite easily) to 'export' and 'import' the data files between the 16bit and 8bit versions. Here I have made some 'discoveries'. In my MSDOS file I have a spreadsheet which I use to analyse the football forecasts (yes - I am still at it using dBII and no - I still have not won anything). This file contains 600 cells - as when last used - and it occupies 11K in 16bit and 13K in 8bit versions. The sizes of the cells also differ. In 16bit one cell averages 18.77 bytes whilst in 8bit this climbs to 22.17 bytes.

Thre are also some differences in the performance by the two versions apart from the size of the spreadsheet available (26K in 8bit and 188K with 256K memory in 16bit version). CP/M SC2 loads much faster and, sometimes, responds faster to the help request but it recalculates much, much slower (This however can be improved by loading SC2 into top 64K on the 128K RAM models). Also there is a difference in /L and /S commands and changing the drive. CP/M version does accept the change to a disk other than the program disk but only to permit reading the directory. One has to enter the drive number if the spreadsheet to be loaded or saved is not located on the program disk. The MSDOS version specified program disk and data disk. Option C from the 'directory' permanently changes the data disk designation and this remains in force until changed again. More about SC2 in the future, near future I hope, but this will have to do for the first installment.

Anon.

Printer set-up

The following is a useful little utility which I have written to set up either an Amstrad DMP 2000 or Epson printer. The source code is written in Turbo Pascal. It should be easily convertable for use with other printers and Pascal compilers.

The only Turbo specific procedures used are:-

CLRSCR	clears screen
GOTOXY(x,y)	positions cursor on the screen
HIGHVIDEO	turns on reverse video
LOWVIDEO	restores normal video

I have a compiled version running on both a Tandy Model 4 and an Amstrad CPC6128. If any 'Straddy' users want a copy, please send a 3" disc and a stamped addressed envelope for return postage and I will supply a compiled COM file for use under CP/M+. Those using Model 4 can have a compiled copy on a Montezuma 40 SS DD data or 80 DS DD data diskette if a blank disk is supplied with SAE. I am enclosing a compiled copy for the NATGUG library.

Using the Program.

On loading, the full menu of options will be displayed. The lefthand column gives options for setting up the various font combinations. Note that selecting any of these options A - M causes a reset of the printer (to avoid conflicts of illegal combinations). Options N - U are secondary settings and are not preceded by reset so if you wish to have Empahasised and set to skip the perforation plus line spacing of 8 lines per inch, then first select the font setting otherwise he aforementioned reset will undo the secondary settings.

When any option is selected the wording on the menu returns to normal video therby indicating the choice. Choice A to Initialise the printer will clear this back to reverse video.

Choice V allows you to test the font if you wish. X will exit to CP/M.

The following is an example of the screen display:

```
Version 1.0          -= EPSON PRINTER SETUP =-          SEPT 1986

     A    InitialisePrinter          N    SetHalfLineSpacing
     B    NormalEmphasised           O    SetDoubleLineSpacing
     C    NormalEmphasisedDouble     P    DisablePaper-outSignal
     D    CondensedSingle            Q    SettoSkipoverPerforation
     E    CondensedDouble            R    SetColumnWidthto136Char.
     F    ProportionalEmphasised     S    SetColumnWidthto80Char.
     G    EnlargedEmphasised         T    SetLineSpacingto8Lines/in
     H    EnlargedDouble             U    SetLineSpacingto6Lines/in
     I    EnlargedEmphasisedDouble   V    TestPrint
     J    Elite
     K    NearLetterQuality
     L    ItalicNormal
     M    ItalicEmphasised           X    EXITPROGRAM

                      *** CHOOSE OPTION ***
```

The following is the Turbo Source code:

```
PROGRAM EPSON;
CONST
  CONDENSED =15;
  DOUBLE    =71;
  EMPHASISED=69;
  ENLARGED  =87;
  HALF      =51;
  INITIALISE=64;
  ESCAPE    =27;
  HALFLINE  =18;
  SKIPPERF  =78;
  ELITE     =77;
  SWITCH    = 1;
  NLQ       =120;
  ITALIC    =52;
  PAPEROUT  =56;
  TWOLINE   =72;
  WIDTH     =81;
  COL80     =80;
  COL136    =136;
  EIGHTLINES=48;
  SIXLINES  =50;
  PROPORTIONAL = 112;
  TESTPRINT
='ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz'
  SPACE     ='                                                  ';

TYPE
```

```
   SELECTION = STRING[35];

VAR
  CHOICE,Z  :CHAR;
  IP,NE,NED,CS,CD,PE,EE,ED,EED,EL,LQ,ITN,ITE,SHLS : STRING[37];
  SDLS,DPOS,SSOP,SCW136,SCW80,SLS8,SLS6,TP        : STRING[37];

PROCEDURE LOADVARIABLES;
BEGIN
  IP       :='  A   Initialise Printer              ';
  NE       :='  B   Normal Emphasised               ';
  NED      :='  C   Normal Emphasised Double        ';
  CS       :='  D   Condensed Single                ';
  CD       :='  E   Condensed Double                ';
  PE       :='  F   Proportional Emphasised         ';
  EE       :='  G   Enlarged Emphasised             ';
  ED       :='  H   Enlarged Double                 ';
  EED      :='  I   Enlarged Emphasised Double      ';
  EL       :='  J   Elite                           ';
  LQ       :='  K   Near Letter Quality             ';
  ITN      :='  L   Italic Normal                   ';
  ITE      :='  M   Italic Emphasised               ';
  SHLS     :='N   Set Half Line Spacing             ';
  SDLS     :='O   Set Double Line Spacing           ';
  DPOS     :='P   Disable Paper-out Signal          ';
  SSOP     :='Q   Set to Skip over Perforation      ';
  SCW136   :='R   Set Column Width to 136 Char.     ';
  SCW80    :='S   Set Column Width to 80 Char.      ';
  SLS8     :='T   Set Line Spacing to 8 Lines/in    ';
  SLS6     :='U   Set Line Spacing to 6 Lines/in    ';
  TP       :='V   Test Print                        ';
END; $loadvariables†

PROCEDURE BLANKLINE;
VAR
   X       :INTEGER;
BEGIN
 FOR X:=1 TO 74 DO
  WRITE(' ');
END; $blankline†

PROCEDURE RESETPRINTER;
BEGIN
 WRITE(LST,CHR(ESCAPE),CHR(INITIALISE));
END; $resetprinter†

PROCEDURE SETFONT(LEADIN,CODE,PARAM :INTEGER);
BEGIN
 WRITE(LST,CHR(LEADIN),CHR(CODE),CHR(PARAM))
END; $setfont†
***.cp6

PROCEDURE INVERSE(LETTER :SELECTION;A,B : INTEGER);
BEGIN
  GOTOXY(A,B);
```

```
  WRITE(LETTER);
END; $inverse†


PROCEDURE DISPLAYMENU;
BEGIN
  GOTOXY(3,1);WRITELN('Version 1.0');
  GOTOXY(30,1);WRITELN('-= EPSON PRINTER SETUP =-');
  GOTOXY(70,1);WRITELN('SEPT 1986');
  HIGHVIDEO;
  GOTOXY(4,4);BLANKLINE;
  GOTOXY(4,5);BLANKLINE;
  GOTOXY(4,6);  WRITELN(IP,SHLS);
  GOTOXY(4,7);  WRITELN(NE,SDLS);
  GOTOXY(4,8);  WRITELN(NED,DPOS);
  GOTOXY(4,9);  WRITELN(CS,SSOP);
  GOTOXY(4,10); WRITELN(CD,SCW136);
  GOTOXY(4,11); WRITELN(PE,SCW80);
  GOTOXY(4,12); WRITELN(EE,SLS8);
  GOTOXY(4,13); WRITELN(ED,SLS6);
  GOTOXY(4,14); WRITELN(EED,TP);
  GOTOXY(4,15); WRITELN(EL,SPACE);
  GOTOXY(4,16); WRITELN(LQ,SPACE);
  GOTOXY(4,17); WRITELN(ITN,SPACE);
  GOTOXY(4,18); WRITELN(ITE,'X   EXIT PROGRAM
');
  GOTOXY(4,19); BLANKLINE;
  GOTOXY(4,20); BLANKLINE;
  LOWVIDEO;
  GOTOXY(31,22);WRITE('*** CHOOSE OPTION ***');
END; $displaymenu†

PROCEDURE INTERPRETCHOICE;
BEGIN
  CHOICE:=' ';
  READ(KBD,CHOICE);
  CHOICE:=UPCASE(CHOICE);
  CASE CHOICE OF

  $ choice A-M sets up fonts after reset to clear printer†

 'A' : BEGIN
         RESETPRINTER;
         DISPLAYMENU;
       END;
 'B' : BEGIN
         RESETPRINTER;
         SETFONT(ESCAPE,EMPHASISED,0);
         INVERSE(NE,4,7);
       END;


'C'  : BEGIN
         RESETPRINTER;
         SETFONT(ESCAPE,EMPHASISED,0);
```

```
          SETFONT(ESCAPE,DOUBLE,0);
          INVERSE(NED,4,8);
        END;
'D'   : BEGIN
          RESETPRINTER;
          SETFONT(CONDENSED,0,0);
          INVERSE(CS,4,9);
        END;
'E'   : BEGIN
          RESETPRINTER;
          SETFONT(CONDENSED,0,0);
          SETFONT(ESCAPE,DOUBLE,0);
          INVERSE(CD,4,10);
        END;
'F'   : BEGIN
          RESETPRINTER;
          SETFONT(ESCAPE,PROPORTIONAL,SWITCH);
          SETFONT(ESCAPE,EMPHASISED,0);
          INVERSE(PE,4,11);
        END;
'G'   : BEGIN
          RESETPRINTER;
          SETFONT(ESCAPE,ENLARGED,SWITCH);
          SETFONT(ESCAPE,EMPHASISED,0);
          INVERSE(EE,4,12);
        END;
'H'   : BEGIN
          RESETPRINTER;
          SETFONT(ESCAPE,ENLARGED,SWITCH);
          SETFONT(ESCAPE,DOUBLE,0);
          INVERSE(ED,4,13);
        END;
 'I'  : BEGIN
          RESETPRINTER;
          SETFONT(ESCAPE,ENLARGED,SWITCH);
          SETFONT(ESCAPE,EMPHASISED,0);
          SETFONT(ESCAPE,DOUBLE,0);
          INVERSE(EED,4,14);
        END;
 'J'  : BEGIN
          RESETPRINTER;
          SETFONT(ESCAPE,ELITE,0);
          INVERSE(EL,4,15);
        END;
 'K'  : BEGIN
          RESETPRINTER;
          SETFONT(ESCAPE,NLQ,SWITCH);
          SETFONT(ESCAPE,EMPHASISED,0);
          INVERSE(LQ,4,16);
        END;


 'L'  : BEGIN
          RESETPRINTER;
          SETFONT(ESCAPE,ITALIC,0);
```

```
        INVERSE(ITN,4,17);
      END;
'M' : BEGIN
        RESETPRINTER;
        SETFONT(ESCAPE,ITALIC,0);
        SETFONT(ESCAPE,EMPHASISED,0);
        INVERSE(ITE,4,18);
      END;

$ choices N-V are secondary settings without reset†

'N' : BEGIN
        SETFONT(ESCAPE,HALF,HALFLINE);
        INVERSE(SHLS,41,6);
      END;
'O' : BEGIN
        SETFONT(ESCAPE,HALF,TWOLINE);
        INVERSE(SDLS,41,7);
      END;
'P' : BEGIN
        SETFONT(ESCAPE,PAPEROUT,0);
        INVERSE(DPOS,41,8);
      END;
'Q' : BEGIN
        SETFONT(ESCAPE,SKIPPERF,11);
        INVERSE(SSOP,41,9);
      END;
'R' : BEGIN
        SETFONT(ESCAPE,WIDTH,COL136);
        INVERSE(SCW136,41,10);
      END;
'S' : BEGIN
        SETFONT(ESCAPE,WIDTH,COL80);
        INVERSE(SCW80,41,11);
      END;
'T' : BEGIN
        SETFONT(ESCAPE,EIGHTLINES,0);
        INVERSE(SLS8,41,12);
      END;
'U' : BEGIN
        SETFONT(ESCAPE,SIXLINES,0);
        INVERSE(SLS6,41,13);
      END;
'V' : WRITELN(LST,TESTPRINT);
 END;
END;


$     main program†
BEGIN
 CLRSCR;
 LOADVARIABLES;
 DISPLAYMENU;
 CHOICE:= ' ';
 WHILE NOT (CHOICE = 'X') DO
```

```
 BEGIN
    INTERPRETCHOICE;
 END;
 CLRSCR;
END.
```

No doubt others in the group may be able to improve on the above source code. Indeed, I would welcome suggestions and improvements as I might well learn from them.

Note: Those with Graftrax chips should check the codes set out in the CONST declaration and alter as required.

David Roberts. 6 Plantation Road, Bangor, Co Down.
Telephone 0247-462564 Prestel Mailbox 247462564

READ - DATA Construct for TURBO Pascal

For those of you who have attempted to initialise a mammoth data array in Pascal using Ary[1] :=, Ary[2] :=, ...Ary[32767] :=, only to find that your fingers wear out or the TURBO Editor winges about a full source code buffer before you succeed, here is a simple method which emulates BASIC's READ - DATA construct. Although the method can be used for types BYTE, INTEGER and REAL, it's most useful for BYTE data.

The trick is to place your data in a dummy INLINE procedure. Once you've got it there, you can load it into an array, write it to the screen, or do pretty well whatever you want with it.

The following example uses two interesting TURBO facilities: the ADDR function and the predefined array MEM. The ADDR function returns the absolute address of the first byte of the variable, procedure or function identified by its argument. The predefined array MEM enables you to access any byte in the memory map: for instance, Start := MEM[$100] loads the byte at 100 hex into the variable Start.

```
PROGRAM Example;

VAR
  Address_Pointer : INTEGER;

$ Dummy Procedure to hold data bytes:
  Don't call this one unless you are an intrepid adventurer! †
PROCEDURE Buffer;
BEGIN INLINE
  (1/1/2/3/5/8/13/21/34/55/89/144)
END $ Buffer †;

BEGIN $ Example †
  Address_Pointer := ADDR(Buffer);
  $ Address_Pointer now contains
    the address of the first byte of Buffer †
  CLRSCR;
  WRITELN('Fibonacci Sequence:',©J);
  $ The WHILE loop checks for the occurrence of the RET (END)
    instruction at the end of procedure Buffer †
  WHILE MEM[Address_Pointer] <> $C9 DO BEGIN
    WRITE(MEM[Address_Pointer]:4);
    Address_Pointer := SUCC(Address_Pointer)
  $ Address_Pointer now contains address of next byte of Buffer †
  END $ WHILE †
END $ Example †.
```

Notice the use of the END $ Buffer † statement to mark the end of the data block. Of course, if your data is peppered with C9's, you will have to use some other byte at the end of the block and test for that.

Although the method works well for data type BYTE, its use for INTEGER or REAL data is not recommended because tortuous conversions must take place due to TURBO's method of storing these types. A better method for initialising large Integer or Real arrays would be to write a small program to read the data from the console into the array and write this to a file for later reading into the main program.

Finally, here is a program which uses data stored in a dummy procedure to play a small tune. The playing algorithm is Leo Christopherson's famous "Celeste" routine which I have coded as an INLINE Pascal procedure. Those people who do not use a Model 4/4P, whose squeaker is addressed by port 255, will have to alter the OUT instruction to send the squeak where it must.

```
PROGRAM Tune;

$ Buffer is of type INTEGER and is the address of the Tune Data †
$ Buffer. Tune Data consists of pairs of bytes corresponding to †
$ Duration, Pitch                                               †

$ Duration (Byte 1 of pair) is any Byte value: e.g.4, 8, 16, 32 †

$ Pitch Chart (Byte 2 of pair)                                  †
$                                                               †
$   F       251         D#      141         C#      79          †
$   F#      238         E       133         D       74          †
$   G       225         F       125         D#      70          †
$   G#      211         F#      118         E       66          †
$   A       199         G       111         F       62          †
$   A#      188         G#      105         F#      59          †
$   B       177         A        99         G       55          †
$   C       168         A#       93         G#      52          †
$   C#      158         B        88         A       49          †
$   D       149         C        83         REST    120         †

VAR
  Buffer : INTEGER;

PROCEDURE Notes; $ Dummy Procedure containing Sample Tune Data †
BEGIN INLINE(
12/177/ 12/141/ 12/133/ 11/105/ 1/120/ 12/125/ 12/118/ 12/105/
11/88/ 1/120/ 12/118/ 12/141/ 6/133/ 6/141/ 12/158/ 23/141/
1/120/ 23/238/ 1/120/ 12/177/ 12/141/ 12/133/ 11/105/ 1/120/
12/125/ 12/118/ 12/79/ 11/99/ 1/120/ 12/105/ 12/88/ 6/99/ 6/105/
12/118/ 23/133/ 1/120/ 12/141/ 11/149/ 1/120/ 12/168/ 18/133/
6/120/ 18/125/ 6/120/ 12/118/ 12/99/ 11/83/ 1/120/ 12/111/
12/133/ 6/125/ 6/133/ 18/149/ 6/120/ 18/133/ 6/120/ 11/225/
1/120/ 12/168/ 12/133/ 12/125/ 11/99/ 1/120/ 12/118/ 11/111/
1/120/ 1/88/ 1/83/ 1/79/ 9/74/ 11/93/ 1/120/ 35/83/ 1/120/ 12/93/
24/99/ 23/111/ 1/120/ 32/177/ 16/141/ 16/133/ 16/118/ 16/141/
24/105/ 7/118/ 1/120/ 16/118/ 16/141/ 24/105/ 7/118/ 1/120/
```

```
40/118/ 8/133/ 8/141/ 8/158/ 31/177/ 1/120/ 16/141/ 16/133/
16/118/ 16/141/ 16/105/ 16/93/ 20/88/ 24/79/ 2/70/ 2/125/ 2/70/
2/125/ 2/70/ 2/125/ 2/70/ 2/125/ 2/70/ 2/125/ 2/70/ 2/125/ 2/70/
2/125/ 2/70/ 2/125/ 2/70/ 2/125/ 2/70/ 2/125/ 2/70/ 2/125/ 2/70/
1/125/ 1/120/ 9/79/ 1/120/ 2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/
2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/
2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/
2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118/
2/79/ 2/118/ 2/79/ 2/118/ 2/79/ 2/118)
END $ Notes †;


PROCEDURE Play(Buffer : INTEGER);
BEGIN INLINE(
$2A/Buffer/     $          LD   HL,(Buffer) ; Get address of Buffer †
$F3/            $          DI               ; Disable Interrupts    †
$3E/$C9/        $ START:   LD   A,0C9H      ; End of buffer marker  †
$BE/            $          CP   (HL)        ; Is Tune over?         †
$20/$03/        $          JR   NZ,DOIT     ; Continue if not       †
$FB/            $          EI               ; Enable Interrupts     †
$18/$35/        $          JR   EXIT        ; Find exit             †
$7E/            $ DOIT:    LD   A,(HL)      ; Get Duration          †
$23/            $          INC  HL          ; Move on               †
$56/            $          LD   D,(HL)      ; Get fundamental freq  †
$5E/            $          LD   E,(HL)      ; Put it in E as well   †
$1D/            $          DEC  E           ; Produce beat freq     †
$0E/$0A/        $ COUNT1:  LD   C,0AH       ; These two constitute  †
$06/$FF/        $ COUNT2:  LD   B,0FFH      ; loop timer            †
$15/            $ LOOP:    DEC  D           ; Decr fundamental count†
$20/$0D/        $          JR   NZ,SKIP1    ; Go if not zero        †
$57/            $          LD   D,A         ; Save Duration         †
$3E/$78/        $          LD   A,78H       ; REST byte             †
$BE/            $          CP   (HL)        ; Is it a REST?         †
$28/$05/        $          JR   Z,SKIP2     ; Skip Send if yes      †
$08/            $          EX   AF,AF'      ; Get pulse             †
$D3/$FF/        $          OUT  (0FFH),A    ; Send it               †
$3C/            $          INC  A           ; Toggle it             †
$08/            $          EX   AF,AF'      ; Save it               †
$7A/            $ SKIP2:   LD   A,D         ; Retrieve Duration     †
$56/            $          LD   D,(HL)      ; Retrieve freq         †
$1D/            $ SKIP1:   DEC  E           ; Decr beat count       †
$20/$0E/        $          JR   NZ,SKIP3    ; Go if not zero        †
$5F/            $          LD   E,A         ; Save Duration         †
$3E/$78/        $          LD   A,78H       ; REST byte             †
$BE/            $          CP   (HL)        ; Is it a REST?         †
$28/$05/        $          JR   Z,SKIP4     ; Skip Send if yes      †
$08/            $          EX   AF,AF'      ; Get pulse             †
$D3/$FF/        $          OUT  (0FFH),A    ; Send it               †
$3C/            $          INC  A           ; Toggle it             †
$08/            $          EX   AF,AF'      ; Save it               †
$7B/            $ SKIP4:   LD   A,E         ; Retrieve Duration     †
$5E/            $          LD   E,(HL)      ; Get fundamental freq  †
$1D/            $          DEC  E           ; Make it beat          †
$10/$DD/        $ SKIP3:   DJNZ LOOP        ; Decr timer1, go not 0 †
$0D/            $          DEC  C           ; Decr timer2 count     †
```

```
$20/$D8/      $          JR    NZ,COUNT1    ; Go if not zero          †
$3D/          $          DEC   A            ; Decr Duration           †
$20/$D3/      $          JR    NZ,COUNT2    ; Go if not zero          †
$23/          $          INC   HL           ; Get next note data      †
$18/$C3)      $          JR    START        ; Loop back               †
END $ Play †;$ EXIT:     RET                ; Exit                    †
```

```
BEGIN $ Tune †
  Buffer := ADDR(Notes);
  Play(Buffer)
END.
```

Apologies to Prokofiev.

Michael Collcutt
7, Melrose Gardens
Hammersmith
London W6 7RN

Readers Advertisements

VIDEO GENIE I for sale, includes the following:-

Sound board fitted
Extra Keys fitted for easier entry
Expansion Interface which has the RS 232 and Doubler Board installed
EG 100 12" Monitor
EG 401 Twin Disk Drives
LDOS 5:1:4(a) Operating System
SOLE, enables Double Density Operation
I would be reluctant to separate the above until the computer is sold
Also the following Model I Original Disk Software for Sale:-

MODEM 80 (complete with Genie Driver
System Savers (saves system tapes to disk
Macro-Mon (monitor/debugging tool
LabelMaker
Master Directory
Disk Mailing List
Versafile
PageFile
Also an unused TRSDOS 6:1:1 Disk and Manuals
All the above are complete with manuals

No reasonable offer for the above items will be refused

Please contact:- ..... Gordon Collins,
11, Elizabeth Road,
Sutton Coldfield,
West Midlands.
B73 5AR
Tele:- 021-354 3299 (beware the answer machine).

NATGUG NEWS

Volume 8 Issue 6 December 1986

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 computers but special emphasis is placed on equipment in the TANDY range.

Details of the Group accounts, and the constitution of the Group, are available 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 in the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are available from the Secretary.

For confidentiality reasons, the membership list is not generally available, but members may ask the secretary for a list of members in their area, and mailshots to all members may be arranged.

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor, on disk if at all possible (5.25", NEWDOS-80 v2 or Montezuma Micro CP/M preferred, any combination of density, sides or tracks, but please say what it is). Your disk will be returned.

Newsletter Editor
Geof Smith
17 Homefield Rd.,
Bushey,
Herts WD2 3AP
01-950-6345

Secretary & Newsletter Publisher
Brian Pain
24 Oxford Street,
Stony Stratford,
Bucks. MK11 1JU
0908-564271

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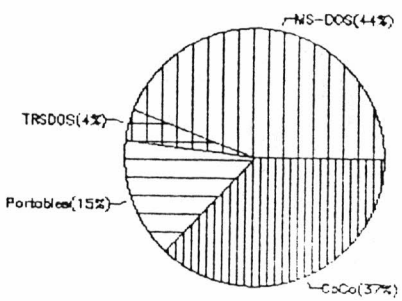
EDITORIAL

I'm writing this editorial in the second week of December, I doubt that this issue will get to you before Christmas but if it does then Happy Christmas to you all, and it doesn't then a Happy New Year will have to do. The reason for the delayed publication is that we've had no contribution's for 6 weeks, it's not easy to produce a magazine if no one has anything to say.

There have been one or two rumour's floating around that Brian Pain is on the point of resigning as publisher and secretary. I've asked Brian about this and he says quite categorically that this is not the case. At the moment he still has a great deal of enthusiasm for the group and intends to stand for re-election at the AGM. While talking to Brian we discussed the results of attempts to attract Amstrad users into the Group. The two adverts placed in Amstrad magazines resulted in three (yes 3) enquiries and no takers. Not a very good return on our not so plentiful funds.

I've included a pie chart taken from 80-micro (redrawn with supercalc-4) which describes Tandy's sales totals by operating system for the first quarter of 1986. As you can see the TRSDOS machines really are in the minority - 4% represents 3,900 machines as opposed to 42,000 MSDOS machines.

TRS Computer Sales (1st Quarter, 1986)



I've also included a press release sent to me from Tandy in mid November, which shows just how hard they are pushing their MDSOS lines. Any new Tandy members that we get are going to be MSDOS people. So as a last resort we've decided to try the other suggestion made at last years AGM, ie. go straight for the MSDOS hacker and place one or two strategic adverts.

If this policy is successful it may mean that we become more of a general computer interest group rather than Tandy specific. If this excites you or upsets you, then write in and let us know and above all come to AGM in the Spring and vote on the issue.

Kermit News. I've found a bug in the CPM 4.03 Kermit which causes it to occasionally remove 1AH bytes from a transferred file. This happens if the 1AH is the very last byte in the internal buffer and you are using DEFAULT file transfer. Since the buffer is 16K you might think the chances of it happening are remote but it's happened twice to me - that's how I found it. Columbia University are aware of the problem and will attempt a fix but for the moment if you know that you are going to transfer binary files then select FILE-MODE BINARY then there will be no problem.

There is a new MSDOS version that employs a sliding window technique that enable ACK' and NAK's to be sent back while packets are being received. I'm rather hazy on the technical details but it apparently speeds up transfer quite significantly. Also I've got a copy of a CPM / MSDOS kermit written in Turbo Pascal, which makes for somewhat easier patching and hacking.

Greg Wonderly, the author of the TRSDOS 6 kermit for Model 4 users has finished his latest upgrade and it is a very powerful version, nearly up to the MSDOS versions in terms of capabilities, ie, being able to act as server etc. He's expressed an interest in converting this version to Model 1/3 systems but requests some aid with finding the appropriate DOS routines to take place of the SVC's used in TRSDOS 6. If anyone is interested in helping then let me know and I will attempt to put you in contact.

Finally in view of the interest being shown in the in Amstrad PC 1512 we have two mini reviews on this beasty. One from our very own Leon and one from a friend of mine who originally produced the short report reproduced here for the benefit of the MRC research laboratories for whom we both work. His evaluation (and it is preliminary) is more directed towards use in that environment rather than as a home micro

STOP PRESS Notes for your Diary.

The next Swindon meeting will 13/14/15 March 1987 at the Wiltshire Hotel, Fleming Way ; 'Phone 0793-28282. Please drop us a line if you would like a particular topic covered, or just a chat about the group and/or workshops.

FASTSORT for the PC.

I have bought this recently and am currently playing with it at college. It's a m/code routine which is called from BASIC, with several parameters passed to the routine. It is fast but not as flexible as CMD"O" and SRTV from INFINITE BASIC.

Brian Pain.

Tandy Press Release

This is a document produced by Tandy Marketing Division and should be read with that fact in mind however it does make quite interesting reading- Ed.

Tandy Announces Price Reductions on IBM Compatibles and Launches Drive to Attract New Dealers with up to 25% Margin on Single Units

With effect from Monday 10th November 1986, the Tandy 1000HD (hard disk) IBM PC-compatible and Tandy 3000 AT-compatible micro-computer systems are reduced by between £300 and £650. Following a fundamental change in marketing policy, the company is also to launch a major campaign to attract new dealers, including national high street stores and specialist computer retailers.

The price changes, specific to the UK and specially negotiated with Tandy/Radio Shack in the United States, are a result of the continued success of the Tandy 1000 series throughout the world. Linked to the drive to attract more dealers, the price cuts are the first step in a consistently aggresive campaign by Tandy to compete with the leading suppliers of IBM compatibles in the UK.

Tandy's previous policy limited dealers to locations not competing with its own stores and did not permit the appointment of companies which would be regarded as competitors. Tandy is now looking for a wide variety of resellers, from small independent retailers to VARs, distributors, systems houses and national high street stores or specialist computer chains.

Tandy is unique amongst other PC compatible suppliers because it owns its distribution, currently consisting of 215 Tandy/Computerworld stores, giving it a strong base for expansion. The company also has a direct sales operation and 150 dealers and has well established systems to supply and distribute merchandise.

Said Ted Russell, director of Tandy Computers: "Certainly, we can now compete directly with the likes of Amstrad, Tandon or Zenith. However, they cannot possibly match what we can offer our dealers in terms of support, product range or margins. Dealers need sensible margins and machines that are available now, from a reputable supplier. We are offering up to 25% on one-offs; our products, including the new low cost IBM compatible Tandy 1000EX, are in the stores and we have all the software and peripherals to go with them - a single source of products from a company that has been successfully selling large quantities of micros since 1978. I don't think anyone else has such a proposition."

He continued: "In the UK, Tandy has often been referred to as 'the sleeping giant', but we are committed to selling micros here. Now that we have a range of products to meet the needs of the customers at both ends of the spectrum, we shall develop the business to maximise our strength and buying power".

Mr Russell concluded by saying: "We know we can retail computers in this country. Computer sales in our stores are contributing more and more to the business and we are, after all, here to make a profit. But we want to move forward more quickly. These announcements are not an isolated step; we will maintain an aggressive marketing stance and put pressure on our competitors".

For further information, please contact Clare Bainbridge, Public Relations Officer, Tandy UK. Tel: 0922 477778 ext 298.

New Prices For Tandy 1000HD and Tandy 3000 Computers
All Products Available Now

Model	Old Price Ex VAT	New Price Ex VAT
Tandy 1000HD IBM PC Compatible (All with MSDOS 2.11, BASIC, 'Deskmate')		
Tandy 1000HD, 256K RAM, 1 x 360K floppy drive, 10Mb h/d, mono monitor.	£1195	£ 895
Same model, colour monitor.	£1395	£1095
Tandy 1000HD, 640K RAM, 1 x 360K floppy drive, 20Mb h/d, mono monitor.	£1695	£1055
Same model, colour monitor	£1895	£1249
Tandy 300 IBM AT Compatible		
Tandy 3000 basic system with 512K RAM, single 1.2Mb drive	DISCONTINUED	
Tandy 3000, 512K RAM, 1 x 1.2 Mb floppy, dual display adaptor, 20Mb hard disk, MSDOS 3.1/3.2 and 'Deskmate' software	£2495	£1995
Colour version of above	£2995	£2375

Please Note:

Tandy 1000EX prices (announced September 1986) are unchanged: 256K, single drive mono system with MS DOS 2.11, BASIC, 'Personal Deskmate', 1 hour's free training with 1 year's hotline support: £499; Colour version is £549.

Tandy 3000HL (80286 IBM XT compatible) prices are also unchanged: 512K single 360K floppy drive unit is £995;
As above with dual display adaptor, 20Mb hard card, MSDOS 3.1 and 'Deskmate' is £1795.

The new computer prices are the major price changes announced with effect from 10.11.86. amongst additional new prices on various peripherals are the following software price reductions:

Microsoft Word	(inc. VAT)	£458	£102.35
PFS: Write	" "	£136	£ 39.95
PFS: File	" "	£102	£ 39.95
PFS: Report	" "	£125	£ 39.95
PFS: Graph	" "	£136	£ 39.95

These products are now added to the range of low cost business and games software available from Tandy.

for further information, contact Clare bainbridge, PR Officer, Tandy UK on 0922 477778.

****** NB ******

The above hardware and software is of course also available from Os House at **BLANDFORD COMPUTERS** (0258) 53737.

****

THE AMSTRAD PC1512 - I

I thought it was about time I jumped on the bandwaggon and got a PC of some description, so I recently lashed out on one of the new Amstrad PC1512s. Not being interested in colour, and hoping to save a bob or two by putting in my own hard disk, I ordered the cheapest mono, single-floppy model from my local Dixons emporium. This is also the easiest model to obtain at present, so I only had to wait about a month before it arrived.

What do I think of it? Since my main interests are software development and word-processing, I haven't any time for GEM and the associated rodent, but as a cheap machine on which to run the masses of good quality software that is available for the IBM PC and clones, it takes some beating. I've been doing a lot of work recently with a genuine IBM PC XT and a Tandon PC (both fitted with hard disks) and I much prefer the Amstrad, although I have yet to fit a hard disk to it. With a full 8086 and 8 MHz clock, the Amstrad is very much faster than the other machines, and I don't really miss the hard disk at present, as I use a RAM disk for all my word-processing and software development.

The Amstrad keyboard, although it feels a bit tacky, seems to suit me much better than those on the IBM and Tandon, and the machine only takes up about half the space on my desk. The only software I have that doesn't work properly on the Amstrad is a comms program supplied by ICL as part of their development package for the One Per Desk. I actually use the Amstrad for software development (editing, cross-compiling and linking) and only use the Tandon for downloading the resultant hex file to the OPD for testing.

Since I needed a bi-directional parallel port with handshaking for some work I'm doing for my own amazement with an Inmos Transputer (more details in the next issue), I invested in a Taiwanese parallel interface card (with two 8255s and an 8253). The parallel ports seem to work OK, but I haven't yet got around to testing the 8253. I might have problems, because the clock on the Amstrad could be bit too fast for it. I only need the parallel ports, anyway, so I won't be upset if the 8253 doesn't work properly. Most hardware for the PC should work in the Amstrad, although since it includes many of the things that are extras on other machines, such as colour, serial and parallel ports, a mouse, etc., you won't need to buy very many additional bits and pieces.

All things considered, I'm quite pleased with the PC1512, and recommend it to any members who want a cheap machine to run PC software.

Leon Heller,
30 Baldslow Road, Hastings, . Sussex, TN34 2EY. (0424) 714790

The Amstrad PC1512 - II

Computing Services have an Amstrad PC1512 under test. There is interest in its possible use as a wordprocessing workstation or terminal replacement. A thorough trial will take some weeks, but we have learned some facts about these machines which will need careful consideration before we can give even a qualified endorsement to them. The machine under test is a 10Mb hard disk, single floppy, monochrome display, 512K version.

The first feature we noticed is the two wire mains lead, lacking the earth connection favoured in the UK. As such, this is not dangerous, we have tested the insulation, and presumably the machines pass the UK requirements for two wire mains operation. However, while there is no metal exposed in normal keyboard work at the machine, the ports at the back for printers and communications do have metal parts accessible. The lack of a connection to earth of this metal was found to interfere with communications (via Kermit) to the DEC 20. Fortunately, there is a convenient place at the back of the monitor for an earth connection, and when we made this modification the communications worked correctly. This modification should only be made by qualified engineers.

The PC1512 is cheaper than the IBM PC equivalent, and is correspondingly less well built, so it is likely to prove less robust than the IBM product. All machines with hard disks in them need to be protected from knocks and jolts, particularly when the disk is spinning, and even more so when the program is reading or writing data to the disk. The Amstrad has its power supply in the display monitor with cables at the back joining it to the system unit. If these cables were accidentally pulled out while the machine were on, a total loss of data from the hard disk is possible.

So far, the PC1512 seems to run all the software we have tried; that is, the packages we normally use. Most observers point out the poorer quality of the screen characters as compared to the more expensive IBM machines, and it is thought that the Amstrad colour monitors have even poorer text. However, some of the staff preferred the Amstrad screen text. The machines run software a bit faster than the original IBM PCs, and have a graphics capability equivalent to the IBM colour card standard (640 Horizontal, 200 Vertical), but with grey levels instead of colour on the monochrome monitor. All software must be tested to see if it will run, for the machine cannot be electronically identical to the IBM PC.

On the hard disk version there is a choice of operating system, DOS PLUS or DOS. DOS PLUS is a version of Digital Research's Concurrent Dos, and runs the impressive GEM Desktop icon-based operating system interface. However, few PC DOS software packages use this, and some will even fail to run under DOS PLUS, so we use the DOS option (F2) which gives the normal PC DOS system.

It needs also to be kept in mind that the PC workstation standard is not static, but must evolve to encompass advances in hardware and software. Early next year a new expanded PC-DOS operating system is expected. Unconfirmed reports suggest that this operating system will allow DOS to break free of the present 640K memory limit which is causing difficulties for the larger software packages. There is also expected to be a facility to run several programs concurrently, but only for one user. To be able to run this new operating system ('CP-DOS'), the workstation must have the correct hardware configuration. This is thought to include an 80286 processor and 1Mb or more of memory and appropriate graphics. The Amstrad machines have the 8086, so are unlikely to be able to run the new DOS. This is not a catastrophe, as PC-DOS will serve well for many years yet, and the new DOS will have a high degree of compatibility with the old in respect of text and data files. There may be an emulation mode under the new DOS to run old DOS programs. New programs will appear to take advantage of the new DOS, and these new programs will mostly not run on old systems, but it is probable that reduced versions for the old DOS will be available.

To summarise, it seems that with careful planning, we can take advantage of a range of mutually compatible workstations of increasing power. Each task can be satisfied with a machine of just the right level of processing power.

A. Telford. CRC Computing Services

Hints and Questions from Ken

Software Suppliers For the TRS-80

I see from the latest flyer from East Sussex that the greatest software supply house in Europe (did you doubt it?) has now decided that there is no future in the TRS-80 and is going to concentrate on MS-DOS. I am not aware of any other sources in the UK or even in Europe who stock a wide variety of software for the old guard but would like to make a recommendation for an American alternative.

I have been purchasing almost all my requirements (apart from Allwrite and fonts for Dotwriter) from DiskCount Data, 2701-C West 15th, Suite 612, Plano, TX 75075. I have always found them to be more than helpful and willing to do a little extra, and their prices are invariably lower than any others advertised in 80-Micro. They do not publish a catalogue but have a two-page spread in 80-Micro every month which should give an idea of the wide range they carry. Payment is no problem as they accept all credit cards, their response is usually prompt and you can expect delivery in 2-3 weeks.

Incidentally, they are now the only source for "The Programmer's Guide to TRSDOS6" by Roy Soltoff, which together with the Technical Reference Manual, is essential reading for serious Model 4 programmers.

Publications for the TRS-80

First the bad news. "Northern Bytes" has ceased publication for lack of support. Even given Jack Dekker's fixation with NewDos 80 and his prejudices towards LDOS and TRSDOS 6, his little journal was packed with interest and many of the programs have subsequently appeared on the public domain disks put out by The alternate Source.

The good news is that Roy Soltoff, author of LDOS/TRSDOS 6, has started a quarterly publication under the title "The Misosys quarterly". The title is obviously derived from the name of his software company Misosys Inc. which has been responsible for so many of the good utilities available for the Model 4, most published with the prefix "PRO-". Misosys has now taken over the retail software business of Logical Systems including all the "LS-" range and including "Little Brother" and "LSDOS". (Note that TRSDOS 6 is sold by Tandy).

The publication is obviously geared towards the company's own products but since the range is so wide it should be of interest to every Model 4 owner. There is the usual correspondence about bugs and quirks and many pages of patchers for a wide variety of programs and background about some of the software. There is advance notification of the release in early 1987 of LDOS 5.3 for the Model III (and presumably Model I). This will include an extension of the directory date to 1999, include time stamping as

well as date stamping of files and unspecified improvements to LBASIC. A full text editor will be included.

At the same time Tandy will be releasing TRSDOS 6.3 (still developed by Logical Systems Inc.) and this will also have an extended date range and time stamping. Some of the missing utilities, (so ably filled by "6 PLUS"), will be included, probably based on LSI's "BEEP" with single-key abbreviations together with a cross reference facility and the ability to invoke SVC's from Basic. Misosys will be providing a full-screen text editor based on "TED", one of the applications offered for "PRO-NTO". Incidentally, the latter has been renamed "PRO-WAM" - Window Applications Manager - to overcome some copyright problems in the US.

There is a lot of dialogue downloaded from the Misosys LDOS/TRSDOS Special Interest Group on Compuserve. It shows how the TRS-80 world could have developed here if there had been more support and encouragement from Tandy. More interesting are examples of public domain software developed for various programs such as PRO-WAM which are now offered on this SIG for all and sundry. There are notes on using Model 4 ports under LDOS and some facts about the Model 4 inverse video which explain the peculiar effects which sometimes appear in this mode. There are hints about the mythical SYS13/SYS, and notes on obscure quirks which may beset anyone applying extended directories. A possible bug with double sided formats under 6.2 is described and a patch provided. A patch is also provided to allow screen dumps to be printed from program control via a new @VDPRT SVC.

AS you can see from these few examples, this quarterly seems like a worthy entry into an almost one-horse competition, particularly for the serious MC programmer, but also for anyone who uses any of the Misosys or LSI packages. Subscription is $35 a year from Misosys Inc., P.O. Box 239, Sterling, VA 22170.

Help Wanted

The following routine is from Northern Bytes and allows a BASIC expression to be INPUT and then evaluates the expression. It in fact does what BBC BASIC does in one command - EVAL. This routine works in Model III mode but I wish to use it under TRSDOS 6. Is there anyone out there who can help to translate this program or provide an alternative??

```
1     'Expression Input Routine by Bill Coulter
      Northern Bytes 5/5:22
2     'Enter any valid BASIC expression via INPUT prompt.
5     US$ = "0123456789"
10    PI = 3.14159265: E = 2.7182818
20    U = VARPTR(US$):U = PEEK(U+1)+256*PEEK(U+2):DEFUSR = U
30    FOR I = U TO U+9:READ U:POKE I,U:NEXT
90    ON ERROR GOTO 2000
100   LINE INPUT "X Value?";U$:X = USR(0)
101   PRINT TAB(10+LEN(U$))CHR$(27)" = "X
110   LINE INPUT "Y Value?";U$:Y = USR(0)
111   PRINT TAB(10+LEN(U$))CHR$(27)"= "Y
120   PRINT STRING$(30,131):GOTO 100
1000  DATA 42,187,74:    'LD     HL,(40A7H)          ;HL=>INBUFF
1010  DATA 205,192,27:   'CALL   1BC0H               ;TOKENISE
1020  DATA 35:           'INC    HL                  ;FIX POINTER
1030  DATA 195,55,35:    'JP     2337H               ;EVAL & RET
2000  PRINT"*** INPUT ERROR - TRY AGAIN ***"
2010  IF ERL = 100 THEN RESUME 100
2020  IF ERL = 110 THEN RESUME 110
```

Ken Arntsen, 52 Midway Drive, Truro, TR1 1NQ.

More Anonymous Thoughts

Congratulations to the editor on the quality of the print (Thank you - Ed). It would be interesting to know how many members does the group have and, if not too difficult, what is the breakdown by models.

At the COMPEC, I have discovered a UK wide maintenance firm which does repair Models III & 4. The firm is Boffin Computer Maintenance Ltd located in, guess where, Milton Keynes - telephone 0908 322688. I wrote to them to enquire about their prices and they said that they are prepared to offer the following terms to our group members only:

a. 48 hrs response covering all parts and labour Models III and 4 £130 and model II £140,

b. collection and return within 4 working days including all part and labour Models III and 4 £100 and Model II £110,

c. if the equipment is delivered at user's cost repair and despatch within 4 working days at fixed cost of £80,

d. equipment sent to Boffin at AD-HOC basis at £20 per hour labour plus parts.

So there it is if anyone is interested.

I was told that, as a result of my articles, there were visitors to System Science. Maybe I can explain the size of the enclosure for HSC16 (Anon doesn't actually say, but I get the impression that it's HUGE - Ed). To start with, 1/3 of the length of the box is taken up by the power supply and the fan. The 8086 gets pretty hot and, if enclosed, it needs the fan. Secondly, the box has place for any further expansions. At present there are only the extra memory, 8087 and clock available but there may be some others in the future. I understand that the makers are now concentrating on the 68000 board for IBM. But the enclosure is not essential. My board rested happily on a piece of paper and fed off the Model 4 power supply for quite a while. It was only when the dropping manuals etc almost landed on the board that I decided to provide it with protection. And what protection it is - solid iron or steel and fairly heavy.

I have been playing with my 16bit Turbo Pascal. There is a very comprehensive installation module but, in spite of that, I could not manage to get the initial letters of the menu in reverse video. In fact what I get is the initial letters in normal video and the rest of the words in reverse. This probably is due to the fact that, in the installation, I have reversed ©N and ©O but, if these control codes are used as they are meant to, the whole screen appears in reverse video. I have tried compilation of some specimen programs and phew - the speed of it. When I recall the ProPascal or RM Cobol (I have still got both but do not use them) I cannot imagine how I could have lived with their compilation.

Also I have tried my hand at a short program which did nothing. Of course I made a typo and, in compilation, there it was the error massage and the message to press <ESC>. Having done so I was back in the editor with the cursor on the error. Error corrected, the compilation re-started automatically. I think that I will be happy with the Turbo Pascal - once I learn more about it and Pascal language.

I have got the Montzuma bundle and WS 3.3 really whizzes along (memory mapped), dBASE 2.43, is installed for Model 4 but not Borland's Pascal 3.0. I had a bit of fun with the Pascal though this was not funny at the time. I tried to run Tinst. Disk started spinning, cursor moved one line down and all froze up. After several tries I came to an obvious conclusion that the disk was corrupted during the transit. Off I went to see my supplier, got the disk re-recorded, came back, tried again and the same thing happened. Only the time gap prevented me from ringing Montezuma and I carried on trying. In desperation I run MOVCPM without any parameters and tried again - and it worked!!! I wonder why.

As if I did not have enough to do I decided to start the communications racket again. I got myself Miracle Technology WS3000 with auto-dial and auto-answer options. This is very neat, small instrument packing really large number of facilities. Whilst still learning about it and getting used to it I cannot say great deal but the specifications look really impressive.

To start with WS3000 is an intelligent modem and it accepts commands from the keyboard. All such commands must begin with AT (in capital letters). It has a battery backed memory which stores the default settings and also last settings configured by the user. The manual lists 31 registers, most of them read/write, and most of them alterable by the user. The registers can be read with ATSn? command and their value can be changed with ATSn=n command.

Apart from being able to set the registers there are also other commands available which can be used to dial the number, drop the line, pick up the line, go into full/half duplex, switch on/off local echo and so on.

The trouble with intelligent 'objects' is though that they think for themselves and never mind the poor user. As you may gather from this remark that WS3000 and I had at times different ideas how it should be set. My slight difficulties originated (how about that?) no doubt in my lack of experience and so sometimes I found myself in an 'answer' mode whilst I wanted to be in 'originate' and I could not set it in half duplex 1200bps both ways.

The settings, which WS3000 can accept, are 300 full duplex, Bell 103 300 full duplex, 600 and 1200 half duplex, 75S/1200R full duplex and 75R/1200S full duplex. In addition the modem is capable of buffered operations if the computer is not capable of split

rates. The buffered options are 75S/1200R, 75R/1200S and Bell 202 1200 half duplex. On beginning the session and after issue of the first AT command the modem senses RS232 setting and configures itself to these settings.

WS3000 has also a store which can hold up to sixty telephone numbers. One can use those to dial from the keyboard. In fact though there is a jack for the telephone on the back of the modem, telephone is not necessary. Plugging the modem into the standard type 431A jack is all that is required. Of course one would not be able to speak but one still would hear the ringing or voice through the internal modem speaker. This cam be left on all the time by using the M command.

The modem sends reports to the VDU. These reports can be either numbers or text. These are OK (command executed), CONNECT (carrier detected), RING (ringing signal detected but modem not set up to answer), NO CARRIER (frequent one and to my mind sometimes unreasonable), ERROR (in command line). Choosing an extended reporting option one can also be told CONNECT 1275 (1200R/75S) or CONNECT 7512 (1200S/75R).

Auto-answer is controlled basically by two registers -S0 and S24. If S0 is greater than 0 then the modem will answer the call on the ring stored in S0 (S0=6 - modem will answer on the sixth ring). The register S1 does the counting. If S24 is set to more than 0 then the modem will go through the values in registers S26 to S30 to analyse the signal and set itself to the speed of the incoming call. Sometime this analysis may lead to an incorrect decision.

Auto-dial is simple in theory. You just type AT D n and the modem will ring and seize the line unless the command was completed with ';' in which case the modem holds the line but returns to the command mode. This puts the modem automatically into an originate mode. The only trouble is that the maximum time which can be set for the modem to detect the carrier is 59 seconds (register S7). I find that 59 seconds is not enough for the relays to operate after dialing and the modem returns into the command mode with ERROR report. Then one does hear the ring through the modem internal speaker (rather faint one) and one has to tell the brute to seize the line. As there are four different commands which cause this (ATA, ATD, ATO and ATH1) one has quite a choice and therein lies the trap - such as choosing ATA which will put the modem into an answer mode.

Now few words about the manual. The manual is actually quite good, well laid out though without an alphabetical index. All commands are described fully, a great deal is said about auto dialing and each register, whether available to the user or not, is also covered though to my mind more could be said about their use to obtain the desired setting. This in fact is only a temporary manual (WS3000 being a new product approved by BT in September). The makers invite comments on the manual. The proper manual will be supplied to the registered users when ready.

Having described the modem now few words about my experiences with my first attempts. At present I have five communication programs - STerm, DFT3, MDM730 and COMM/CMD which comes with Model 4 and a Prestel program from Blandford Computers. By the way of elimination - COMM/CMD made the lights go out on the modem (apart from ON light) and that was that, MDM730 (which is supposed to be customised by Montezume for Model 4) works quite well in chat mode but the file transfer is not on. DFT3 worked with a great difficulty in Chat Mode. STerm performed best of all. I used it to chat to my friend in NI and he even could send a file to me though I could not send one. I also linked to two bulletin boards (using proper RS232 settings) and I got a lot of gibberish. I don't think that I managed to recognise even one character. This however has been cured since and occurred for reasons which will be evident below.

Then there was a panic some months ago - as soon as the RS232 cable was connected to the computer all the lights on the modem were going out and the modem refused to communicate with the computer. I was all for either -

sending computer to Tandy for repair,

buying RS232 and installing it myself,

buying RS232 and getting someone to install it,

buying another computer. (Have done so since)

buying Ferranti PC,

sending back the modem,

which can be summarised by saying that I was at my wits' end. A friend however volunteered help with his Tandy 100 and, guess what, the modem worked perfectly - so it appeared that the problem was in my computer. This same friend arrived with a clever box which permits switching off lines to RS232 and, after switching off the test lines 9,10 and 25 the thing worked perfectly. So the problem was in the cable and in fact, after reading the manual, I discovered a warning about connecting these test lines unless one does know what one is doing (which excludes me) as one may do damage. Obviously the modem was protecting itself against the current from RS232 by switching off - clever beast isn't it?

So do beware - if you should be buying WS3000 you require the following pins:

1	frame ground	
2	transmit data	SD
3	receive data	RD
4	request to send	RS
5	clear to send	CS
6	data set ready	DR
8	carrier detect	CD
20	terminal ready	TR
22	ring indicator	RI
23	data speed	-

If you upgrade to V22 version or V22bis version (1200/1200 and 2400/2400 full duplex) you also require pins:

15	transmit clock	-
17	receive clock	-
24	external transmit clock	-

Since the new cable arrived things returned to normal or better. There is one big puzzle - why the thing worked on 25 pins ribbon cable to start with (though I could hardly ever get a good contact) and then suddenly stopped working altogether? I said that things became better in so far as I get very good contacts now using MDM730. I had a bit of a problem with TUG to start with but this was my fault. I managed to get a contact but rather distorted one and I could not read the starting menu questions (terminal etc) but I managed to get the question whether my terminal requires lines feeds and, like a the dilettante I am, I answered 'No'. Imagine the result - after signing on and giving my password (no it is not ANON) I was receiving everything on one line! Anyway I managed to leave a message with SYSOP who put the things right for me. Did any of you try TUG? It is run for TRS micros. Liverpool TBBS is of course run by Peter Tootill and is very much worth visiting (if you can get in - as the thing is always engaged). Incidently, Peter, I would suggest dBASE II for your data base but it is not exactly cheap - and I don't know whether it could read your ASC files. Blandford board also performs well and BYTE has now their board in UK and you can get (is it getting up- or down- loading?) all the programs published in BYTE and all that. The BYTE programs (all 140 from September 1984 to November 1985) can be got from COMPULINK FIDO (Woking) 04867 6535. SYSOP is Frank Thornley. Speeds supported are 300, 1200 and 2400 (according to Nov 85 BYTE).

Incidentally I am now on Prestel and my MBX number is 474873644. I would be pleased to hear from any Group members.

ANON.

Using CPM's BDOS calls.

This will be a very brief introduction to the idea of CPM's BDOS calls, together with a trivial but none the less quite useful little assembler program employing some of the BDOS calls.

In some ways assembly language programming in the CPM environment is easier than the old Model 1/3, due to the fact that Gary Kildall was experienced enough (or just plain clever) to include the concept of BDOS calls in his operating system and it is part of the reason for the portability of CPM. This idea has also been extensively employed in the LDOS / TRSDOS 6 operating system under the name of supervisor calls, and again in MSDOS as the so called 'interrupt vectors'.

Well, just what are we talking about ? Basically the designers set out a number of functions that they deemed would be necessary / useful for the operation of the machine at the machine code level. They then designed the operating system so that programs could access these functions in a completely standard way through a common interface that hides the machine specific code or BIOS. The functions are such things as reading the keyboard, writing to the screen, disk I/O etc. Thus the programmer knows that if he uses these standard calls, then his programs will run on any machine.

Access to these functions is exceptionally simple. The function number is loaded in register C, any value to be passed ti the function is loaded into DE and then a CALL made to location 5H. If a value is returned, it will be found in A or HL. It is always best to save register contents before doing a BDOS call, since some contents may be destroyed. The list of 36 BDOS functions is given below. The first 12 are NON-Disk, the remainder are disk related functions.

Function	Operation	Value Sent	Value returned
0	System reset		
1	Console Input		A: = ASCII char
2	Console Output	E:= ASCII char	
3	Reader Input		A:= ASCII char
4	Punch Output	E:= ASCII char	
5	List Output	E:= ASCII char	
6	Direct Con IO	E:= FFH for input or char for output	A:= char or status
7	Get IO byte		A:= IO byte value
8	Set IO byte	E:= IO byte value	
9	Print string	DE:=> String Addr.	NB. string ends in $
10	Read Con Buff	DE:=> Buff Addr.	
11	Get Con Stat.		A:= Console status
12	Ret Ver. No.		HL:= Version number
13	Reset disks		
14	Select Disk	E:= selected disk 0=A etc.	
15	Open file	DE:=> FCB Addr.	Directory Code.

```
16   Close File                 ,,                    ,,
17   Search First               ,,                    ,,
18   Search Next                                      ,,
19   Delete File                ,,                    ,,
20   Read Sequ.                 ,,                    ,,
21   Write Sequ.                ,,                    ,,
22   Make File                  ,,                    ,,
23   Rename File                ,,                  ,,
24   Ret. Log Vector                          HL:=> Login Vector
25   Ret Curr. Disk                           A:= Current disk
26   Set DMA Addr.  DE:=> DMA Addr.
27   Get Addr.(Alloc)                         HL:= Alloc Addr.
28   Write Prot Disk
29   Get Read-Only vector                     HL:= vector value
30   Set file atrib DE:=> FCB Addr.           A:= Directory Code.
31   Get Addr DPB                             HL:=> DPB
32   Set/Get User Code   FFH = get
33   Read Random    DE:=> FCB                 A:= Ret code
34   Write Random        ,,                        ,,
35   Comp. File Size     ,,
36   Set Random Rec.
37   Reset Drive    DE:=> Drive vector
40   Write random with zero fill
```

The following program is a very short assembler program, using several of the non-disk BDOS calls, that turns your micro into a typewriter with a 1 line buffer. I find it useful for doing just one or two labels or envelope addresses where I don't want or need to fire up a full blown word-processor. It came originally from an article in Practical Computing, but was so full of bugs it could never have been run. I therefore feel no compunction about reproducing my working version here. (At least I hope it still works !).

```
REBOOT: EQU 0H
BDOS:   EQU 5H
CR:     EQU 0DH
LF:     EQU 0AH
        ORG 0100H
        JP START
        DB CR,LF,LF,
        DB '****** Typewriter version 1.0 ******',CR,LF,LF,'$'
START:  LD SP,STACK
        LD DE,SIGNON
        CALL MESAGEn
;
PRON:   CALL GETCHR      ;Hang around 'til CR pressed
        CP CR
        JR NZ,PRON
REDRAW: LD DE,RULER      ;Print the ruler
        CALL MESAGE
MAINLP: CALL RDCON       ;Call buffered console input
        LD A,(BUFFNC)    ;Get No. chars in buff
        OR A
        JR Z,GOTCR       ;If zero then blank line
```

```
        LD B,A          ;Else put char count in B
        LD HL,BUFF      ;Point to buffer
        LD C,0H         ;Zero counter
OUTPUT: LD A,(HL)       ;Get first char
        INC HL          ;Inc pointer
        INC C           ;and counter
        CP 09H          ;Tab
        CALL Z,TAB      ;Do it
        CALL PRINT      ;Print char     ;Print char
        DJNZ OUTPUT     ;and go for next
GOTCR:  LD A,CR         ;Do a carriage
        CALL PRINT
        LD A,LF         ;Line feed
        CALL PRINT
        LD DE,CRLF      ;Alternative way to do it
        CALL MESAGE
        JR REDRAW       ;Redraw ruler
;
;
GETCHR: PUSH HL         ;Do BDOS console input
        LD C,1
        CALL BDOS
        POP HL
        RET
;
;
PRINT:  LD E,A          ;Do BDOS print a single char
        PUSH HL
        PUSH BC
        LD C,5
        CALL BDOS
        POP BC
        POP HL
        RET
;
;
MESAGE: PUSH HL         ;Do BDOS print a message
        LD C,9          ;ending in $
        CALL BDOS
        POP HL
        RET
;
;
RDCON:  LD C,0AH        ;Do buffered console input
        LD DE,BUFFMX
        CALL BDOS
        RET
;
;
TAB:    PUSH HL         ;Expand tabs assuming set at every 8
        LD A,C          ;Use bit mask
        AND 07H
        LD C,A          ;Calc number spaces
        LD A,8          ;Print to make up to 8
        SUB C
```

```
        LD C,0H
        PUSH BC
        LD B,A
NXTSP:  LD A,' '
        CALL PRINT
        DJNZ NXTSP
ENDTAB: LD A,' '
        POP BC
        POP HL
        RET
SIGNON: DB 1AH,'Typewriter program - switch on printer and press'
        DB' NEW LINE',CR,LF,LF,'$'
CRLF:   DB CR,LF,'$'
NSPACE: DB 0
RULER:  DB CR,LF,'¶---------¶---------¶---------¶---------¶'
        DB '---------¶---------¶---------¶---------¶'
        DB       '1        10        20        30        40'
        DB       '         50        60        70        80'
        DB CR,0BH,0BH,0BH,18H,CR,'$'
BUFFMX: DB 50H          ;BDOS function 0AH requires max length
BUFFNC: DB 0            ;buffer in pos 1 and pos 2 will
BUFF:   DS 50H          ;equal no. chars read
        DS 64H
STACK:  EQU $
        EXEC 0100H
        END
```

Geof Smith

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 computers but special emphasis is placed on equipment in the TANDY range.

Details of the Group accounts, and the constitution of the Group, are available 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 in the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are available from the Secretary.

For confidentiality reasons, the membership list is not generally available, but members may ask the secretary for a list of members in their area, and mailshots to all members may be arranged.

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor, on disk if at all possible (5.25", NEWDOS-80 v2 or Montezuma Micro CP/M preferred, any combination of density, sides or tracks, but please say what it is). Your disk will be returned.

Newsletter Editor
Geof Smith
17 Homefield Rd.,
Bushey,
Herts WD2 3AP
01-950-6345

Secretary & Newsletter Publisher
Brian Pain
24 Oxford Street,
Stony Stratford,
Bucks. MK11 1JU
0908-564271

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EDITORIAL

The phone lines have been a little busier this week than normal, the 2nd PC 1512 review seemed to rattle Leon Heller's cage a little and he rang to say that my colleague who allowed me to reproduce his preliminary report had completely got the wrong end of the stick ! The only point of Leons' that I could agree with was that it was just as easy to accidentally pull the plug on the IBM as on the Amstrad and thus loose hard disk contents. The other points he raised seemed to me to arise from HIS misinterpretation of the article. Anyway I've asked him to write a reply stating his comments.

Also I've received more than one call from members who are concerned that perhaps Brian is wearing too many hats - and that he may be concentrating his efforts on QLUG to the detriment of NATGUG. It was pointed out to me that QLUG have a mention on CEEFAX, we don't, and that QLUG recently had a jolly good plug in PCW's ACC column, and when was the last time we had a mention. Both correspondents were concerned that the group might fold without strong direction and leadership. I would also point out that at no AGM that I've attended, has anyone else stood up to volounteer their services for the role of Secretary, Publisher and General Dogs-body as Brian has done since the groups' inception. I also personally find it irritating that at least 50% of those who are present at a Swindon or MK meeting are much more concerned with ripping off software than playing a part in the future of their group by attending the AGM, surely this is common courtesy to those who do put in unpaid time and effort on their behalf. So if at all possible, please make the effort to get to Swindon and attend the AGM - remember the old adage 'When apathy reigns we ALL get wet!'. Also bear in mind that we will need another volounteer to take over as Editor of the magazine since I will be 'retiring' from the post in April.

Software news.

I recently had to begin to put together some graphics routines for some Turbo PASCAL programs that I've written. My main system is a PC - clone with Hercules graphics and as such the graphics routines in standard Turbo do not allow access to this board only CGA boards. There are some PD routines around that are supposed to allow access but I did not have a great deal of success with these. So I purchased a copy of Borlands Turbo Graphix Toolbox (Grey Matter £39) and my initial impressions are very good (I've had it about two weeks now). It consists of about 10 modules, comprising over 3500 lines of code almost all of which is written in Turbo itself, (the link to the graphics board and some of the more calculation intensive routines such as irregular shape fills are in-line machine code). Since the majority of the routines are in the form of PASCAL procedures, you really can treat it as a toolbox and just use and modify the bits you want. The original programmers believed in long descriptive variable names so there is no problem with identifying what is being referred to.

Not only do you get expected things such as point to point draw, circles squares etc., there is very extensive window support, pie and bar chart generation, polygonial curve plotting, spline and bezier curve fitting, the latter three with the option of automatic axis generation. Procedures are provided to move curves and windows dynamically. With respect to text there are two character sets, one somewhat crude in a 4 x 6 pixel matrix that is used mainly for window labels etc, but may be enlarged and set on any pixel boundary. The other is 9 x 14 for Hercules cards 8 x 8 for most others. This to my eye gives a very attractive font. Routines are also provided to dump the graphics screen to Epson type printers. The main systems supported are IBM CGA and EGA with resolution of 640 x 200, Hercules with a resolution of 720 x 350 and Zenith with a resolution of 640 x 225. A highly recommended package.

For those of you who still prefer BASIC Borland are releasing a Turbo BASIC, compiled of course, with the usual Turbo programming environment. I've not seen it in operation as yet or seen any reviews, but I would bet on it being very pleasant to work with and pretty powerful as well. I don't know if it will be available for 8 bit CPM, but Turbo Modula-2 for CPM-80 has been released in the States, so there is still some degree of support for the old guard. Still on the language scene, I note that MIX who produced the excellent and very competitively priced C compiler for both 8 and 16 bit systems, have just released Ctrace, a windowing debugger for their C-compiler. This sort of aid should make C program development a lot easier, since virtually all debugging had to be done at the assembler level.

I've recently seen two very disturbing reports of so-called anti-piracy software devices. The first is a program that has been slipped into the public domain under the name SUG.ARC or SUG.COM and puports to be a Softguard unprotection device. It invites you to put your ORIGINAL Softguard disk in the drive and then proceeds to destroy the contents of that disk and any other that you have online such as your hard disk! Having done so it displays a message telling you what it has done, that it really has been put out by Softguard Systems Inc. and inviting you to contact their lawyers if you have any complaints - So beware. The second concerns a BIOS speed up chip for PC compatibles by Softpatch Ltd. Apparently if you attempt to alter the LOGO of the firmware this produces a so called delayed worm which some time later will eat up your hard disk. I don't believe this sort of behaviour can be justified and hope someone takes the b..'s to court for all the damages they can get.

Finally many thanks to our new contributor to the mag (Optica) who despite his own fears, put together a very readable article. Please follow suit, take your courage, keyboard or pen in both hands and put something down for the mag. We desperately need contributions to keep going.

Readers Letters.

Allan Fowke
28 Queensway
Sawston
Cambridge
CB2 4DJ

Dear Ed.,

I run a Genie I with a Gnomic DP2000 and a Cumana disk drive. It has internal upgrades, Gnomic 48k and Eric Hartley's RS232. During the three years that I have been running this system I have suffered intermittent disk faults. Essentially I lose sector markings, usually on directory tracks, or on data disks where there is some sector reading and re-writing going on. Once a fault appears the sector concerned will not read or write even with DEBUG.

I have tried cleaning the drives. I have also tried cleaning all the connectors with a fibre glass eraser and smearing them with silicone grease. I suspect that I have an intermittent hardware fault which corrupts the sector label, probably overwriting it with data.

As I know the Gnomic DP2000 is reputed to have an inadequate power supply I have just changed this. The old 18 VA 6-0-6 transformer did drive both the Canon drive and the Gnomic controller board, which includes the double density conversion. I have added a second 6-0-6 18VA transformer and 2A bridge rectifier to supply the +5V and +12V regulators on the control board independently. I have also left the separate 6V winding on the original transformer to supply the -5V zener on the control board.

These changes have not solved the problem. I have just had another failure on a data disk used for repeated changes in a BASIC data base program. This was even left as single density to reduce the risk of disk failure.

If anyone has any ideas which might help, I would appreciate suggestions. Also if anyone has a disk controller set up, Gnomic or expansion Box, for sale I would be interested,

yours sincerly

Allan Fowke.

NATGUG'S FUTURE.

One member has suggested that the running of the group ought to be completely reorganised. If anyone is interested in this subject please give me or Roger Storrs a ring. I decided that there was no point in filling the mag with one person's views etc.

Brian Pain

OGGY OGGY OGGY

Sorry I missed the last issue, 'cos now you'll only get two reminders for Swindon 87! MARCH 13th - 15th it will be and you can book now if you care to ring 0793 28282.

Geof has already described (last issue) some of the highlights of our October meeting at the Wiltshire Hotel, and those who didn't attend missed a fair corker, what with Simul80 lasting well into the Sunday morning, Ariela's lap top Toshiba, Tony Evetts Model 3000 demonstrating CADCAM, (I loved that super high-resolution blowup of a locomotive) to say nothing of Paul Ostwind and Geoff Smith's FONTASY. However I would say the most marvellous sight for me was the fantastic job that Brian Edwards has done for the hi-res model 4, screen-dumping Dotwriter fonts; for me this is far better than FONTASY, well done Brian.

Chris Currie had done some very hard work on an 80-Micro listing to get some excellent Epson printouts and will be demonstrating his map digitising techniques in March. John Newgas turned up with full family reinforcements but gave an unaided talk on Turbo Pascal which was to his usual high standards. John Butcher allowed himself to be pressured into standing in for Colin Ashford (who spoke on Saturday about Comms Standards) and gave a good demonstration of Wordstar commands - well done, John, sorry about the short notice ! With Laurie and Ariela devoting themselves to their specialist subjects, and Tony Evetts covering ZBASIC, Geof Smith on Cardbox, SWINDON 86 was as successful as ever thanks to all who put in such a marvellous effort. However, I would point out that we didn't even drink half of the "refresh" which was provided for Simul-80 !

I DO listen when people talk to me, although they might not always think so ! I did hear the comments - or should I be ungallant and say excuses - about how various members couldn't possibly meet Geof's terribly hard disk format criteria, and so therefore they couldn't make their contibutions to NATGUG after all. Now, PLEASE, read this bit slowly and carefully - Geof will accept contibutions on **ANY** recognisable TRS-80 5.25" disk format if you would be so kind as to give him a clue as to which particular format that you've used. Don't worry too much about ASCII - if you use your usual word processor then that will almost certainly be quite OK, he can edit the commands to suit his own editor. Put a piece of hard card in with the disk, enclose a sticky label with your own address on it, and your disk will be back with you before you even realise that you've lost it ! Any of you who are still not convinced, please look at a copy of Natgug produced before Geof took over; no disrespect at all to Leon, but no-one can make a badly typed or faint copy into a perfect reproduction. Under the editorship of Geof Smith, every article in Natgug can be clearly read, and I reckon that is well worth a little inconvenience to our contributors - so please, think again about contributing, AND DO IT NOW !

David Washford, 6 Houston Way, Frome, BA11 3EU 0373 72739 (before 8.30pm please) or weekdays on 0225 444000 (8.00am - 5.00pm)

Latest Update to TRSDOS 6.2

I have just received the update to TRSDOS 6.2, from LSI - they sent it just about by return - and (of course) it is called LS-DOS 6.3. It ought to be of considerable interest to the Group, and it really is extraordinary good value for $29.95 + carriage.

In some respects it takes over where 'BEEP' left off. There is the same BASIC enhancement package - fast (sector) loading and saving of programmes, six immediate keys (four arrows, comma, full stop), for BASIC lines, A,D,E,L as obvious single letter commands, and four more single letter commands: C,F,M,S.

C for COPY, copies a single line to a specific unused line No.
F for FIND, finds all references to a line, variable or keyword.
M for MOVE, moves a block of lines to a specfic new position, and renumbers them, updating all references.
S for SEARCH, searches and displays reference to a line variable or keyword.

Renumbering can now be done for blocks of lines, instead of the lot, by adding a fourth number. And very useful indeed, there is a new USR11. The syntax is dead simple, e.g.

```
L%=5:J(3)=&H700+L%:J(0)=15:USR11(VARPTR(J(0)))
```

'scroll- protects 5 lines. This makes use of SVC No.15: @VDCTL.

There is a fundamental change - 'user' passwords are no longer used, and the slot taken up by Time-stamping the File in the directory. Date goes on to 1999,and there is an ID command for the specific customer number (I wonder why?). DATECONV converts a pre-6.3 system disc(not for data discs), and DISKCOPY is a single pass format 'n backup. And there is TED a simple ASCII text-editor. I am writing this for fun on TED, not much fun actually*, there is no wrap- around. But it is simple, and very useful for editing JCL files ans suchlike. And there is BREF..... From DOS the syntax is BREF PROG/BAS(Line,P,W=132) or variations of the same. This will send to a print (width=132) all references to to all variables, all references to lines, and if there are any, references to the syntax errors in the BASIC programme. NEWDOS, eat your heart out !!

The documentation, for my money, is excellent. There is a short programme listed to give examples of USR11, which can toggle caps, show the DOS version, and show what, if anything, is in a particular drive, as well as scroll-protect.

This update really makes Model 4 programmes a whole new ball-game. I've cleaned up my variables, found leftovers from earlier versions, tidied up my GOSUBS, and its like taking a spoon to spaghetti instead of using chop-sticks blindfolded. It's nice that LSI are on our side, even if TANDY don't seem to care!

John ARTHUR. 2, Exmoor Street, London, W10 6BD
P.S. Actually I used LESCRIPT. TED isn't for printing.

all exactly the same size or thickness and screw locating holes definitely do not have standard locations. I had difficulty obtaining correctly threaded locating screws and I did come across one 40 track with a non-standard thread. I did not buy it so I did not pursue that anomaly.

Fitting Model 4 drives into a Model 3 is not totally straight forward. The Model 3 is not hardwired and the Model 3 drives have a numbering switch. Model 4 drives can be numbered for the Model 3 by breaking the appropriate tags adjacent to the edge connector. There are four tags numbered 1-4 not 0-3 as one would expect; 1 is right by the keyway of the edge connector. At present I am not sure how to renumber a half height Tandon.

Making 80 track booting disks was a little time consuming. I found that a few of my 80 track system disks would not boot although they had worked fine in the external drives under system (system=2), which I had auto'd on my 40 track booting disk. Certainly once one has made a successful eighty track booter it is advisable to keep one as a master to make new disks from. Converting from 40 tracks all the time is time consuming and it also takes time to make backups of a working disk and then purge the unwanted files. This may seem elementary but I got it wrong to start with and was forced to backup up a fullish disk and then spend many minutes purging. Even PURGE(q=n) takes some time to kill off 100 files. Under LDOS and TRSDOS 6.* I backed sys0 first then the other sys files although I understand that with 6.* this is not essential.

CP/M is I believe more tricky, and the use of CONFIG is critical. The new eighty track booting disk has to be config'ed correctly before one is able to boot it. I believe the sequence is boot on 40 (only choice). Run CONFIG and define any drive but drive 0 as an 80 D/S system drive. (Come to think of it would presumably be possible to do this all in drive 0, by configing A to 0 as 40 S/S and B to 0 as 80 D/S and keep changing disks and switches.) Format a new disk to the new format in the newly configed drive, then sysgen it, use SWEEP or PIP to transfer the transient commands particularly CONFIG.COM. Then log into the drive containing the new disc and rerun CONFIG. Designate Drive 0 as 80 D/S and save config to the new disk; not drive 0. Put the new disk in 0 and reboot. God knows how many times I fiddled with this before it worked. This is all from memory so I hope I have not left anything out.

Databases gave me a lot of trouble to start with. I could not get AIDS to work, undoubtedly my fault, but no way could I get the hang of it. I was told it was good, but each time I tried I soon gave up, I am not a good perseverer. I could not possibly spend hours and hours struggling with no success or like some stay up all night fighting the problem. I do the reverse, go to bed or have a bath and think about it. I do often find the penny drops under these circumstances.

I next looked at Profile which again seemed a possibility until I tried to use it. I objected to using Model 3 mode and soon realised that it could not handle a large database and it was not flexible. Then I discovered dBaseII, now that worked from the very start and within a few minutes I was building and then entering a test database. Success, and then I discovered it was flexible. You can change field sizes and add new fields in seconds and you can change field names in a few minutes. It does of course take a little time to fill the new field. For example I have a list of some 900 births of people born in England and Wales since 1837 with my surname. I suddenly needed to differentiate on sex. Copy the database to TEMP, MODI STRU add the extra one character field ON THE END, Append the data back from TEMP, GO TOP and BROW. The databases cannot tell sex from the christian name, but mostly we can. Half an hour of Typing M & F; job done. If the new field is not on the end you will have extra key strokes to change record. LIST for SEX="M" .and. date<893 .and. date>890, lists all male births between 1890 and 1893 inclusive; CONTROL P puts this out to printer, but do not turn printer off before doing another <C> P.

The order of fields can be changed at any time. The main complaint I would have about DBASE is speed. Indexing and sorting can take forever. I think the collossal new memdisks would alleviate this problem. FIND is very fast, although I feel not always under the two seconds claimed. FIND only works on a file indexed on The relevant field. Some functions are very slow on an indexed file, which is inconvenient when the FIND command is needed. It does seem to me to be curious that FIND will not work on the sorted field of a unindexed file, but that probably just shows my lack of experience.

All of this may be far to elementary to be of much interest to most, but I do hope it will encourage those who know better to put the record straight.

OPTICA - Name and address supplied.

FASTSORT and QUICKBASIC compiler

I have got the FASTSORT working at college in a financial data environment and will be moving onto the compiler next. Leon reckons the latter got a good review in BYTE and I am looking forward to using it. My playing time will be non-existent and the only time available will in compiling a series of modules that accept data, amend, read & write to disk, sort into account no. order, display/print a trial balance and display/print the profit & loss and balance sheet. Again, if anybody wants some impressions on these two programs give me a ring.

Brian Pain.

A Readers Tale

I write the following reluctantly since I have no literary skills whatsoever and I have no particular skills with either hardware or software. I am however very concerned that NATGUG should not die so I feel that I must not ignore the plea for material from the Station Master Himself.

I joined NATGUG at Blandford in August 1984 when I bought a second hand Model 4 from Oz for £775. In the course of that one very hot day I succeeded in totally confusing myself and affected a complete change in the priorities of my life. At that time, I had no idea what a disk operating system was, my experience of computers was limited to Sinclairs and coincidently a Tandy colour computer. The fact that I moved from a colour machine to the Model 4 was in no way significant. My decision to buy the Model 4 has never at any stage given me any cause for regret. Even now, I see absolutely no reason to change the machine. I feel that the extra cost of software completely negates the speed advantage of the newer sixteen bit machines.

I now have a 4P as well, which is fitted with eighty track double sided drives. The original Model 4 now has 3 eighty track D/S drives plus one standard forty track Tandon from the 4P. These two machines epitomise luxury to me, since I have yet to make full advantage of the power and storage which I now have available. Beside the obvious advantage of portability, (I carry the 4P with me in my car wherever I go), two machines means that I can run two different programs simultaneously, - who needs multi-tasking operating systems ?

I "own" 1.43 Lescript which I like, and I have seen 1.66 and 1.68. The former is I think no advantage over 1.43, although I am sure someone will say I am wrong. 1.68 has the ability to be used with double duty which is very useful. 1.43 has the ability to produce a very nice selective directory by file extension, which the 1.6* do NOT have. There is a 1.5 Lescript which I have no knowledge of. The new version is 1.7 which according to the blurb has a new directory display plus the ability to make use of the new megabyte boards and presumably all the features of 1.68. (Anitek are in fact offering the supermem boards for sale.) Lescript files written under 1.68 are not readable with 1.43 unless written in ASCII.

The fitting of eighty track D/S drives to the 4P is reasonably easy. Fitting external drives is not so easy with the pre gate array machines and in any case it reduces portability. When the 4P is the main machine I can see the advantage in having external drives but when it is a second machine I can see no such advantage. It is a good idea to keep one standard 40 track drive for writing, but this is only practical in a machine with more than two drives. For reading purposes switchable 80's are fine in 40 mode. Most eighty track drives would seem to have a smaller power requirement than the standard Tandons, which are somewhat thirsty. John Kilpatrick was, I think, the first to notice his

machine ran much cooler and screen flicker completely disappeared when he fitted his new drives. I am afraid I am not sophisticated enough to notice these finer points.

Drive selection in both models is hard wired, I think that is the right technical term. The new drives will have an internal numbering (selection) switch so the ribbon cable should not have missing pins. To save the expense of new cable and connectors it is only necessary to turn over the ribbon cable so that the earth side which is whole, is used. This weeze can also be used on the desk-top model but here the 34 way end on the disk controller board has a keyway which must be removed for this mild bodge. It is obviously easier if the new switchable drives have face mounted switches, but it is usually possible to fit small toggle switches on the drive fascia. I wanted to use slide switches but this proved impossible. Fitting switches on the outer casing of the machine is a little more difficult in terms of longer wire and general positioning. Mechanically the main task is the drilling of new holes for the locating screws and just generally making sure everything fits neatly.

Fitting four drives inside the desk-top model is more difficult, and so far in my machine only drives 0 & 1 are operational. If switches cannot be fitted on the front face plate of the disk drive, then I think the best place is the main base plate about eight inches behind the on/off switch. Drive 0 & 1 are my old external drives; they have latch doors with no turn handles, they had to be fitted low to allow drive 1 door to rise up fully in the open position. The LED on drive 0 is very low in the aperture. The disc controller board has two edge connectors the top one for drive 0 & 1 the bottom one (external) for 2 & 3. Both pairs of drives must be internally numbered 0 & 1. The ribbon cable for 0 & 1 must therefore come from the internal edge connector over the top of the drive towers and down to the bottom drives. The original cable is probably not long enough and if it is the top connector will not be low enough for drive 1. The cable for drive 2 & 3 must come from the old external edge connector. The best route is probably up the back of the controller board and over the top of the tower. The fact that the ribbon cable has to exit the machine and then be plugged onto the lower edge connector means that unless the controller board is unscrewed the cable must be made up while it is threaded through the bottom plate. Power cables posed a small problem as the drives did not have the sockets all on the same sides. The power cable had to zig-zag down the tower which meant it was not long enough, so we not only had to graft in new plugs but also lengthen the cable.

I was advised by Oz that the use of a 4P Tandon together with three other drives would overtax the power source and cause overheating, due to the excessive demands of the Tandon, so I propose to insert a power switch on this drive. I shall also Zap the drive code table accordingly. I think that like any other task, one must examine the standard fitting, mark parts and note clearances before the initial dissembley. Fascia plates are not

Windows on the Model IV.

(I'm not too sure of the vintage of this correction to a previous article by Peter Knaggs. It resided on a disk that has been shunted around the country and only recently came to light, so apologies to both Peter and those who may have been waiting on this article. - Ed).

I do apologise to all those model 4 owners who typed in my windows program for the Model 4, as they will undoubtedly know, it did not work!. Unfortunately I was not able to test the code until the Swindon workshop, when it was pointed out to me that the code as published in the magazine would not work. My thanks to David Washford and Don Bannister for the loan of a Model 4 and software that allowed my to put the program to rights at about 2.30 Saturday morning. I was booked to talk on it at 10.30 on Saturday!

The problem was in the conversion from Model I over to the Model 4. The Model I does not alter the BC register when you display a character on the screen, unfortunately the Model 4 does. I had forgotten to save the BC counter registers whilst placing a character. The new code is explained below, please note the new code in the D!LOOP and DISP!BL this is the saving of the counter and its recovery. In the talk we modified the code to something more than before, so the demonstration programme in lines 50 to 69 will wait for a key. When a key has been pressed it will display it on the screen (in window 0) By pressing the F1 key you will select window 0, by pressing the F2 key you will select window 1, and the F3 key for window 2. You must press ENTER to exit back to the DOS. I feel that the defining of screen information was not good enough last time, so here it is again.

The screen or window information consists of 7 data values :
1. The top right line of window (number from 0 to 23)
2. column of window (number from 0 to 79)
3. The bottom left line of window (number from 0 to 23)
4. column of window (number from 0 to 79)

5-6 These are a two-byte current storage area (Line,Column)
NOTE: Here line & column number relates to actual screen location.
7. This contains the screen type;
   - 00 - Screen turned OFF
   - 01 - Screen in overwrite mode, when last character position is reached then start at top left and do not erase window
   - 02 - Screen in scroll mode. When last character position is reached then scroll the window up one line and start on the last line again.

I hope that this has helped to solve some of the problems and I am sorry about the mistakes. I've just completed a program that lets Model I LDOS act more like a Model 4 than it ever could before, and so my test capabilities should now be much more accurate !

Peter Knaggs, 12 Seymour road, Chippenham, Wilts, SN15 3HN (0249 654940)

```
1                ; WINDOWS/M4
2                ; Screen windowing Routines
3                ; By : Peter J. Knags
4                ; For the TRS-80 Model IV (4) computer
5                ;
6                ORG 0A000H     ; Some where to put it
7                LOAD $    ; Load it into memory there as well
8                ;
9                ; Equates (SVC Vector calls)
10               @FLAGS: EQU 101; Point IY to system flags
11               @EXIT: EQU 22  ; Exit back to TRSDOS ready
12               @VDCTL:EQU 15  ; Send video control byte
13               @DSP:  EQU 2   ; Display character at cursor
14               @KEY:  EQU 1   ; Wait for key press from *KI
15               @ERROR: EQU 26 ; Post Error message
16               @CLS:  EQU 106 ; Clears the screen (TRSDOS 6.2)
17                    ;
18                    ; Screen data
19                    ; """""""""""""""
20                    ; Data format :-
21               ; Start line,Start Column,End line,End column
22                    ; Current line,Current column,Screen type
23          ; Screen types => 0 Screen off, 1 Screen overwrite
24                              ; 2 Screen scroll
25                    ;
26 A000 00000514 SCREEN0: DB 00,00,05,20,00,00,01;Screen 0
27 A007 133C1750 SCREEN1: DB 19,60,23,80,19,60,02;Screen 1
28 A00E 0A140F3C SCREEN2: DB 10,20,15,60,10,20,01;Screen 2
29 A015 0F000F40 SCREEN3: DB 15,00,15,64,15,22,00;Screen 3
30 A01C 00000000 SCREEN4:DB 00,00,00,00,00,00,00;Screen 4
31                    ;
32 A023 3E16      DOS!EXIT: LD A,@EXIT
33 A025 EF        RST 28H        ; Return to TRSDOS
34                    ;
35 A026 4F        ERROR:     LD C,A    ; Put Error number
36 A027 CBB9      RES 7,C        ; Set Return to DOS flag
37 A029 CBF1      SET 6,C      ; Only disp Error message str
38 A02B 3E1A      LD A,@ERROR
39 A02D EF        RST  28H       ; Log in the errorT
40                    ;
41                    EXEC $           ; Set Execution address
42                    ;
43 A02E 3E6A      CLS:       LD A,@CLS     ; Trsdos 6.2 Only
44 A030 EF        RST 28H        ; Clear the screen
44                    ; Replace with for Trsdos 6.0, 6.1
44                    ; LD C,28
44                    ; LD A,@DSP
44                    ; RST 28H
44                    ; LD C,31
44                    ; LD A,@DSP
44                    ; RST 28H
45                    ;
46 A031 3E02      LD A,@DSP
47 A033 0E0F      LD C,15
```

```
48 A035 EF        RST 28H       ;Turn the Cursor ON
49                  ;
50 A036 DD2100A0 LD IX,SCREEN0; Set initial screen (0)
51 A03A 3E01      EXEC:LD A,@KEY
52 A03C EF        RST 28H       ; Wait for a key
53 A03D FE0D      CP 13         ; Is it ENTER
54 A03F 28E2      JR Z,DOS!EXIT; Yes - Return to TRSDOS
55                  ;
56 A041 FE81      CP 81H        ; Is it F1 key
57 A043 2004      JR NZ,EXE1    ; No - Skip to next test
58 A045 DD2100A0 LD IX,SCREEN0; Yes - Set to screen 0
59                  ;
60 A049 FE82      EXE1:CP 82H   ; Is it F2 key
61 A04B 2004      JR NZ,EXE2    ; No - Skip to next test
62 A04D DD2107A0 LD IX,SCREEN1; Yes - Set to screen 1
63                  ;
64 A051 FE83      EXE2:CP 83H    ; Is it F3 key ?
65 A053 2004      JR NZ,EXE3 ; No - Must be normal key
66 A055 DD210EA0 LD IX,SCREEN2 ;Yes - Set to screen 2
67                  ;
68 A059 CD6FA0    EXE3: CALL DISP!CHR;Display the char typed
69 A05C 18DC      JR EXEC ; Go around until ENTER pressed
70                  ;
71                  ;
72                  ; DISP!STRING
73  ; HL => String to be printed, Ending with X'00' or X'03'
74                  ; IX => Screen Data information
75                  ;
76 A05E DD7E06    DISP!STRING:LD A,(IX+6)  ; Get screen type
77 A061 B7        OR A          ; Is Screen on
78 A062 C8        RET Z          ; No - Return to caller
79 A063 7E        DISP!S: LD A,(HL)     ; Get character
80 A064 23        INC HL    ; Move pointer on
81 A065 B7        OR A     ; Is byte 00, NUL
82 A066 C8        RET Z     ; Yes - Return to caller
83 A067 FE03      CP 3  ; Is byte 03, ETX
84 A069 C8        RET Z ; Yes -Return to caller
85 A06A Cd6FA0    CALL DISP!CHR; No - Display the character
86 A06D 18F4      JR DISP!S     ; Loop back for next character
87                  ;
88                  ;
89                  ;DISP!CHR
90                  ; A  =  Character to be printed
91                  ;IX=> Screen Data information
92                  ; EXIT:
93                  ;      AF', BC', DE', HL'  destroyed
94                  ;
95 A06F D9        D3); Is it over Last column
112 A08C DAAEA0   JP C,DISP!EXIT; No - Exit back to caller
113 A08F DD7E01   LD A,(IX+1)  ; Yes - Get start column
114 A092 DD7705   LD (IX+5),A  ; Reset current column
115                 ;
116 A095 7C       LD A,H        ; Get current line
117 A096 3C       INC A          ; Move it on
118 A097 DD7704   LD (IX+4),A  ; Reset it
```

```
119 A09A 3D       DEC A       ; Take it back
120 A09B DDBE02   CP (IX+2); Is it at last line
121 A09E DAAEA0   JP C,DISP!EXIT; No - Exit back to caller
122 A0A1 DD7E06   LD A,(IX+6)  ; Yes - Get screen type
123 A0A4 FE02     CP 2         ; Is it a scroll screen ?
124 A0A6 2809     JR Z,DISP!SCROLL; Yes - Scroll it then
125 A0A8 DD7E00   LD A,(IX+0)  ; No - Get start line
126 A0AB DD7704   LD (IX+4),A  ; Reset current line
127               ;
128 A0AE 08       DISP!EXIT:EX AF,AF;Get print character back
129 A0AF D9       EXX    ; Retrieve others
130 A0B0 C9       RET      ; Return back to caller
131               ;
132               ;
133               ;
134 A0B1 DD7E00   DISP!SCROLL:LD A,(IX+0)  ; Get start line
135 A0B4 67       LD H,A         ; Set cursor
136 A0B5 7C       DISP!LOOP:LD A,H      ; Get cursor line
137 A0B6 DDBE02   CP (IX+2)      ; Is it at last line ?
138 A0B9 3024     JR NC,DISP!BLANK; Yes - Blank out the line
139               ;  and return to caller
140 A0BB DD7E01   LD A,(IX+1)  ; No - Get start column
141 A0BE 6F       LD L,A         ; Set cursor
142 A0BF DD7E03   LD A,(IX+3)  ; Get End column
143 A0C2 95       SUB L      ; End col - Start col = len
144 A0C3 47       LD B,A  ;Set line length into counter
145               ;
146               ; Copy lines up in window
147 A0C4 24       D!LOOP:INC H     ; Move down to next line
148 A0C5 3E0F     LD A,@VDCTL
149 A0C7 C5       PUSH BC  ; Save counter <<<< ===== *****
150 A0C8 0601     LD B,1   ; Set @VDCTL to get char @ HL
151 A0CA EF       RST 28H        ;Do it
152 A0CB C226A0   JP NZ,ERROR  ; Go if error
153 A0CE 25       DEC H          ; Move back up a line
154 A0CF 0602     LD B,2   ;Set @VDCTL to put char. at HL
155 A0D1 4F       LD C,A         ; Tell it the character
156 A0D2 3E0F     LD A,@VDCTL
157 A0D4 EF       RST 28H        ; Do it
158 A0D5 C226A0   JP NZ,ERROR  ; Go if error
159 A0D8 2C       INC L        ; Move on to next column
160 A0D9 C1       POP BC
                  ; Retrieve counter <<<< ==== *****
161 A0DA 10E8     DJNZ D!LOOP ; Loop back for all of line
162               ;
163 A0DC 24       INC H        ; Move down to next lines
164 A0DD 18D6     JR DISP!LOOP ;Repeat until at last line
165               ;
166               ;
167               ; Blank out the last line
168 A0DF DD7E02   DISP!BLANK:LD   A,(IX+2)  ; Get End line
169 A0E2 67       LD H,A         ; Set cursor line
170 A0E3 DD7E01   LD A,(IX+1)  ; Get Start column
171 A0E6 6F       LD L,A         ; Set cursor column
172 A0E7 DD7E03   LD A,(IX+3)  ; Get End column
```

```
173 A0EA 95       SUB L    ; End column - Start column
                  ;  = Length
174 A0EB 47       LD B,A     ;Set counter to line length
175 A0EC C5       DISP!BL:PUSH BC;Save counter <<<<====*****
176 A0ED 012002   LD BC,0220H  ; Set @VDCTL to place
                  ;                 character
                  ;               and set character to " "
177 A0F0 3E0F     LD A,@VDCTL
178 A0F2 EF       RST 28H          ; Place space at HL
179 A0F3 C226A0   JP NZ,ERROR      ; Go if error
180 A0F6 2C       INC L            ; Move on to next column
181 A0F7 C1       POP BC    ; Retrieve counter <<<< *****
182 A0F8 10F2     DJNZ DISP!BL     ; Repeat for all of line
183 A0FA DD7E01   LD A,(IX+1)   ; Get start column
184 A0FD DD7705   LD (IX+5),A   ; Set current column
185 A100 18AC     JR DISP!EXIT ; Exit back to caller
                END
```

Readers Adverts

Wanted:

A Micro-proof reader compatible with NewScript v 7.1.
A Monitor and Leads. Both to run on a Model 1

Please contact Sherif Omar on Tel. 0284 63013.

Wanted:

I would like to acquire the following back copies of Micro 80:-
1986 November and January
1985 All except December
1984 All
Any copies of Northern Bytes or Misosys Quarterly would also find a good home

Roger Storrs, Oakfield Lodge, Ram Hill, Coalpit Heath, Bristol, BS17 2TY Tel 0454 772920.

For Sale:

Model I - 64K - Lower Case.
Microfirm Expansion Interface, Disk drive.
Epson TX-80 Printer and cable.
Accel Compiler and Original Instructions.
Level II Basic manual
Creator and Manual.
All above £340. Buyer collects.
P. Errington. 106,Lon-y-Celyn, Whitchurch, Cardiff CF4 7BU
Tel. 0222 626150.

For Sale:

Disk Software for Tandy Models 3 and 4.

Programme	Model	Make	Price
Visicalc	4	Tandy	£50
Profile 4 PLus	4	Tandy	£60
Incomplete Records (Accounts System)	3	Tandy	£50
The Trader (Sole Trader Accounts)	3	Tandy	£20
Cash Book (Cash and Bank Records)	3	Tandy	£10
Desktop Plan-80 (Financial Modelling)	3	Tandy	£20
Tandywriter III	3	Tandy	£20
Personnel Manager	3	Tandy	£10
Money Manager (Personal Accounts)	1 and 3	Molimerx	£10
Corplan II (Business Game)	3	Tandy	£15

All as new condition, complete with manuals and original diskettes.
John Boothroyd. 3, Pool End Rd., Tythershire, Macclesfield, Cheshire. SK10 2LB. Tel. 0625-26979 (after 6.30 pm)

For Sale:

Surplus TRS80 Software.

Computer	Description	Disk/Manual
Model 4	4 copies of Disk System Owners manual	
Model 2	Visicalc	Manual only
Model 2	Versafile	Complete
Model 2	Nominal Ledger	Complete
Model 2	Invoicing (Fast)	Disk only
Model 2	Payroll (Fast)	Disk only
Model 2/12	CBASIC	Complete
Model 16	Xenix : Microsoft Basic	Complete
Model 16	Xenix : Nominal Ledger	Complete
Model 16	Xenix : Purchase Ledger	Complete
Model 16	Xenix : Stock Control	Complete
Model 16	Xenix : Payroll	Complete

The above software, obtained as part of a job lot from a Tandy dealer, is available and open to offers, from Robert Hyde and Son Ltd., telephone 0246-73181, contact Kevin Hawes or Laurie Shields.

SWINDON

COMPUTER WEEKEND
FRIDAY TO SUNDAY
MARCH 13-15
AT THE SUPERB 3-STAR
WILTSHIRE HOTEL

Most of you know by now of the Wiltshire's fantastic reputation - large "Systems Room", ample lecture rooms, excellent cuisine, clean, comfortable, and well equipped bedrooms. Well, once again they are making special offers for NATGUG members and their friends, for this special 1987 (agm) meeting. An all-inclusive cost of £64.50 covers single-room accommodation, full dinner on both Friday and Saturday evenings (in the Shelley restaurant), breakfast on Saturday & Sunday, lunches (Sat & Sun) in the pub, and as much coffee as you want all day. It also covers admission to all lectures and the very important Systems room. A reduction of £6.50 per person is available for those sharing a twin room, or if you prefer, B & B terms are available at the standard rate of £30 per person per night.

"Day-trippers" are also very welcome, and a charge of £ Sat £ tba Sun £ tba. per day will cover admission to both lecture rooms and Systems room, together with that liberal supply of coffee referred to above !

Please complete the booking form and send it direct to The Wiltshire Hotel. We look forward to seeing you there !

National Amstrad , Tandy & General Z80 Users Group

Secretary: B. Pain, 24 Oxford Street, Stony Stratford, Bucks Tel 0908 564271

NATGUG NEWS

Volume 8 Issue 8/9 February/March 1987

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 computers but special emphasis is placed on equipment in the TANDY range.

Details of the Group accounts, and the constitution of the Group, are available 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 in the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are available from the Secretary.

For confidentiality reasons, the membership list is not generally available, but members may ask the secretary for a list of members in their area, and mailshots to all members may be arranged.

Back numbers of the Newsletter are available from the Secretary.

Please send all contributions for the Newsletter to the Editor, on disk if at all possible (5.25", NEWDOS-80 v2 or Montezuma Micro CP/M preferred, any combination of density, sides or tracks, but please say what it is). Your disk will be returned.

Newsletter Editor
Geof Smith
17 Homefield Rd.,
Bushey,
Herts WD2 3AP
01-950-6345

Secretary & Newsletter Publisher
Brian Pain
24 Oxford Street,
Stony Stratford,
Bucks. MK11 1JU
0908-564271

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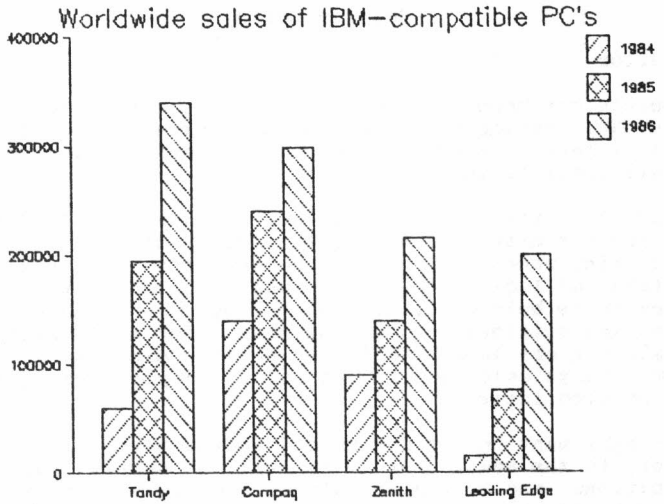
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EDITORIAL

Well I'm sitting here desperately trying to think of something to say for my last Editorial. I must thank my wife for typing in contributions that have come in manuscript form, and also for her patience, since I have devoted one complete weekend in every five to putting the Newsletter together. I must also thank all those who have sent in contributions over the past year, without them this Newsletter could not exist. Perhaps my friends will begin to phone me again now, they had just about given up since everytime they rang I badgered them for an article !

Some of you may not know but as of the 1st January, 1987, Tandy Corporation has "spun off" its international operations to form a new business, "InterTAN Inc". This comprises two main trading companies, InterTAN Canada Ltd which controls operations in the UK, France, Belgium, West Germany, The Netherlands and Canada, and InterTAN Australia. Tandy gives three primary reasons for the creation of InterTAN: Firstly, to enable management to devote more time to the expansion of US operations. Secondly, to enable it to devote more time and resources to meet its objectives of being one of the leaders (!) in the micro-computer business and thirdly to enable the restructuring of European operations to provide localised and individually tailored business plans to improve profitability.

It sounds very impressive but I'm not sure exactly what this will mean to the average Tandy Store in our high streets, except that they (TANDY UK) no longer have big Mama to bail them out if they get into financial trouble. There was a fair amount of criticism in the trade and financial papers last week (mid Feb), of Tandy UK's announcement that they were not going to try to break into the corporate sales market, they thought that they could do well enough from small business and sales to individuals. If you believe the figures from the market research company Dataquest, that Tandy are bandying around (see bar-chart overpage), then they aren't doing to badly with this type of policy. These figure are of course for world wide sales, ie mainly USA. I really can't see them doing that well over here unless they can crack the corporate market.



One of the most interesting items to be introduced in the last month is CIX. This is a British development of BIX, the Byte Information eXchange, a personal computer based conferencing system. Byte has a few choice conference abstracts under the title "Best of BIX" which will give you the flavour of the environment. It is the logical extension of the bulletin board and computer special interest groups rolled into one. The original development is quite old, but the present setup is based on software developed at the University of Guelph in Canada. The basic premise was that trying to organise a meeting where you had to get more than two people in the same room at the same time was wasteful in this computer age. They therefore developed an electronic alternative that removed the spatial and temporal constraints. This software (Cosy), together with a minicomputer, has been purchased and setup by Compulink. Already about twenty conferences have been established, and not all of the topics are directly concerned with computing, but almost all are interesting and often contain useful information. This may at last persuade me to buy a modem. Perhaps CIX will eventually replace the NEWSLETTER.

With that parting thought, it just remains for me to thank you for not being to rude about my editorials over the last 12 months, and to wish my successor good luck. - Geof, ex-Ed.

Readers Letters

Dear Editor,

Here's one member who still reads the NEWS, even if not heard from in '86. Having popped up in your pages in the last 5 years 3 times as a tape user and once as a disk user, I have fallen behind my annual contribution frequency.

One thing that cooled my ardour was the new editorial preference for disk as a medium for contributions. I applaud the way the daisy wheel printout of the newsletter has raised the floor-level of legibility. I am less happy about the way it left no floor space between floor and ceiling, squeezing out variety, contrast and originality of formatting. For me formatting has been half the challenge and fun of writing micro articles. But to get some things said that I want to say, maybe I can get by with a simple printed letter.

First I want to say how much I am indebted, on this far frontier, to the newsletter in general, to several particular contributions, and most particularly and quite independently to Trevor Hutchinson and Derek Traylor. I have acknowledged my debt to them in these pages before, but they have surpassed themselves since. I find it hard to think of comparable cases known to me outside NATGUG of people going so far beyond the call of duty in helping someone otherwise unknown to them. I have a whole volume of correspondence from Derek in which , among other things, he got me across the the threshold of the BASIC programming I have needed to escape the trap of total dependence on applications programs running on obsolete systems. I can count whole days spent by Trevor getting me going with one piece of refractory hardware after another, picked up more or less for a song, and leaving me and my workmates currently running 4 systems, 8 drives, about as many applications, and sundry external devices, all tiding us over until the time is ripe for a technological quantum leap.

Speaking of NATGUG, may I ask what became of the recent reinterpretation of its initials: "Tandy, Amstrad, and General Z80 Users Group" ? Speaking of quantum leaps, may I ask what became of the QL Users Group and of its newsletter, Quanta? Does the QL still have a future ? (In order of asking, Changing the name did not seem to entice Amstrad owners, they all joined the CPM user group, IQLUG and Quanta still exist, and lastly I don't think the QL ever had a future given that awful keyboard and microdrives - Ed)

Could you tell us more about that prize Model 1 program of 1986 (October editorial) and of how one might get hold of it? Anything like that could be a lifebuoy keeping surviving heads above water in the Model 1 owners community. In particular, it would surely prolong my own use of the Model 1 (or dependence thereon, if you want to look at it that way) if I could find some kind of "pop-up" or "deskmate" program running on the Model 1. Molimerx knows of none. (I think I dug the snippet about the

Othello program - if that's what you refer too - out of a 80-Micro, give Microsmiths a ring for details - Ed)

I wrote to Prosoft to know if, having provided the springboard for Fontasy, they can now beef up Dotwriter to do some of the same kinds of extra "desktop publishing" things on the Models 1,3 and 4. I also asked if a beefed-up Dotwriter, having done so much for the print quality of 8-pin printers like that of the Epson MX, could do that much more with 24-pin printers like the Epson LQ (at present it doesn't do that much more). I have no answer as yet, but maybe there is an answer in NATGUG. (I don't know for sure but I'd guess the answer to both your questions will be somewhat negative. The lack of readily available Hi-Res graphics on obsolete machines doesn't strike me as suggestive of huge profits, and the resolution obtained with 8-pin dotmatrix is often just as good as with 24-pin, it's just that they do what they do rather faster with less need to make dot overlap occur with small adjustments of printhead movement. - Ed).

I have had a Model 4 for a couple of years without having yet made much use of its Model 4 features. What is the prospect for a plug-in-and-go 1-meg memory upgrade that will run with Model 1-4 programs like Powerscript, Dotwriter, Visicalc, Sir? Or for a cheaper plug-in-and-go hard disk for the same? If I am to stay much longer with TRSDOS systems, something will have to give in regard to RAM and disk storage limitations. But then maybe I just shouldn't stay much longer with TRSDOS. (See the accompanying letter and article for prospects of 1 MByte upgrades - Ed)

Parig Digan, Dalgan Park, Navan, Ireland.

Dear Ed.,

I use a Tandy 4P. Tandy have without warning withdrawn SUPERSCRIPSIT for the Model 4. I have been able to obtain a copy of the program bu need to have a look at the manual. Could any member loan or sell me a copy of the manual.

Secondly, does any member have a driver to drive Epson printers from within Superscripsit, or can anyone give advice about modifying one of the Tandy drivers

Thank you in anticipation,

Rev. R.S. Wilson. Greenside Vicarage, Ryton, Tyne and Wear
(Tel. 091413 8281)

Dear Ed.,

At the NATGUG SWINDON meeting in March of this 1987 year of The RABBIT we will demonstrate a small Z80 megabyte expansion system comprising :

a) 1 Megabyte RAM (RAM Switched at 32 or 64 K paging)
b) WD1002 Winchester controller interface
c) Battery backed up real time clock
d) Z80 CTC interrupt controller
e) Up to 16 K BOOT ROM (optional).

The system has been designed as a small PCB (5 X 7 inches) to expand any Z80 system running up to 4 MHz. No physical circuit modification is required to the host system as connection between the two systems is established by removing the Z80 in the host machine and inserting a smaller interface PCB having 2 buffered ribbon cables. The PCBs have been manufactured professionally to our design.

We will not test all available Z80 based machines, but we nevertheless expect that the insertion of the interface board will not disturb any of the peripherals currently controlled by a Z80 host system.

Software has been developed to run the board on Tandy Model 1 "look-alikes" under an existing Operating System, namely LDOS 5.1.4. The developed software enables the use of standard Radio-Shack hard-disc driver programs. It also enables the use of a RAM Disk emulating an 80 track double sided and double density disk.

Other patches to LDOS allow the use of a real time clock comparable to that available on the LOBO.

The logic controlling the megabyte ram expansion enables software controllable replacement of all of the Model 1 ROM and unused address spaces with RAM. The switching out of memory mapped devices enables the running of a full 64 K machine. Those familiar with TRSDOS 6 may be able to see analogies with LDOS 5.1.4

The WD1002 interface allows the use of a controller card permitting the addition of up to 3 Winchesters and up to 4 floppy disk drives to the host system.

The expansion board runs on a LNW80 model 1 and is now under test on a Tandy-Model 1. None of the Tandy Model 1/111 software tested so far has been impaired when the expansion board is in use. As the expansion board interfaces at the Z80 level it should be applicable to the Genie Model 1 and Genie GNOMIC expansion, the Lobo and MAX80 and the TANDY Model 1 GNOMIC expansion. Additional software modifications are required for TANDY Models 3 and 4. A previous note by Roy Barber - cf reference below - quotes 19 patches written by Roy Soltoff (the main originator of LDOS/TRSDOS 6) that may be of value in making our board available to the Model 4. Z80 machine designs that are not comparable to the Tandy Model

such as the Amstrad 464, 8256 and 8512, the Einstein-Tatung, the MSX machines, the Sinclair Spectrum, the Spectra-video and the Wren would require more software development. Some designs, such as the ZX81, may need modification of their casing due to its physical proximity to the CPU.

Should there be sufficient demand for this board, then later in the year we will manufacture additional PCBs so making the megabyte expansion system available in a kit-form comprising the main and interface PCBs, construction and software notes, circuit diagrams, instructions and information on the purchase of logic-control and other IC's. Software for running under LDOS 5.1.4 is developed and will also be available. By the Swindon meeting we may have an idea of the price, which will be at a discount for NATGUG members.

In past issues of this News letter Roy Barber reported on a review in 80 Micro of a ramdisk by Alpha Technology that could be run under TRSDOS 6.2 and Derek Trayler reported his experience with a ramdisk kit by Seatronics inc. running under NEWDOS and TRSDOS 6 and specifically aimed at the Model 4. Giving references to some of these reports is not straight forward but the following crib may help:

..... NATGUG Issue						Page	Author
As Printed		Chronological		Date			
Vol	issue	Vol	issue				
7	11	7	11	May	86	15	DT
7	12	7	12	Jun	86	10	RB
7	7	8	1	Jul	86	8	DT
8	8/9	8	2/3	Aug/Sep	86	17	DT

The columns under "As Printed" are produced by an algorithm that may have originated from Geoffrey Smith, and the columns under "Chronological" represent what we believe should have been printed. (The algorithm dictating the printed vol no. has nothing at all to do with me, I have always believed that the publisher used a random number generator to obtain these values - Ed)

Our board is neither American nor Dutch, is not specifically aimed at the Model 4 or any other Z80 design. It is in use on an LNW Model 1, a Tandy Model 1 board is undergoing testing.

Terence Harris and Ian Linehan 01-340-4227

OGGY OGGY OGGY

How awful, writing this in February but knowing that another Swindon meeting will be but a memory by the time that you read it! However, it does illustrate very well the deadline problems that our Editor and our Publisher must cope with - and it should emphasise the fact that YOU should be writing YOUR article NOW !

On that subject, I've just received the CPMSDOSUGUK magazine (January 87) and see that it has 214 pages. Now admittedly it isn't published monthly as has been NATGUG NEWS, it does include around 50 pages listing part of their Public Domain software library, and many of the letters seem to be from the newly-conscripted Amstrad users looking for CP/M software (and worse, Debugger, looking back at the glorious year of 1981, actually refers to a computer known as the Trash-80) - nonetheless it is a remarkable achievement in the Club Newsletter world. Add the fact that it is both typeset and bound and you can see that we still have a long way to go yet. Mind you, they don't publish answers to members' queries either !

80-Micro for February hasn't surfaced at WHS yet, so I have to re-read the January issue. 148 pages and although moving towards MS-DOS, still supporting well the Models I, III, and 4. I do like the Hardin Brothers series, after Laurie got me playing with machine code. Does any other reader see a likeness between Hardin and our dear Leo Knaggs ? Bruce Tonkin, of Creator fame, is writing a series entitled The Art of Programming and in this issue he compares the merits of Basic, Pascal, and C; based on current versions of Basic that is the language that he feels comes out on top. Surprised ? Being a Model 4 (and a I) user myself I have to admit that the MS-DOS material is not of any use to me, and I cannot comment on the quality - or otherwise - of it. I am still finding considerable value in the magazine for both of my machines and so I am pleased to support it.

Right. We are now planning the Autumn Swindon meeting so please communicate with any of the committee, or better still, with Natgug News so that we know what YOU want. Once again, my plea that if you ring me then please do it before 8.30pm !

Finally, another plea. I once had a dozen polystyrene disk mailers - if any have found their way to you then I'd be very grateful for their return. Thanks.

David Washford, 6 Houston Way, BA11 3EU. Tel: 0373 72739

Starting Out with MS-DOS

NATGUG's future seems rather uncertain at the moment, but if we do survive beyond the next AGM it seems inevitable that we will increasingly become an MS-DOS user group. Regular readers may remember that we took the MS-DOS route last summer, with a Tandy 3000. The ensuing months have been stimulating (not always pleasantly so), interesting, and often exasperating. At times it has been rather reminiscent of early Model 1 days, before NEWDOS 80 v 2 and MULTIDOS. DOS has gone through several versions, the latest being 3.2, and programs that run under version 2 often won't work with DOS 3 and vice versa (DOS 1, by all accounts, was primitive in the extreme and best quietly forgotten). Hardware add-ons like graphics cards come in more than one type - and of course software that runs with EGA cards doesn't with Hercules (and vice versa). MS DOS systems do offer a lot of nice things - but first a few warnings -

1. An undocumented 'feature' of MS DOS is that you can delete the entire contents of a directory by simply entering DEL (or ERASE) directoryname. I discovered this when trying to delete a file on the root when I was working in a subdirectory, and my finger slipped on the ®.!

2. Concatenating files with COPY , if there is not enough room on the disk, will lose files.

3. DOS's handling of directories seems a lot less robust than Montezuma's. Cross linking and loss of parts of files happen far too often for my comfort. No wonder there are all those file and directory recovery programs. (* This has not happened to me yet - thank God and Babbage - but I do suspect that Ariela's favourite program dBase II may have something to do with her problems - Ed*)

4. Copy protection is much more prevalent in MS-DOS software, with predictable results. If you have software protected by SOFTGUARD and are tempted to try a program called SUG.COM, it will deliberately destroy your data, including the hard disk directory.

5. If you are upgrading a dBase 2 application and have large files (as we do), be warned that file access becomes very much slower with the MS DOS version.

What does one gain with MS DOS? In a nutshell - much more powerful software and a lot more of it. You get 640K of useable memory, which means programs can be a lot larger (and most are) so they can do a lot more. Overlay files are needed much less often, larger blocks of data can be kept in memory and large ramdisks are possible, all of which speeds things up no end. I did our end-of-year diagnostic lists in a couple of evenings this year, instead of the usual week. You should be warned though that speed gains, at least compared with Montezuma CPM, will probably only be apparent if you have an 8086/80186/80286 based system or a fast option clone. The standard 8088 based pc, running at 4.77

seems rather slower than our 4P for most of the things that we want to do (which of course are not necessarily the things that you would want to do).

You can have complex high-res graphics and bigger and faster spreadsheets and calculation in general can be a lot faster. There is a lot of TSR (Terminate and Stay Resident) software - which means programs that can be used without having to leave whatever other program you are running. Until the (fairly) recent deluge of cheap clones, most IBM type PCs were bought by business and the cost of software was geared to that market. Luckily for the rest of us some machines clearly did go to computer enthusiasts and there is now a huge mass of public domain and shareware software, much more than is available for CPM, let alone for Tandy DOS's. Predictably they vary in quality and I've still not found any directory display or maintainance utilities to touch SD or SWEEP (* I think XTREE knocks spots of SWEEP, but OK it's not PD - Ed *). However, lots are excellent and include word processors, filing systems, ideas processors, communication programs, library utilities, DOS 'front-ends', artificial intelligence and all sorts of specialised applications. To finish, here is a list of just the public domain / shareware utilities on my MS DOS system disk -:

CED	command editor - retrieve and edit previous commands
LF	stop the extra printer line feed
QT	the time (roughly) in words
SEARCH	PATH that recognises OVL files
SETRAM	set up a ramdisk
LIST60H	excellent text file displayer
DBACK	back up directory & FAT tracks
DD	look at two directories at once
F	filter WS characters etc out
FCOMP	compare two files
FM	file modify - like Superzap / Edfile
FREE	free space on disk
FSPOOL	dump printer output to disk file
GLOBAL	execute a command in all directories
KERMIT	File transfer between machines
KEY-FAKE	Store keystrokes for programmes to use
KNEW	automatic backup of unbacked-files
LUX	execute a programme in a library file
MARK/RELEASE	control TSR programmes
NEWKEY	public domain PROKEY
NTREE	directory of all subdirectories / files
PSETTSR	set printer fonts, spacing etc. Memory resident
RAMFREE	How much ram is free
SCROLLK	make the scroll lock key do what it ought to
SD	poor imitation of CPMs SD
SETPRN	talk to the printer from DOS
SQTYPE	type squeezed files
UNERASE	retrieve deleted files
WHEREIS	find a file in any subdirectory.

Ariela Taylor - Northwood, Middlesex.

News from la belle France

DAISYWHEEL 2

Does anyone know anything about adjusting a Daisywheel II printer? Mine had a minor breakdown, necessitating a new bullet assembly, early in its life and when it returned from the Tandy repair shop it printed all the lower case letters at a different height from the upper. After a further visit to a Tandy repair shop, now under two guarantees, it printed just the same. The shop tested it using the self-test feature, which doesn't mix the cases, and so they do not see the problem, even when it has been reported to them. In addition there is Tandy's usual problem of staff who stay long enough to get a grounding and then leave for better prospects elsewhere.

I did not dare touch it at first, but I when I happened upon an old print-out that showed the almost perfect print quality the machine is capable of, I decided to do something myself. I found that the daisywheel carrier was hitting the solenoids, instead of the bump stops provided. Adjusting the former out of the way cured most of the problem. I adjusted things so that the bump stops do the work of stopping the carrier travel, leaving a few thou clearance from the solenoids. However there is another problem that is still not right, that is the evenness of the letters on paper; the lower part, and especially the lower left part, is only lightly printed. The descenders on p, j, g, etc. are almost invisible and the bottoms of most letters are lighter than the upper parts. This gives a mottled and uneven appearance to a page of text.

And recently it has started misprinting a few letters from time to time; the Daisywheel is obviously at half travel, between the top and bottom stops, when the stalk of the Daisywheel hits the paper. The result is that all that is visible is the bottom of one letter above the top of another one. This happens when the printer has been on for some time. It was something that happened also, I found, when the adjustments were wrong. It suggests that the solenoids are perhaps too far from the carrier and so unable to pull it into place. So I am in the position of knowing there is a fault and not seeing where to adjust to put it right. But the print quality, especially on thin paper, reminds me sometimes of an old typewriter that has seen better decades.

FATTER & FASTER

Not having seen mention of them in the journal, I repeat details culled from ads in 80-Micro, of several of the enhancements available for Models I to 100. Seatronics seems to have had all the reporting to date.

A conversion that is very similar to Seatronics' is offered by Alpha Technology Inc, 1902 Highway A1A, Indian Harbour Beach, Florida 32937, USA. You take out the existing memory chips from

your I, III or 4 and replace them with fatter ones, this in 256k increments up to 1 Megabyte max. They offer programs that configure the excess over your normal capacity as a Ramdisk, for TRSDOS 6 or LDOS 5.1. Prices start at $230 for a 256k kit without the memory. They also offer speed-up kits, 5 MHz for the Model 4 costing $70.

For the 4, 4P or 4D there is a microprocessor conversion offered by H. I. Tech Inc, PO Box 25404, Houston, Texas 77265. You replace the Z80 with a HD-64180 from Hitachi and you add memory to a total of 256k. They claim 8 MHz and compatibility with TRSDOS 6, CP/M 2.2 and ZCPR. $300 unless you qualify for the introductory discount of $30. They offer as an option a Ciarcia bus connection.

Not to be left out, the Model 100 also can swell to 256k. 224k expansion costs $575 from PG Design Electronics, 37560 Thirty-one Mile Road, Richmond, MI 48062. 64k is $300. The modules, complete with 6-year life power cell, sit in the expansion port housing. They are configured as 32k banks, and you copy data from bank to bank. Interestingly, the Model 102 8k memory expansion costs $11 against $25 for the 100. Are the 102's chips no longer CMOS?

UP TO DATE

LSI are offering a solution to their mean DOS, which only accepts dates previous to 1.1.88. LS-DOS 6.3 costs $45, including overseas shipping and a surcharge for credit card orders. For that you get a full-screen Basic editor thrown in, plus time stamping on files and other improvements. Logical Systems Inc are at PO Box 55235, Grand Junction, CO 81505. But presumably Tandy will offer it as well. Or will they, if it's called LS-DOS?

LS-DOS 6.2 is also offered for the Models 2 and 12, $53 plus overseas shipping from Misosys.

LDOS is now also being handled by Misosys, who are offering 5.3 in either a Model I or a Model III version, with enhancements similar to LS-DOS.

Misosys has developed and put in the public domain patches for TRDSDOS 6 to enable it to handle 31 memory banks instead of the three standard. This will enable programs to be written that handle 1 Meg without recourse to a Ramdisk. If you send a disk, mailer and US postage to Misosys, (attn ATP), PO Box 239, Sterling, VA 22170-0239 they will send it you free. There is a little gentle warfare going on between Roy Soltoff of Misosys, who developed LDOS and TRSDOS 6, and LSI who own TRSDOS 6. And Roy is not averse to airing the differences.

When I tried a copy of TRSDOS 6.2 on my early Model 4, the directory display was incorrect - some files being shown twice. Will 6.3 show them three times?

All these juicy morsels make the mouth water. But the crunch is the price. A bit more hardware and a new program or two and you've seen the back of $500. For that price you can get a quasi 16 bitter with 640k and an abundance of good programs that cost around $30. Talking of which, remember that there is a public domain program that allows using Tandy printers with MSDOS machines; it filters out the unwanted linefeeds. If you want a copy I can let you have one. Alternatively you can set the Line Feed at half the normal, which has the same effect. Another way is to build a hardware filter which bars the linefeeds.

John Negus, Bessas, 07150 Vallon Pont d'Arc, France.

Evolution of a 1 mByte RAM board

Elsewhere in NATGUG Notes is the description of the present state of development of our Z80 megabyte expansion board and hard-disk interface. This describes the context in which it came about.

The simplest and most truthful reason is that we both wanted to, Ian could and (substituting one noun) we agree with the Water Rat - '...there is nothing, absolutely nothing half so much worth doing as simply messing ... about with microprocessors'. But there is a little more to it than that, such as having either insufficient time or intelligence to keep on keeping up with the "next" machine (let alone this one).

In part the design for this board originated during 1979/81 when we took a 500 Kilobyte program suite, previously running overlaid into the 120 Kilobyte partition on an IBM 360 and three IBM 370 data-bureaux, and re-programmed it to run on an in-house 32 Kilobyte Plessey "PDP 11 look-alike" (with an improvement in turnaround). At the same time we were interested in a Video-Genie-like Z80 design by a British company and in which we saw great possibilities for a teaching system based on "PILOT". Unfortunately the company and it's design were short-lived.

In 1983/6 the "PDP" processor-bound suite was transferred (and extended by our friend and colleague Jennifer A. Chambers) to run on a Tandy Model 1 at 1.77 Mhz with only about a 60% increase in running time. The Model 1 had (has) three 720 Kbyte floppy disk drives while the PDP-11 had four 2.5 megabyte fixed and top-loading exchangeable discs and a much faster data-bus. The running-time on the Tandy improved, although that was not a requirement, when we extended it's backing storage to a Winchester.

Over the period 1983/5 a 100 megabyte data-base was moved from the data bureaux, by then become IBM 370 - 380 / Amdahl / CDC Cyber, onto our Z80 Model 1 hybrid systems whose major circuit change was the replacement of Tandy PSUs with one Switch-Mode PSU providing power for the machine, CRT and all drives. The $45,000 PDP-11 system was junked in September 1986, but the Model 1 hybrids remain.

The in-house minicomputer gave an annual saving (measurable in man-months) from time spent in keeping abreast of the edicts of mainframe Computer Bureaux Systems Oligarchs as they continually imposed changes to THEIR systems (whether institutional or commercial) on which their representative committee concurred. At that time a main-frame user could only hope for the smallest influence on any system change and that only on becoming an institutional politician: the parish councils had been replaced by Metropolitan Boroughs so-to-speak.

The PDP-11 also saved on slow turn-round, slow terminal response, access to archival tapes, waiting for inhibited processing quotas to become live, maximising processing

allocations and re-running lost jobs. The PDP-11 did generate other overheads which came from acting as computer-operator, -manager, and storesman but these overheads were smaller, instructive and immediately useful. The advantages that microprocessors offer over our mini-computer processing were clear by 1982. Microprocessors give large savings in the cost of hardware, annual maintenance, consumables and space, flexibility in access to key-boards, processing and development together with parallel processing and the ability to have in-house (even in our own houses) back-up. If they require taking on some of one's own machine maintenance this can be offset against more pleasure in, and control of, the job. Given this context, how splendid was the 6502, we thought, and how greatly superior the Z80.

And how naive. By 1983 the inexorable march of "progress" infected micro-processor CPU design. In rapid succession the Tandy models 1, 3 and 4, let alone the 2, 12 and 16, became antiquated - at least in the eyes of 'the professionals' - as will their successors. CPUs spread and mutate like viruses (nowadays you may prefer spring flowers as a simile): 8 bits are giving way to 16 or 32 (but see note *), the "now you see it now you don't" Z8000... , the 68008, the 8086, then the 80286 even now supplanted by the 80386 etc. No all hardware developments have merit - For example, some prefer reading a 64 x 16 video display easily and without spectacles to squinting at a 80 x 20 display.

Nor is the situation better in software: it seems that CP/M and the MS DOSes have intrinsic incompatibilities between editions and/or between data-formats whilst lacking facilities long available on LDOS or NEWDOS. The scintillation of GEM has moved between Intel and Zilog, but not all of us want GEM. Word-processing packages, line-editors, assemblers and compilers reappear as software houses "paint the lilly", but often as costly water-colours of earlier familiar software: Scripsit retains some advantages over Locoscript and Word-star. We did not see time spent in keeping up with these "improvements" as time well-spent.

The greater part of the stimulus for our board came as we saw that the advent of microprocessors might only divert time previously spent keeping up with unwelcome requirements of main-frame administration into overcoming unwanted facilities of new microprocessor CPU designs. Our prime need was not for new CPU design but for more RAM, some system ROM and a built-in hard-disc interface on our chosen CPU system leaving us with continuity to develop, expand and use our own software within a good and well-documented operating system over which we have some control. We did not want to be compelled into an uncontrollable vortex of "it must be better because it's new" machines costing our time and money but whose only measurable advantage was tabulation in "Which Computer ?" or a Design Council award.

In our spare time during 1984/5 we, in particular Ian in collaboration with Gerald Catling, set about writing patches to LDOS 5.1.4 for, and designing a 64K ram Z80 based machine intended to have more i/o, video and keyboard facilities than the BBC micro

but which would run much of the Tandy Model 1 software. Production became too expensive as manufacturers prices decreased over that time. During 1985 the interfaces to hard-disc and parallel input from Pericom standard document readers, which were parts of the design, were built by Ian and put into use on several of our Model 1s; they remain in operation.

We decided to incorporate the hard-disc logic and other features into a board allowing a megabyte of bank-switched RAM which we hope will let us carry on with tasks that we find worth-while whilst continuing to use software we know well. If too many of our micros become irreparable we expect to be able to move our expansion board, operating system with revised patches and software to another Z80 based hardware design. We can put more of our man-months to good use and leave NEW chips to manufacturers, to those whose specialised requirements really gain advantage from them, to those starting now and to journalists. When and if we want to move software and data to a system based on another CPU, then we will do it because WE want to. After all, in the meantime it may be of more interest to try and integrate transputers into our own hybrids so that we can explore OCCAM-like languages on our own problems.

But as well as saving time, even though our program suites would possibly run on IBM "look alikes" at around twice the speed on our hybrids, we happen to possess several Tandy Model 1s and their "look-alikes". A few sparrows in the hand are better than an infinity of peacocks in the bush - and much cheaper.

Terence Harris and Ian Linehan

* Note: At the time of writing the Apple IIs provide the major part of machine sales income for Apple Corp whilst sales of the Amstrad PCW have not been reduced by purchases of the PC - separate Reports in The Times, 1987.

Reading the Model 4 Screen

I have an accounting program which is used for several different clients. That is to say, each client has his own version of the base program, tailored in minor ways to suit his own needs. Since they are used in one office it is essential to see that a lay operator cannot muddle one program with another, as, for example, by using a data disk for one client with the program for another. With Models I and III this was no problem, as it was easy to look at the screen and read the disk name, but with the Model 4 it is a bit different.

The solution appeared, however in the May 1986 issue 80-Micro, page 60. There Roberto Refinetti demonstrated how to peek and poke the Model 4 screen.

The original version involves a machine code subroutine which is put into memory and called when required. My version, which I only use to identify disks, is created as needed and then thrown away.

The routine is as follows:-

```
10 ASS$=CHR$(126)+CHR$(103)+CHR$(26)+CHR$(111)+CHR$(62)
   +CHR$(15)+CHR$(6)+CHR$(1)+CHR$(239)+CHR$(33)+CHR$(32)
   +CHR$(32)+CHR$(119)+CHR$(201)
20 A=VARPTR(ASS$)+1:A=PEEK(A)+PEEK(A+1)*256:CHAR%=1:
   A2=VARPTR(CHAR%):IF A2<0 THEN A2=A2+65536
30 B2%=INT(A2/256):B1%=INT((A2/256-B2%)*256)
40 POKE A+10,B1%:POKE A+11,B2%:PEAK=A:A=0:B%=0:A2%=0:B1%=0
   B2%=0:I=0:REM The routine is set up, now DO IT
50 CLS:DIR$="DIR Z:"+RIGHT$(STR$(DR,1)):SYSTEM"DIR$"
60 A$="":X%=0:FOR Y%=10 TO 17:CALL PEAK(X%,Y%)
70 A$=A$+CHR$(CHAR%):NEXT:RETURN
```

Operation is quite simple. Set DR to the drive number you wish to check, and call the subroutine. It will set up the machine code routine, call the directory of the disk to be tested, and return with the first 8 characters of the disk name in A$. This is then compared, using INSTR, with the required diskname, and if wrong and error message is displayed on the screen with instructions to change the disk. The new disk is then interrogated in the same way.

The instruction "DIR Z:" is used because I have no files starting with Z on any of the disks involved, so of course only the heading of the directory is displayed. It is of course essential to CLS first, so that the heading appears on the top line of the screen

M.C. Matthews, 5a, West Walks, Dorchester, Dorset.

NATGUG NEWS

Volume 8, Issue 10.

April 1987

OFFICIAL JOURNAL OF THE

National Amstrad, Tandy & General User Group

INFORMATION ON THE GROUP

Membership of the group is by subscription to the Newsletter which is published at regular intervals - application forms are available from the Secretary. Membership of the group is open to anyone with an interest in computers but special emphasis is placed on equipment within the Amstrad, Tandy, and MS-DOS range.

Details of the group's accounts and constitution are available from the Treasurer - please ensure that your requests are accompanied by a S.A.E.

Members requiring assistance with problems related to the machines specified should contact the P.R. Officer who will endeavour to put them in touch with possible advisers.

Sub-groups exist in many areas and their Secretaries are invited to forward details to our Editor/Publisher for inclusion in the magazine. The back page is being reserved for this purpose.

Public domain software libraries are maintained, in four separate collections: Model I, Model 4, CP/M and MS-DOS. Names of the appropriate librarians are available from the Secretary. (also see Vol 8, Is. 10)

Back numbers of the magazine, in 6-month volumes, are available at the price indicated on the application forms.

The group has no paid Officers or employees, and the issue of the magazine depends on contributions from Members, who are also invited to submit responses to questions raised in the previous issues. To allow legible print, we prefer contributions to be submitted on 5.25" disk, direct to the Editor - ASCII files are perfectly acceptable but please indicate the disk format used (SS,DS,SD,DD, track count, DOS etc). Your disk will be returned (if you enclose an addressed label) normally within 7 days. The Editor will accept written or typed articles where members insist - publishing will depend on readability .

Newsletter Editor/Publisher

Gordon Collins,
11 Elizabeth Road,
Sutton Coldfield,
West Midlands,
B73 5AR. 021-354 3299

Secretary

David Washford,
6 Houston Way,
Frome,
BA11 3EU
(0373) 72739

P.R. Officer

John Kilpatrick,
3A Gainsborough Street,
Sudbury,
Suffolk,
CO10 6ET
(0787) 79504

Treasurer

Roger Storrs,
Oakfield Lodge,
Ram Hill,
Coalpit Heath,
Bristol. BS17 2TY
(0454) 772920

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EDITORIAL

So NATGUG has had its 1987 A.G.M. and there is another name under the title of Editor. As you will see from the inside front cover my name is Gordon Collins, I live in West Midlands. I have been a member of NATGUG for about three years. I use a TRS-80 Model IV with 128K of memory and 80/40 track switchable drives.

At the A.G.M., Leon was again elected as Chairman, the other changes being as follows:- Secretary, David Washford; (I somehow think that 'Secretary's Report', is going to sound mundane after 'Oggy, Oggy, Oggy') Public Relations Officer, John Kilpatrick; and Roger Storrs, as Treasurer. John's title as P.R. Officer also includes helping to direct people to where they may obtain the information that they require. There are plans within the new committee, which we will be informing the membership about in due course.

Before going any further, I would like to put into print my thanks to both Brian Pain and Geof Smith for all the work that they have performed for NATGUG in the past, with the hope that there is still more to come. There has been many excellent comments about the layout of the newsletter during Geof's Editorship. (I hope that I can keep the standard up). It was acknowledge at the A.G.M. that no slight whatsoever was being directed towards Leon whilst he was editor, circumstances dictated that that was how the newsletter had to be edited.

NOW TO SWITCH TO CAPITAL LETTERS TO ANSWER THE PERSON AT THE BACK WHO PUT THEIR HAND UP. I SHOULD, WITH THE UTILITIES I HAVE, BE ABLE TO READ ALL TYPES OF DISKS, DOS's, ETC., INCLUDING CP/M AND PC-DOS. I would wish no one to have a reason for not writing into the newsletter. NO ARTICLES, NO NEWSLETTER. I am Editor of the Newsletter, not a creator of articles, it is the membership who submits the items for me to edit into the Newsletter. My title also includes that of Publisher, it is hoped that this will help to get a more speedy turn round of the Newsletter. I aim to send the copy of the Newsletter to the printers during the last weekend of the month, hopefully the Newsletter will then be sent out during the first weekend of the month.

I am only a 'recent' recruit to the computing community, so I still have a lot of learning to do, but I do hope that we can all learn something together. I will welcome any article in whatever format, with the reservation that I may have difficulty reading tapes - but lets give it a try. I know from recent contacts, that there are a great number of Model I users out there, who have told me that they feel 'out in the wilderness'. I promise you, that was me four years ago - I then used a Video Genie (I'm not much further on now). If you do have a query, write to me. At your request, I will be very happy to publish your article anonymously. I have heard rumours that some members feel unable to write in because they do not have disk drives or a printer. Please, please, please send the item to me, written in long hand if necessary, I will type it into the Newsletter.

Because of the multiplicity of DOS's and disk formats, I would ask that you give me some idea of the DOS and disk format when sending in disks, also the title of the file that I should be looking for. I will copy over that file to my disk and send your disk back by return, if an addressed label is included. Return postage will be paid for by NATGUG. Now having said all that, is there still a reason for anybody not submitting an article to the Newsletter? Please let your Editor know.

I have just looked at Geof's first editorial, that ran into two full pages. It is now the 21st March, I have no articles for the Newsletter, except for three members adverts, so it may be that I will have to fill a newsletter myself. Geof reported in his first paragraph that he had heard from a member who was not going to renew his membership. Today I heard from a member to say he would give it a further try, I do hope he stays, including the other few who were feeling a bit desperate.

By the time you receive this you should have received another Newsletter, which at this moment is at the printers produced under Geof's editorship.

One item of change that was proposed and passed at the A.G.M. is that the membership subscription will be an annual one, payable BY, (not on or after) the 1st of January each year. This, because a number of members have commented that they have difficulty remembering when

their subscriptions are due. Any extra donation will be gladly received by the Treasurer at any time. It is in the hands of your committee to determine the amount payable for membership, which at the moment is £12.00, we see no reason for any increase. (Did I not hear anybody give a cheer ?). Included with this is a decision to start 1988 with Volume 10, Issue 1. Therefore Volume 9 will only have 6 issues.

Can I now take a moment to update some items which appeared in previous Newsletters. Some of you will realize that these are for an item submitted by Ken Arntsen, I have spoken to Ken, and now realize why they, seemed out of context when I read them, I can assure all readers that this was not Ken's fault.

"Northern Bytes" is now being published by Charley Butler. I recommend this magazine to all TRS-80 users. The easiest way to subscribe, is to write to:- The Alternate Source Information Outlet, 704 North Pennsylvania Avenue, Lansing, Michigan. 48906-5319. Giving your Mastercard (Access) or Visa Card (Barclaycard) number and expiry date. "Northern Bytes" is sent out on an irregular basis (when they have filled enough pages, the last issue had 48 close typed A4 pages), and is packed with information. They do operate a To-Be-Invoiced policy for those not having charge cards. Price is $4.00 + about $2.00 air-mail postage each issue (about £4.00), your charge card is only debited when they send out an issue.

Along with Ken, I can also recommend "The Misosys Quarterly". To receive this publication, again using a chargecard is the easiest, write to:- Misosys, Inc. PO Box 239, Sterling, VA 22170-0238. Annual Subscriptions, to include postage to the U.K. is $35.00 (now about £22.00) for 4 issues. The first two issues both had 100 pages. They have a "significant" product offer in each issue available only to subscribers, which should cover the cost of subscribing.

Both LS-DOS 6:3 and LDOS 5:3 has been released. LS-DOS 6:3 is already at version "J". Roy Soltoff of Misosys, has stated that he would only release LDOS 5:3 for the Model I, when he has 1000 orders for that version. (For more on this see, "The Misosys Quarterly", Vol. 1, Issue iii). Also released is an LDOS 5:3 Model IV Software Interface Kit. Simply put, this is for a Model IV in Model III mode

and includes a driver to enable all the keys, a CMD utility to switch away from the Model III ROM to a Model III RAM (but with no cassette function) and includes a RAM disk for a 128K machine.

To answer a question that I have seen in the Newsletter, we now have about 180 members. How about each one of us recruiting at least one more member this year? (See enclosed membership forms)

For those who were trying to tell me a long time ago that the Model IV was dead, it is reported that Tandy sold about 10,000 Model IV's last year. (Oz only got half of that commission as best sales agent for the year). Thanks for taking time to read this, best regards, Ed.

Press Release from Tandy:- "Tandy says that recent figures confirm the company's claim to be the leading manufacturer of compatible micros in the US. Said Ted Russell, director of Tandy Computer Division in the UK: "Were glad to be able to prove to the world just how strong we are in the PC Market. We have the sales volume to influence the way the PC market develops."

Sec's Notes
(nee ? Oggy, Oggy, Oggy)

First the apologies. In the rush to mail out the February/March Newsletter replies to some Members' queries were hastily scribbled on odd scraps of paper - unprofessional but, in the circumstances, effective! Well, we can only get better!

Several Members have asked about backnumbers - copies of all are available and are detailed on the enclosed subscription forms. There were also several requests for an index to our past issues - has anyone maintained an up to date listing that could be made available? I'm sure that someone has, and we look forward to hearing from you.

Paid-up membership has sunk to an all time low, but if the enthusiasm of your new Committee counts for anything, then NATGUG will soon be restored to its former glory. They can't do it all alone though, and that is why you have TWO registration forms - one for yourself, and one for you to personally recruit a new member with. Membership is spread across many machine types now, with several Amstrad 1512's making their presence known, together with many other MS-DOS types. The Model I's are still very strong (I use one myself every day) and the variations on the Model 4 theme seem endless - hi-res, hard disk, 256k memory, etc. Model III's are surprisingly few especially compared to that pioneering Model I - are we getting through to the new owner of these second-hand machines? Adverts, at a fantastically high cost, have been placed in the computer press but now we want to try the most effective form of advertising known - it is called word-of-mouth, and it relies on YOU telling your contacts about NATGUG (and getting these forms filled in!).

The club did once have most of the freshly-sought member information, but with the advent of the Data Protection Act the database was unfortunately erased. We now know that the Act is not overly concerned with Club records, and we are anxious to restore our database for the benefit of all Members. (We have registered for the purposes of the D.P.Act).

I did refer above to "paid-up" members. In our affluent past, a few Complimentary issues of NATGUG News were distributed. (Since membership of NATGUG is by subscription to the magazine, then by definition the recipients of these complimentary issues cannot be regarded as members). This issue of the magazine includes the very last of those freebies and if you were one of the lucky few then may we invite you to now take out a subscription? Just for the record, ALL the committee members have paid the standard subscription.

Before I forget, please take a pen and change the issue reference on the last magazine from Volume 8 Issue 2/3 to Volume 8 Issue 8/9 - that's something else that we'll get right in future!

If we issue a disclaimer of responsibility for any inaccuracies contained within Members letters/articles, will that encourage any more contributions? Anyway, the disclaimer is hereby issued!

The back cover of the magazine is being reserved for FREE advertising of local groups & national meetings etc., so please send your details to Gordon for inclusion in the next issue.

Bulletin Boards. Do YOU want to access a NATGUG bulletin board? Would you rather use Prestel or the Blandford Board? What would you use it for? More importantly, will you please write in with your own answers to these questions? (to the Secretary please, **Ed). The Group does have equipment, but in single density mode; we need to know Members requirements to establish whether or not we invest in re-furbishing this old asset, currently nurtured by Mac Randle. Incidentally, Mac wants to know if anyone out there ever got Dotwriter up and running on a Lineprinter VIII - ring him on 0926 640078.

The Committee is concerned that although the AGM was well attended compared with previous years, those present represented less than one-third of total membership. With this very much in mind, proxy voting will be introduced for the 1987 AGM to be held in March 1988.

I mentioned Model I's earlier; I've had two requests this week for help in tracking down expansion interfaces and it occurred to me that many 'new' owners of these machines probably wouldn't know about the hassle that many of us had when we first went 'double-density'! As I recall, there were three makes of doubler and unfortunate experiences led us to the conclusion that the Tandy one should be avoided at all cost! Anyway, with all these new oldies about, maybe members would like to advertise (free) their redundant software and hardware?

Please, someone, give some serious thought to that Index request. My next project is to get the software library lists up to date - watch this space for announcements!

That concludes this first issue of Sex Notes; I suppose that really I should have commented on the new IBM PC's. I did consider it, but came to the conclusion that Big Blue had already said it all anyway!

Happy Computing!!

MODEL I/III, SOFTWARE LIBRARY (Leighton Davies)

Notes on using the Library.

1. All programs are supplied free to members.

2. This Library contains Model I programs only.

3. Library system is 48K, twin 35 track, S/S S/D, TRSDOS 2:3 & NEWDOS 2:1, and of course level 2.

4. Requests for programs must be sent to the address below.

5. Tape. It is suggested that C-60 tapes be used for requests as these will hold approx. 95K bytes. It's also cheaper than several C-10 or C-20's. Programs will be dumped twice unless one dump is specifically requested.

6. Disk. If single drive, include a minimum operating system, otherwise format only please.

7. I strongly recommend you use strong, (Jiffy type) padded bags, especially with cassettes. Do not send the plastic cases as they are very fragile.

8. Include a stiffener when sending disks, say a 5 1/4" square sheet of hardboard (to stop the postie folding your disks).

9. Finally, before sealing your bags, weigh it, and insert sufficient stamps for return postage, don't forget your list and return address !

Many thanks to all those donors to the Library, too numerous to mention, keep it up !!! Donations means programs by the way !

Library Facilities.

Other facilities available for members include the loan of the TANDY Editor/Assembler Package as below:-

Disk One - Editor/Assembler, LINK 80, Library (FORLIB)

DISK TWO - MACRO 80, EDIT 80, CREF 80.

These are supplied with user manuals only, the Z80 instruction set as supplied is only sent when specifically requested due to it's weight, and , usually, serious programmers have the basic Editor/Assembler package which has the instruction set included.

A Technical Reference Handbook is also available on loan, this is the official TANDY Cat. No. 26-2103 Handbook.

Advice is also available as regards fitting of lower-case to Model I Keyboards as per the ELECTRIC PENCIL program. A modification service is also available if the person concerned has no technical expertise.

If any further gen. is required please phone the number below, BEWARE THE ROBOPHONE).

The address for all Model I/III Library requests:-

The TRS-80 Model I/III Librarian, Glanmor, Brynna, Pencoed,
Bridgend, Mid-Glamorgan. CF35 6PD

MODEL 4 Library (Mike Gordon-Saker)

As a result of Swindon, I am again offering to continue as M4 librarian (Total programs to date 4 - 3 being for Hi-res).

Hopefully we (that is the club) can build up a large collection of programs such as is available for the MI & MIII, but this will depend as always upon the members. The usual rules apply no programs from mags,etc. (Because of copyright infringement). It will be helpful if programs are self-documenting or are accompanied with a text file.

It was suggested by a couple of members that a Basic Function Library would be useful, so anyone with FN's send them in (Don't be bashful about them), there are many ways to achieve the same result, and hopefully a good robust set can be obtained.

FORMATS: Model 4 TRSDOS version 6:xx only, 40/80tks, sides, S/D Density.

DISK WILL BE RETURNED IF ACCOMPANIED BY RETURN POSTAGE.

NOTE*. As I've now got a Job I'll only be at home at the weekends for the next couple of months, therefore I'll only be able to deal with queries at the weekends.

ADDRESS:- Mike Gordon-Saker, 'Uplands', St.Lawrence Drive, Cringleford, Norwich, NR4 7RZ. Tel: (0603) 501072.

(A listing of the Model I/III Library programs runs to 22 pages. Our thanks to both Leighton and Mike for continuing to run the Libraries. Ed **)

SWINDON - MARCH 1987

The AGM was only a small part of the weekend event, which really was good - I am still surprised by the number of members who arrived so early on the Friday, even though the first scheduled talk wasn't until 9.30pm. This year saw more than ever before, with over two dozen of us having lunch in the pub! The hotel staff had the systems room laid out for us, and provided extra mains leads - which were very quickly fully utilised!

Of course, this was seen to be the first chance to exhibit the Amstrad 1512, and some half-dozen made an appearance; there were a couple of 3000's and a few 1000's, plus those two weirdo's of Peter Hall and Tony Endersby (their machines, not their bodies!). Quanta was also well represented and occupied more than half of the inner side of the room.

Talks started off with Roger Storrs demonstrating a simple application for dBase on the Model 4. Carl deferred his planned Mandlebrots until the following afternoon, when he and Simon did manage to to produce some fairly marvellous graphics. Unfortunately I don't know what else happened on the Friday night as I retired early, around 1.30am, leaving about 30 fanatics slaving over their keyboards.

After a jolly good breakfast I returned to the Systems Room on Saturday morning at about 9.00. It seemed that only two had stayed up the whole night! Laurie Shields set up and gave the Multi-User demonstration, hanging two 4P's on to a Model 16. Laurie then went into the Stratton Suite to give a talk on how he felt that Model 4 users should be directing themselves - communications, data sharing, multi-user, etc. When you listen to Laurie then you certainly don't feel that a Model 4 is an obsolete machine.

After lunch we had several sessions. There was an extremely good demonstration of the 1 megabyte board for the Model I (and probably any other Z80 computer); there was a comparison of various DOS's including CP/M, MS-DOS, Xenix, etc, whilst Leon Heller showed off his latest idea - the transputer.

The machine code masochists had their moments, with Laurie talking about the CP/M environment and Paul Ostwind doing likewise for the MS-DOS users.

Geof Smith gave a review of a word processor package for MS-DOS, WORD. Quite a change for our Dr Scripsit!

James Foster was pressed into relating his own experiences in computerizing his business accounting system, whilst Michael Coombs gave a very impressive demonstration of a digitiser in live action. Derrick Rowe put in a very welcome appearance, and was prevailed upon to talk on Quick Basic. The day's formal schedule came to an end with Paul Ostwind and Fontasy.

Apart from the two AGM's, we had only one scheduled talk on Sunday - Mr. Wraight, on the subject of C. Now if nothing else, we learnt the benefits of having professional lecturers. I personally picked up more in thirty minutes here than I have in a year of reading books and

articles, and I really cursed the enforced ending of the talk to allow the AGM to commence. The GOOD NEWS is that Mr. Wraight will be back in October - watch this space for details.

The following is copied from an output by LSI:

ANTI-PIRACY PROTECTION SCHEME ON LS-DOS 6:3. You are right to assume that the protection scheme is very sophisticated, it cannot even be found using any conventional software technique. LSI spent much time and effort in the design and testing of this protection system and we can assure you that: No matter what happens, no legitimate users will ever lose data or have any problem with this protection system - Pirates or users who violate our license agreement WILL have trouble with the system.

PASCAL

(in the following article read ` for { ; ¨ for } ; ç for { & ¾ for })

Turbo Sound a sound procedure for CP/M Turbo Pascal on the TANDY Model IV ..... By John Butcher.

I can not claim full credit for this as it is a direct translation of Robert Anderson's article Sounds Incredible in Feb.86 80Micro page 60 and gives the same results.

I saved it as SOUND.INC to be included in the demo program.

```
procedure sound(tone,durat:integer);
var
    loop,times,time:integer;
begin
    loop:=durat * (2000 div tone);
    if loop ¨2000
        then loop:=0;
    for times:= 1 to loop do
begin
    port[$90]:=$00;          ç change $90 to $FF for cassette port ¾
    for times:= 1 to loop do
        begin
        end;
    port[$90]:=$01;          ç change $90 to $FF for cassette port ¾
    end;
end;
```

The demo program is again a translation of the MUSIC/BAS which was included in the article. Except use Ctrl A to exit.

```
program tune;
var
    durat,tone:integer;
    ch:char;
ç$Isound.inc¾
begin
    write('Enter duration 1 to 5 ');
    readln(durat);
    writeln('press ^A to stop any other key for NOTE ');
    repeat
        read(kbd,ch);
        tone:=integer(ch);
        sound(tone,durat);
    until tone = 01
end.
```

```
ç Turbo Pascal trig.inc Trig. functions to extend the three which are
included in Turbo Pascal. By John Butcher. ¾
ç=========================================================¾
function Sgn(x:real):real; ç used by some of the functions ¾
begin
    sgn:=1;
    if x<0 then sgn:=-1;
    if X=0 then sgn:=0;
end;
ç=========================================================¾
function Tan(rad:real):real; ç tangent ¾
begin
    tan:=sin(rad)/cos(rad);
end;
ç=========================================================¾
function Cot(rad:real):real; ç cotangent ¾
begin
    cot:=1/tan(rad);
end;
ç=========================================================¾
function Sec(rad:real):real; ç secant ¾
begin
    sec:=1/cos(rad);
end;
ç=========================================================¾
function Csc(rad:real):real; ç cosecant ¾
begin
    csc:=1/sin(rad);
end;
ç=========================================================¾
function Sinh(rad:real):real; ç hyperbolic sine ¾
begin
    sinh:=(exp(rad)-exp(-rad))/2;
end;
ç=========================================================¾
function Cosh(rad:real):real; ç hyperbolic cosine ¾
begin
    cosh:=(exp(rad)+exp(-rad))/2;
end;
ç=========================================================¾
```

```
function Tanh(rad:real):real; ç hyperbolic tangent ¾
begin
    tanh:=-exp(-rad)/(exp(rad)+exp(-rad))*2+1;
end;
ç=========================================================¾
function Sech(rad:real):real; ç hyperbolic secant ¾
begin
    sech:=2/(exp(rad)+exp(-rad));
end;
ç=========================================================¾
function Csch(rad:real):real; ç hyperbolic cosecant ¾
begin
    csch:=2/(exp(rad)-exp(-rad));
end;
ç=========================================================¾
function Coth(rad:real):real; ç hyperbolic cotangent ¾
begin
    coth:=exp(-rad)/(exp(rad)-exp(-rad))*2+1;
end;
ç=========================================================¾
function ArcSin(x:real):real; ç inverse sine ¾
begin
    arcsin:=arctan(x/sqrt(-x*x+1));
end;
ç=========================================================¾
function ArcCos(x:real):real; ç inverse cosine ¾
begin
    arccos:=-arctan(x/sqrt(-x*x+1))+1.5708;
end;
ç=========================================================¾
function arccot(rad:real):real; ç inverse cotangent ¾
begin
    arccot:=-arctan(rad)+1.5708;
end;
ç=========================================================¾
function arccsc(rad:real):real; ç inverse cosecant ¾
begin
    arccsc:=arctan(1/sqrt(rad*rad-1))+(sgn(rad)-1)*1.5708;
end;
ç=========================================================¾
```

```
function arcsec(rad:real):real; ç inverse secant ¾
begin
    arcsec:=arctan(sqrt(rad*rad-1))+(sgn(rad)-1)*1.5708;
end;
ç=============================================================¾
function argtanh(rad:real):real; ç inverse hyperbolic tangent ¾
begin
    argtanh:=ln((1+rad)/(1-rad))/2;
end;
ç=============================================================¾
function argsinh(rad:real):real; ç inverse hyperbolic sine ¾
begin
    argsinh:=ln(rad+sqrt(rad*rad+1));
end;
ç=============================================================¾
function argcosh(rad:real):real; ç inverse hyperbolic cosine ¾
begin
    argcosh:=ln(rad+sqrt(rad*rad-1));
end;
ç=============================================================¾
function argcsch(rad:real):real;ç inverse hyperbolic cosecant ¾
begin
    argcsch:=ln((sgn(rad)*sqrt(rad*rad+1)+1)/rad);
end;
ç=============================================================¾
function argcoth(rad:real):real; ç inverse hyperbolic cotangent ¾
begin
    argcoth:=ln((rad+1)/(rad-1))/2;
end;
ç=============================================================¾
function argsech(rad:real):real; ç inverse hyperbolic cosecant ¾
begin
    argsech:=ln((sqrt(-rad*rad+1)+1)/rad);
end;
ç=============================================================¾
function rad(deg:real):real; ç degrees to radians ¾
begin
    rad:=deg*0.01745329;
end;
ç=============================================================¾
```

```
function deg(rad:real):real; ç radians to degrees ¾
begin
    deg:=rad*57.29578;
end;
ç=========================================================¾
```

ADVERTS

Software for Sale.

Model I casette - FREE to first taker (S.A.E. please)
Lower case driver
Prosoft Faster (Mod I/III)
T-BUG Z80 Monitor/Debugger Aid (43p stamp)
Microsoft Editor Assembler Plus (60p stamp)
Adventure International Chess
501 UP (darts game)

Model I Disk
Compak - BASIC utilities £4.00
GEAP and DOTWRITER ..... £12.00 (graphic font generator)
JUMBO - flight simulator £4.00
Premier Toolkit £2.00

Model III
ACCEL 4 (I/III) - BASIC compiler £7.00
SERIES 1 Editor Assembler ..... £7.00 *
Business Analysis Pack (Tandy) ..... £8.00 *
REMASSEM - Assembly Language Tutor £8.00 * (disk and audio cassettes)
VisiCalc ..... £12.00 *
SUPERKEYS £3.00
COBOL ..... £20.00 *
CORPLAN (cassette) ..... £8.00 *

Model IV

BASCOM - BASIC compiler ..... £20.00 *
Tandy Hi-Res Computer Graphics ..... £15.00 *
Full Screen Editor £5.00
PFS File - database ..... £25.00 *
PFS Report - database report

Amstrad CPC464

AMS - FORTH 1.1 .....£8.00
HI-SOFT DEVPAC Editor Assembler £8.00
HI-SOFT C .....£10.00 *

Software marked * £2.00 postage, the rest 50p

Books for Sale

The custom TRS-80 & Other Mysteries £4.00
Programming Techniques - Level II ..... £2.00 *
Level II ROM Reference Manual - Paay .... £4.00 *
TRS-80 Assembly Language Subroutines £4.00
TRS-80 Assembly Language Programming .... £2.00 *
More TRS-80 Assembly Language Programming £2.00
TRS-80 Graphics £3.00
The Z80 Microcomputer Handbook £2.00
The Basic Handbook - David Lien £3.00
Data File Programming in BASIC £3.00
BASIC Programming - Kemeny & Kurtz £4.00
Personal Computing - Daniel McGlynn £3.00
Using CP/M - a self teaching guide ..... £3.00 *

Books marked * 60p postage, the rest £1.50

For all above contact:- .. I. H. Wright, 17 Greygoran, Sauchie, Clacks., FK10 3ET. Tele:- (0259) 213515

The Rev. Leslie E. Goulden who uses a Tandy Model II, and also a Tandy Color Computer No. 1, would like to have contact with other users of these machines. Details from:-

61, Skellingthorpe Road, Lincoln, LN6 7QT. Tele: (0522) 680 122
Prestel No. 0522680122

A Mr. John Reid, of 25, Manor Road, Solihull, West Midlands wishes to purchase a TRS-80 Model I Level II computer with 48K memory.

For Sale:- 48K Model I. Percom double density, RSR 232, Tandy green screen monitor, two disk drives, ZEN, Finplan and other software, £150.00. Extra 16K Keyboard £15.00. Extra 35 track drive £15.00, all postage extra. Contact:

Mr. Arnold Handley, Stanton House, West Bergholt, Colchester. C06 3JS.
Tele: (0206) 241725

For Sale:- Tandy Model IV 128K, twin disk drives, Gemini Printer and some software.... £750.00. Contact:

Mr. Lloyd Dobson, Six Ways NCTA, 21 Clifton Road, Aston, B6 5DB.
Tele: 021-747 9872.

For the following please contact:- Mr. H. J. Stovold, "Mayude", Valley Road, Swanage, Dorset, BH19 3DZ.

HARDWARE

EG3003 Video Genie, inc. Sound and external Hi-Res. unit. EG100 B&W monitor. EG3014 Expander Box (36K). 2 off EG300 40T, SS/SD Disk Drives. Alpha-80 DM Printer. Inmac MiniModem (300/300)

SOFTWARE

LDOS 5:1:3. SmalLDOS. LED Line Editor. FED File Editor. LDOS Toolbox. SuperUtility + . HyperCross. BBC Disk. LMODEM 80. AJEDIT. SuperSCRIPSIT. PowerDraw. Animation. Datawriter. DBMS. PageFile. Infoscan. SIR. Quikpro + . VisiCalc. Graphit. Critical Path. Graph Plotter. Basic (extended). Pascal. QASM. Pilot. Family Tree.

The above for an all-in price of £500.00. All applications are complete with manuals, and the hardware is in working order with all appropriate cabling and connectors. Also included is an assortment of games on disk and tape, and several tapes of Kansas City utility software (debuggers, etc.,), and some books on the Video Genie and TRS-80 (probably 20-25 in number).

As, Sam, Sara, Jackie or Linda were not available, we then reserved this space for YOUR article, which, unfortunately did not arrive in time.

(Will they turn up next time just for Sex Notes ?)

LOCAL CLUB NEWS

BOURNEMOUTH

Meets First and Third WEDNESDAY at Kinson Community Centre at 7.30pm.
Contact: Carl Rabe, (0202) 730617

CHELMSFORD

Meets first WEDNESDAY of each month at 7.30pm.
Contact: Richard Creak, Woodcote, 59D Little Baddow Road, Danbury, Chelmsford, CM3 4NT. (0245) 413725

MILTON KEYNES

Meets alternate Sundays, October to March.
Contact: Brian Pain, (0908) 564271

SUDBURY

Meets every second Wednesday of the month at 3a Gainsborough Street.
Contact: John Kilpatrick, (0787) 79504.

SWINDON WEEKEND

The next meeting is scheduled for October 16th-18th - make a note,

NOW!

Contact David Washford, (0373) 72739.

If YOUR club isn't mentioned above then its your fault, not ours. For your FREE advert, WRITE with details to:- Gordon Collins, Editor.

NATGUG NEWS

Volume 8, Issue 11/12.

May/June 1987

OFFICIAL JOURNAL OF THE

National Amstrad, Tandy & General User Group

INFORMATION ON THE GROUP

Membership of the group is by subscription to the Newsletter which is published at regular intervals - application forms are available from the Secretary. Membership of the group is open to anyone with an interest in computers but special emphasis is placed on equipment within the Amstrad, Tandy, and MS-DOS range.

Details of the group's accounts and constitution are available from the Treasurer - please ensure that your requests are accompanied by a S.A.E.

Members requiring assistance with problems related to the machines specified should contact the P.R. Officer who will endeavour to put them in touch with possible advisers.

Sub-groups exist in many areas and their Secretaries are invited to forward details to our Editor/Publisher for inclusion in the magazine. The back page is being reserved for this purpose.

Public domain software libraries are maintained, in four separate collections: Model I, Model 4, CP/M and MS-DOS. Names of the appropriate librarians are available from the Secretary. (also see Vol 8, Is. 10)

Back numbers of the magazine, in 6-month volumes, are available at the price indicated on the application forms.

The group has no paid Officers or employees, and the issue of the magazine depends on contributions from Members, who are also invited to submit responses to questions raised in the previous issues. To allow legible print, we prefer contributions to be submitted on 5.25" disk, direct to the Editor - ASCII files are perfectly acceptable but please indicate the disk format used (SS,DS,SD,DD, track count, DOS etc). Your disk will be returned (if you enclose an addressed label) normally within 7 days. The Editor will accept written or typed articles where members insist - publishing will depend on readability .

Newsletter Editor/Publisher

Gordon Collins,
11 Elizabeth Road,
Sutton Coldfield,
West Midlands,
B73 5AR. 021-354 3299

Secretary

David Washford,
6 Houston Way,
Frome,
BA11 3EU
(0373) 72739

P.R. Officer

John Kilpatrick,
3A Gainsborough Street,
Sudbury,
Suffolk,
CO10 6ET
(0787) 79504

Treasurer

Roger Storrs,
Oakfield Lodge,
Ram Hill,
Coalpit Heath,
Bristol. BS17 2TY
(0454) 772920

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EDITORIAL

Thank you for all the nice comments received about the format of the last Newsletter, to date there have been no adverse comments, or have you all been to polite to say? Since writing the first Editorial the committee have taken steps, some of which you have seen directly, to build up the membership of NATGUG, already we are showing progress. Most, not all, of the work has been done by Roger Storrs, for which we thank him.

Various requests have been made to members of the committee for information or items, Please be assured that these requests are being processed, but as we are all volunteers with regular jobs, this may not be done immediately. When a request is received, that we can see will benefit all members and will be asked for repeatedly, we then try to make it efficient to deal with. Any future requests will then be dealt with quickly, and not take time and a great deal of 'work' such that a one-off request would, each time.

To all those members who have requested a copy of the Model I/III library listing. We now have the data to hand, this has got to be put into some type of format and then sent to the printers.

An item that was discussed at the A.G.M. was the amount and the worth of the Newsletter back issues stock held, £300 on the balance sheet. Due to the recruiting drive and the contact with 'lapsed members', NATGUG is now in the position that some issues of the Newsletter are now out of stock. The committee may have to take a decision to find a way of doing a reprint. We (the Treasurer really), are trying to compile a listing of numbers held, that is quantity of each issue, for publication in the Newsletter.

Today (16-5-87) I received in the post a circular from Molimerx saying that as of the 30th June 1987, they will no longer support Tandy machines. The committee may have some more information of developments about this at a later date. Molimerx have issued a list of items for sale and announced that until 30th June, everything in the catalogue will be at half price.

To get back to the favourite subject of Editors, could I just mention, that as of this date, I have only two items for publication, so maybe you will only receive an 8 page Newsletter this time. There are now about 180 members, and it would be nice to send out at least a 16 page Newsletter each month. This would only require (at a rate of one article per page for the remaining 12 pages) 12 articles times 12 = 144 articles. So is one contribution per member per year, asking to much - please! No this does not mean a restriction OF one contribution per year per member.

This Newsletter is being sent out as Issue 11/12, that will bring the Newsletter's month of issue to the same month in which it is received by the membership. (Nobody doubts that, do they ?). Please note my timings of Newsletter production. It is my aim to send the copy to the printers around the end of the third week of the month, you should then receive it from the printers about the first weekend of the month. Would Members sending articles please bear this in mind, as I know you would like to see your contribution in the 'next Newsletter', and not have it just miss being included.

Looking at earlier Newsletters, there used to be a section containing members letters, which on occasions caused some lively discussion. I propose to try, with your help, to pursue this again. To that end, any letter now received by any member of the committee and which is considered of benefit to the membership by publishing it, then that letter will be included in the Newsletter - unless received with a request NOT to. Since the A.G.M., we (the committee) have received just some such letters. As in the immediate past, it has not been the 'norm' to publish letters received, we have not done so. Look out for "Readers Forum". (Who will get the first letter in ?)

This paragraph is addressed only to those people who are reading this Newsletter and have not subscribed to NATGUG, (IF YOU = "paid-up member" GOTO NEXT paragraph). Your subscription would give you membership of NATGUG (see the first paragraph of "Information on the Group"). It may not bring the cost of your subscription for the Newsletter down, but it would certainly help to hold the price at its present level. Members of the committee also tend to discourage giving advice/help to non-members except for one little bit, please join NATGUG, we can then help you.

One benefit of NATGUG Membership is the 10% DISCOUNT allowed on items purchased by a member, from Os House. You could well recover the price of membership and indeed show a profit.

Does any member have any suggestions, likes or dislikes that they would appreciate seeing in the Newsletter? Please let your Editor know. Do we have a very satisfied membership?

You have read about the two meetings held at Swindon each year, (October and March). Also the "Open House", ('never have known if that is not some form of a pun), held at the invitation of Os House, normally on a Sunday in September. These are clearly in the south of the country, but are attended by members from all over the country, including Northern Ireland and France, (also Wales). Could the Secretary or I hear from any member(s) who would like/have an additional venue, which the committee could consider? The meetings at Swindon and Blandford have proved to be very popular, enjoyable and successful, and do not affect the funds of NATGUG in any way.

With effect from Volume 1. Issue iii of "The Misosys Quarterly", there is included an "LSI LS-DOS Column", submitted by LSI. This will include information on technical subjects concerning LS-DOS 6:3, and all patches to the system.

We hope shortly, to have access to a copy of "The Source".

I am hopeful that more information may shortly be available about the 1 mByte RAM boards from Terry and Ian.

My thanks to those people who sent in articles for this Newsletter, and the last one. Best Regards to all, Ed **.

STOP PRESS

One article arrived at the last minute, this would have required being typed in. I thank the member and appologize that it will now have to wait for the next Newsletter. I wrote that on Thursday, 21st May. Today, Sat. 23rd May, I received further articles as well as a number yesterday. No, I am not complaining, just very thankful. If I

had written an article, I would wish to see it appear in the next Newsletter. Due to the number of articles received, when I was just about to send the copy to the printers, I am now in the position of having to apologize to those members who will not see their articles in print this time, also you may see more typos than usual due to the rush. For those members who have requested information about Model I doubler boards, I have received a phone call promising an article about one members experiences, if received, I hope to have that in the next Newsletter. Ed. **

SEC's NOTES

I write these notes, late as usual, to a background of political rhubarb from which no TV channel or local radio station seems capable of escaping - it is enough to drive one to Radio One! One point that I have picked up, and which is common to the speakers of all political persuasions, is the fear of the apathetic voter who won't bother to turn out, leaving it to others to do his job for him. By the time that you read this the General Election will be over, and judging by the responses received by your Committee, not more than five of you will have voted - I trust that you are ashamed of yourselves!

The little bit of feedback that I have had has been virtually all from Model I users (would you believe, that after my last month's comment, two people have rung to ask how they can get Newdos to work with the Tandy Doubler?) and in almost every case they have declined to renew their membership because they don't feel that NATGUG is interested in their machines. Please, please, please, will SOMEONE write to one of us and say just WHAT THEY DO WANT. As you might gather, I do feel very strongly about this since it was the very comments by one or two Model I (or Genie) users that spurred me into accepting this Secretaryship and I do not enjoy being advised of these peoples' non-renewal of Membership. Just for the record I repeat that I use a Model I nearly every day, together with a Model 4 that, apart from CP/M use, runs Model I programs (see further article).

And of course we need correspondence on every other aspect of computing and model of computer as well!

How sad to hear that John Harding is closing down Molimerx after ten years - there can be absolutely no doubt that Tandy owe an enormous amount of their earlier success, particularly in business applications, to Molimerx. I remember quite clearly how Tandy eagerly sold me my Model I and then the Scripsit package, but I had to go to Molimerx for Visicalc (ironically in a Tandy package) and for all my text books (and games). John is actually finishing on June 30th, so you have precious few days left to ring him, on 0424 220391 to buy that software you kept promising yourself. After that date, he intends to offer his services in Consulting, Custom Programming, and Disk Repair and anyone wishing to avail themself of any of those services should write to him at:-

PO Box 10, Bexhill on Sea, E. Sussex, TN40 1PX.

Leo Knaggs has very kindly offered us space on his Blandford Bulletin Board which currently runs at 300 baud. Before we set up the NATGUG sig, Leo hopes to get automatic baud rate recognition working so that virtually any modem can access his system. As with so many other projects at the moment, you'll just have to keep watching this space for news of the switch-on date. (I have asked if we can have a talk at one of the meetings on the theme of, "Now I have a Modem, what do I do with it? Ed. **)

80-Micro for April included help for lost Superscripsit files (models 1/3/4), a model 4 BBS driver, and model 1000 articles on Graphics, Basic & Assembly, and Batch Files. The May issue includes an automatic Date Stamp utility for 4 or 1000, a Model 4 text file comparison utility, and a 1000 text buffer. The Load-80 disks (now renamed Disk Series) relate only to Model 4 programs - how would members react if NATGUG became a $199 per annum subscriber? (Replies to your Secretary please. Ed. **)

Regrettably we still cannot confirm that the August meeting at Blandford will take place, accommodation being the main problem. Os is giving the matter his urgent consideration, and hopefully we'll have more news next month. In the meantime, Os comments that models 1000 and 3000 are selling extremely well which proves that they are accepted as being superior to so many other machines, as well as being a good omen for future NATGUG membership.

That's all for this month's random jottings - I just hope that between us we get more than five letters in response!

David Washford, Secretary.

FROM OUR LITTLE TREASURE(R)

(my words, Ed. **)

In the last Newsletter, I made no contribution, so my colleagues have decreed that I must now contribute. (Hope the broken leg soon mends, could not have been the arm as this stops keyboard input. Ed. **)

The Key to our success must be communication and that means the Newsletter. We want you to know what we are up to and what our problems are. This must work two ways. The Newletter can only respond to your needs if you stimulate it to do so. We have lost a number of members over the last four years due to a combination of reasons. The new committee will do its utmost to respond to your needs, so please talk to us.

The Newsletter is yours. You are the subscribers, the contributors and the readers. Write to it; criticize it; stimulate it; contribute to it. I suspect that many of our lost members may have joined for six months, read the Newsletter and decided for a variety of reasons that the Newsletter was not useful to them. Please if you do not find the material you want in the Newsletter, write to the editor and say so.

Now what have we been doing since the AGM ? The first Newsletter we put out, was the last of Geof's editorship. It was delayed a good deal by the takeover, the need to put in the Stop Press, and physically getting the Newsletter from Brian to Gordon. Due to a misunderstanding the Stop Press copy had to be done twice and Gordon had to work quite hard transferring Brians mailing list onto POWERMAIL. I made a trip to Sutton Coldfield on Saturday 28th March to give Gordon moral support and generally get under his feet. The following Saturday when the final Stop Press sheets were ready, Gordon and David visited my home,

to stuff envelopes and generally have a sort out. Finally I managed to post that Newsletter out on Monday 6th April. That was our first hurdle over; I think we all learnt a great deal.

As some of you may know John Bodsworth is now printing the magazine for NATGUG and he has taken responsibility for mailing. Gordon supplies him with the copy and the address labels. We hope this will be fast and efficient.

I have opened a new NATGUG bank account in Bristol. All NATGUG funds from Stony Stratford having been transferred. I have had some dealings with Access and Barclaycard and have been using the former, but there will be developments in this area, I think. It seems that both systems allow for a sort of automatic direct debit. With the co-operation of the members who use credit cards and that from the end of 1987, we will have yearly subs, I will do the majority of the slips during my christmas break. This would make life easier for me. The easiest system for me is of course payment by cheque, but my main concern is the future of the club. I therefore, will accept payment anyway you wish to send it.

I have spent quite a bit of time trying to supply those members who are owed back Newsletters, I think I have found most. At this moment in time we still have a problem with some back issues, but David is in the process of photocopying his personal copies, so I should be able to rectify this problem very soon. (The Committee do not have a copy of Newsletter number six, that would have been, Volume 1, Issue 6. Please would any member with a copy that we could borrow for the purpose of photocopying, please contact the Secretary). The other biggish hurdle has been Model I/III software library lists. We did not have any. This one should be sorted fairly soon. Leighton Davies kindly sent me a Model I, S/S S/D TRSDOS disk which I managed to read with SU while David coached me on the phone. They will be on the way to the printers as soon as they have been edited.

The database that many of you saw at Swindon, now contains 304 names, only about half are fully paid up members. I am in the process of mail shooting the other half, if we can reclaim half I shall be very pleased and a bit surprised. Brian supplied us with a membership list in a Basic data file. It was quite beyond my meagre abilities to deal

with this, so David transferred this into the well known database for me. I have now re-organized both these files into what I hope will become the basis for a set of efficient management files. I am going to need some help from the experts for this though.

The two databases have identical fields, three name fields, four address fields, post code, telephone, six single character fields for membership subs and flagging. The Basic data file has 866 names which reduces to 760 when you remove the names on the later file. It took me several hours to write a command file to do this and about three quarters of an hour to do the business. When I have finished the first mail shot of 150 it is proposed that we have a go at the 760 on the 'old' file. If we picked up five per cent here, I think we would be very lucky.

Our next task must be to extend the database to include members interests and areas of expertise. John Kilpatrick is desperate to have this information at his finger tips. If you are willing to give help to others, please make sure John knows, and that he is aware of your area of expertise. I think John may prefer to build his own file, so I now propose to let him see all your membership forms.

I am trying to make a point of replying to everyone, who writes to me, whether the writer sends stamped addressed envelope or not. I do not include straight forward renewal forms, except where the member resigns, then I will tell him that we regret his departure and hope he will change his mind.

I would like to congratulate Geof Bazin who has already used the extra renewal form to enrol a friend, William Fildes, and has requested MORE forms. Now who is going to outdo Geof. Welcome William.

Roger Storrs, Oakfield Lodge, Ram Hill, Coalpit Heath,
Bristol. BS17 2TY. (0454) 772920

SOCIAL TIME. Each year, during July, for the last five years, Roger and Gillian Storrs have held a party at their home for friends and colleagues at work. This consists of an 'Hot Dog Barbecue' and Disco, a fully equipped bar is also to hand (drinks have to be purchased). This year members of NATGUG are invited. So that numbers for catering

can be assessed, any member who would like to go along is asked to contact Roger or Gillian, soonest please, to above address. Ed. **.

THE XLR8er

The XLR8er is a small PCB that fits into your Model 4 or 4P, & is connected to it by a length of 40 way cable and connector that plugs into the Z80 socket, the Z80 being no longer needed. In the case of the 4P, the board slides into the slots which would otherwise be used for a Modem, if we had one that BT would approve.

It has an HD64180 processor, 256K of ram & all the support chips needed to improve the operation of the computer quite considerably.

When the advert first appeared in 80 Micro, I wrote away to HI-TECH for extra information about the board because there were a lot of missing details. After about six weeks without a reply, I wrote a second letter to them saying that I was surprised they had gone to so much expense in advertising & then not replied to letters. I also said that I was sending a copy of my letter to the Advertising Complaints Dept of 80 Micro, as a result I had a free copy of the manual back within two weeks.

The manual raised some new queries, so I listed them & sent off another letter, including yet again money for postage as I had done with the first letter. By the end of January I had not had a reply so I wrote again telling them I was sorry they had not answered my letters as I had hoped to have a board up & running in time for the March Swindon meeting, to this day I have not heard from them.

When I went to Swindon (the Highlight of my year), I had the good fortune to meet Stuart Ranson who had an XLER8er board & wanted it fitted, naturally I volunteered to help. As a result most of my outstanding queries were answered, it still however leaves one or two points to clear up. The question of Model III compatibility still needed resolving. The MODELA/III ROM image software would not load, even with the 'speedup' software not installed.

Being the Swindon meeting, it was not long before someone came to the rescue. Laurie Shields promptly went away & cooked up a program to get around the difficulty. That's the beauty of a meeting like Swindon, there is always someone who can sort out a problem, may they long continue!

It so happened that Stuart had trouble getting his board, it was held in Customs for a long while, in the meantime he wrote & told HIGH TEC who sent off another board. Of course, the first one turned up in the interim. As a result, I was able to buy the second one from him a couple of weeks after the Swindon meeting was over. It's no trouble to fit on the 4P, although the connecting cable could be longer.

Now as to what I think about the board. It certainly speeds up the computer, using the PCW Basic benchmark tests the average increase in speed is about 30%, even loading Basic was 16% faster. Of course, it took time to load the speedup software, but as it nearly all could be 'sysgened' this was a one off function.

Here are the actual times of the various PCW benchmark tests:-

	Unmodified Machine	Modified Machine
Integer Math	5.15 secs	3.48 secs
Real Math	7.19 "	5.35 "
Triglog	45.50 "	31.90 "
Txtscreen	59.69 "	41.22 "
Loading Basic	7.57 "	6.31 "

The 'speedup' software is supplied on discs for TRSDOS 6:xx, Montezuma's CP/M 2.2, & now I believe LDOS. The most detailed instructions being given for TRSDOS, setting up being in JCL files, the top speed under CP/M only being possible with BIOS 2.32.

It's not a lot of use loading all your system files, with the JCL file provided, into the now quite large (by Model 4 standards) memory, unless you are going to be using the computer for quite some time. But you can load your program, say, Visicalc & files into ram, & running at full speed the difference is considerable.

Using Supercalc the same way, seems to give an even greater increase in operating speed. dBase II programs also run very fast, screen refresh is almost instantaneous.

So, as far as I have gone, the verdict is that if you are going to run your machine for several hours each day, it's a good investment. You do have a lot of ram to play with, but if you only use your computer occasionally, it's a nice improvement if you can afford it. The high-res graphics work very well too.

I hope to be able to persuade HIGH-TEC to write to me as they also advertise the ZCPR3 operating system specifically written for the XLER8er board, this system is 'upward' compatible with CP/M but makes use of the HD61480 processor's extra instructions & speed. One snag I have run into, is that when you first switch on or reset a disc, it sometimes tries to load the Model III ROM image software, even if it is a CP/M disc in the drive.

When I say it's not difficult to fit, I mean for anyone who doesn't mind taking his machine apart & doing things to it. There are no traces to cut or wires to solder. Anyone who buys one & needs it fitted, can call on my help at any time if I am near enough, (my only transport is shanks's pony unfortunately).

So now I am going to write another letter to HIGH-TEC, & hope they have the courtesy to answer me.

E.C. (John) Kilpatrick, 3A Gainsborough St, Sudbury, Suffolk. CO10 6ET
0787 79504

(The above article arrived on a CP/M 80T,D/S,D/D disk in ASCII format, was ported to a second Model IV onto an LDOS 6:3 disk in a blink, then put into the one long LeScript file for the Newsletter. Ed. **)

NEWSCRIPT - ALLWRITE

Although I use my TRS-80 for several different uses, I find I use word processing most of all.

As soon as I changed to disks on a Model I, I went over to NEWSCRIPT. I found it an excellent program, with an easy to follow manual. However, it had one infuriating fault. To produce lines longer than the 64 characters of the screen, you had to move the text so that the left was no longer visible until you switched back. Since I often do pages of tickets with 6 or 8 per page there was always the fear that those on the right might not exactly duplicate the left versions.

When I changed to my present machine, a TRS-80 Model IV, I obtained a Model III version of NEWSCRIPT, but it still only provided 64 characters per line on the screen. I therefore got in touch with PROSOFT, only to find that NEWSCRIPT had been replaced by ALLWRITE. By the use of an ACCESS card, I managed to prize a Model IV version of ALLWRITE from the depths of California, Prosoft, Box 560, North Hollywood, CA 91603, U.S.A. I also obtained a spelling correcting program, ELECTRIC WEBSTER, from:- Cornucopia Software Inc., PO Box 6111, Albany, CA 94706, U.S.A.

I have found ALLWRITE meets my every requirement and I recommend it to Model IV owners. I send this to swell the NATGUG News and in the hope that some may be interested. Incidentally, if anyone would like to make me an offer for my NEWSCRIPT, for Models I & III, complete with manuals, I would be glad to part with it.

Eric Brandes, Tele:- Gerrards Cross (0753) 882982.

FONTASY ON A MODEL 4 & MODEL 1 or DOT WRITER FONTS DECODED.

I have used the old GEAP and TINY GEAP Programs for a while, and always wanted to use the DOT WRITER FONTS as GEAP does with medium large & cube letters, i.e., typed in anywhere on the screen. With this in mind I looked at DOT WRITER FONTS to see how they worked, in conjunction with the Basic version of TINY GEAP.

I have also looked at using Laurie Shields program of Screen Dumping, this was originally written in one of the earlier issues of the Newsletter, for Model 1. The result is, I have written a program

to dump DOT WRITER fonts onto the Screen, save the screen to disc, to be later used if required from Basic for more interesting screen displays. This will work in Mod 1, Mod 4 in Mod 3 Mode and Mod 4 under TRS 6. I have added High Res graphics under GBasic. This latter works closest to FONTASY, & can be printed with a screen dump. Further additions allow full movement of font chars or groups of characters around the screen. By using DDUTY, I can put GBASIC's Draw program in one side, my program in the other, both can then be swapped around to produce a very effective drawing & graphics program in High-Res.

DOT WRITER FONTS DECODED.

The font is written as one continuous piece. The first 4 Bytes are the most important ones. They indicate the length of each font charactor, number of bytes needed to make the character, and the number of vertical lines of the charactor.

e.g., 1C 00 0E 00 1C gives 28 chars to make Char.
0E gives 14 chars wide for Char.
1C / 0E gives 2 lines for Char.

There are some further information bytes on some fonts ending in 60. These I have not dealt with as they are used by DOT WRITER to indicate information as 'No lower case'. The font is then made up of 28 byte divisions, but have no markers at all. The first division contains the information as above then the chars. follow. ! to z in order, if the font is long enough to contain all the chars. DOT WRITER or TINY GEAP calculate the position in the file of the char. and loads into memory the 256 bytes which includes the char. Each char. represents 8 vertical dots, each bit of a byte indicates if the dot is set or not. The char. is scanned left to right, then starts again 1 line down.

TINY GEAP on input of char. required, calcs. the record number to bring into the buffer, loads it, then by VARPTR of buffer, reads in the calculated start of the char. If the char. goes into the next record it will bring that in. Each byte is then printed to screen or paper. TINY GEAP uses many USR calls & I have not decoded them, so I wrote all in Basic.

The program works well but not quite as fast as FONTASY, but for program development, i.e., screen formatting using font chars., it is quite adequate.

Programs in practice.

TRSDOS 6 basic has no SET & RESET calls, but an additional machine code program from 80 Micro is used to give these functions. Since no drawing program is around for TRSDOS 6, I wrote one to add GEAP type drawing using arrows & Keypad to move cursor. This whole program was adapted for GBasic and High-Res., adding a few High-Res commands like SAVE, LOAD and PRINT. The program has also been adapted for Mod 1. In High-Res the chars. are small as are the set points. In Low-Res a char. can fill half the screen, but by choosing the right fonts an enhanced Screen can be produced; adding in drawing to produce boxes etc.

Using Laurie Shields screen dumping program, a fast and impressive screen i.e., menu or display can be produced from Basic. The Screen Program in the original form was in an earlier Newsletter. An enhanced version working under 2K of screen memory and TRSDOS 6 basic, is now avialable. This enables a screen formed from fonts to be saved to disk as a file of many screens, these can be loaded into Memdisk for fast access. I use the original screen program to load 6 @ 1K screens from memory to screen:- menus & data inputing screens. These screens also give a very fast screen refresh.

THE PROGRAM ITSELF. Below is a listing of the Font Print-Out part.

```
3500 CLS:CLOSE1:ONERROR GOTO4500
3505 PRINT "NORMAL OR REVERSE" ' Reverse Chars can be printed
3506 Z$=INKEY$:IF Z$=""THEN 3506
3507 IF Z$="R" OR Z$="r"THEN R%=0 ELSER%=1
3510 CLS:PRINT"HIT KEYBOARD SYMBOL FOR FIGURE: ";
3520 A$=INKEY$:IFA$=""THEN3520 ELSEI=ASC(A$)
3530 PRINTA$:IFI<33 THENI=I+64
3540 IC=I-32
3550 PRINT"ENTER LETTERSET FILE NAME (0 TO CANCEL): ":IF D1$<>"" THEN
     PRINT "<ENTER> ALONE FOR ";D1$
3560 LINE INPUT A$:IFA$="0" THENGOSUB310:RETURN
```

```
3570 IFA$=""AND D1$<>"" THENA$=D1$
3575 CLS:IFYY%THENGOSUB310
3580 D1$=A$:OPEN "I",1,A$:CLOSE1:OPEN "R",1,A$
3590 GET 1:FIELD 1,2 AS B$,2 AS C$
3600 W%=CVI(C$):IFW%=0THENPRINT"FILE;A$;" NOT FORMATED CORRECTLY !";FOR
     I=0TO4000:NEXT:RETURN ' W% = No. of Bytes to Font Char.
3610 Q%=CVI(B$):M%=Q%/W%:I=VARPTR(B$):H=PEEK(I+1)+256*PEEK(I+2)
3620 IC=IC*W%*M%:NR=IC/256+1:NB=IC AND255 ' Q% = Width of Char
3621 IF R%=0 THEN FORXX=X1% TO
     X1%+W%-1:FORZZ=Z1%TOZ1%+M%*8-1:SET(XX,ZZ):NEXTZZ:NEXTXX
3630 X0=H+NB:L%=1:MM%=0:M1%=1 ' M%,M1% refer to Height of Char in
     lines
3650 GET 1,NR:GOSUB 3800:NR=NR+1:X0=H:IFL% THEN 3650 ' NR = rec No.
3660 CLOSE1:Y=R3%:X=C1%+W%+2:RETURN 'These set cursor for return to
     display.
3800 'X0 is varptr calc position of char in buffer.
3900 X%=PEEK(X0) ' Byte to be acted on for screen print
4000 IF R%=0 THEN 4300 ' Reverse char Mode
4010 IFX%AND128THENSET(X1%,Z1%) ' Printing to screen bits of byte
4020 IFX%AND64THENSET(X1%,Z1%+1)
4030 IFX%AND32THENSET(X1%,Z1%+2)
4040 IFX%AND16THENSET(X1%,Z1%+3)
4050 IFX%AND8THENSET(X1%,Z1%+4)
4060 IFX%AND4THENSET(X1%,Z1%+5)
4070 IFX%AND2THENSET(X1%,Z1%+6)
4080 IFX%AND1THENSET(X1%,Z1%+7)
4230 MM%=MM%+1:X0=X0+1:IFMM%=Q%THENL%=0:RETURN
4232 IFX0-H=256ANDMM%-(W%*M1%)=0THENM1%=M1%+1:Z1%=Z1%+8:X1%=X1%-W%+1
     :RETURN:ELSEIFX0-H=256THENX1%=X1%+1:RETURN
4235 IFMM%-(W%*M1%)=0THENM1%=M1%+1:Z1%=Z1%+8:X1%=X1%-W%+1:GOTO3900
4239 X1%=X1%+1:GOTO3900 ' above calcs end of line, end of FONT char,
     end of buffer so next record.
4300 IFX%AND128THENRESET(X1%,Z1%) ' Reverse printing of bits.
4310 IFX%AND64THENRESET(X1%,Z1%+1)
4320 IFX%AND32THENRESET(X1%,Z1%+2)
4330 IFX%AND16THENRESET(X1%,Z1%+3)
4340 IFX%AND8THENRESET(X1%,Z1%+4)
4350 IFX%AND4THENRESET(X1%,Z1%+5)
4360 IFX%AND2THENRESET(X1%,Z1%+6)
4370 IFX%AND1THENRESET(X1%,Z1%+7)
```

```
4380 GOTO4230
4500 CLOSE1:CLS:PRINT"DISK ERROR ";ERRS$;:FORR=1TO4000:NEXT:RESUME 4510
4510 ONERROR GOTOO
4520 GOSUB 310:GOTO1250 ' 310 is screen Zap from stored memory to
```

The program works by a keyboard entry of "T" which stores into memory the present screen, notes position of cursor and goes into above routine. The char. is printed from cursor point, looking at 8 vertical pixels at a time, scanning across then dropping one line (8 pixels), then printing the next line until end of char. The cursor then is moved to 1 pixel past printed char. and ready for next entry. The reverse mode is carried out by printing a white background & resetting instead of setting. This was found best since this is how Mod 4 works with its reverse mode. If you print a char., the computer exclusive or's the background to print white if background is black & visa versa. This is quicker, as only the pixels required to be printed on are printed.

The Hi-Res mode in Mod 4 works very similar, but the screen handling is easier as it does not need to be saved to memory since the Hi-Res screen uses its own dedicated memory. Saving & loading of screens are done using Gbasic commands. Printing of screens is carried out in the same way.

THE REST OF THE PROGRAM

A Main Menu lets you SAVE, STORE Screens to a disk file. Load GEAP Screens, (In Mod 4 Mode allows offset since GEAP is only a 1K Screen). The Screen Edit Mode allows Keyboard chars. to be entered on screen. Goto Font Mode. The sub menu is as below. Instructions are available.

'W' allows cursor movement to write to screen.
'E' " " " erase "
'Q' " qursor " without erase or write
'C' Clears screen
'S' Brings in saved screen from memory
'T' Loads in FONT Char
'@' Ends this mode storing screen to memory & returns to main menu.

Goto High Res Mode.

Key Board movement of cursor is as above with the addition of:-

'S' Now loads sub menu.
1. Load Screen from Disk
2. Save Screen to Disk
3. Print Screen
4. Enter Standard Print Mode (Allows KeyBoard Chars. be printed on Hi-Res Screen, NB Space is true delete)
5. Enter Reverse Print Mode (As 4 but reverse chars.)
6. Change Mode (Changes screen mode so cursor is larger)
7. Move Block about. (Set Beginning marker with 'B' , set end marker with 'E', acts like box command, ie use diagonals of Block required. Arrow keys move the block around as required.)
8. Insert Block. (If you return to main mode CTRL 'R': Move cursor to new position, Press 'S' to sub menu '8' Then allows a Block set by '7' to be placed at the new cursor position, and moved around main mode is returned to.
9. Return. (Return to main mode)

I am sure there is more that could be added to this program, also there are errors and modifications necessary, but I have used it together with Gbasic's draw program to print out simple electrical drawings, flow drawings & large labels using Font Characters with little trouble.

This program is available from the MOD 4 library, complete with Laurie Shields part. For any further information I should be glad to help.

Brian Edwards, 9 Wayground Rd, Corfe Mullen, Wimborne, DORSET. BH21 3ED

THREE CHEERS FOR NEWDOS

Every time I lug my Model 4 to a meeting, and boot it up as a Model 3, I get no end of advice about how I ought to be using the machine properly, with either 'ELDOSE' or 'DONKEYDOS'. This I was

somewhat reluctant to do, since I daily use self-written Basic programs developed, and still used, on the Model 1; my main application is basically a mailing list which incorporates various sales figures and other data and which a whole suite of programs revolve around. The unique Newdos80 Igel is a fantastically fast utility for datafiles which makes Random Access so very easy to use.

Enough. I must learn to move with the times (they said). I must not waste the capabilities of the Model 4 (they said). I must learn to appreciate the power of TRSDOS 6x (they said). And so, after wiping the tears of laughter from my face, I sat down for a couple of months to convert my software, and now, now that all the beta testing is over, I can reveal that I learned a great deal.....

I don't think that the most fanatical TRSDOS fanatic would claim that his Basic datafile programming was easy, particular if he wanted random access, and with record lengths other than 256 byte; I must admit that I very nearly gave up the project. However, there is a remedy - enter ZBASIC. Now I apologize for mentioning Newdos again, but ZBASIC offers the nearest thing yet to the Newdos Igel that I have seen, and I really did get excited at the prospect of using my software on my machine running as Tandy had intended.

I'm sorry, folks - I wasted my time. I forgot to say that my applications depend an awful lot on either keyboard input or printer output and I'm sure that that is the reason why my Model I software running under NEWDOS 80 v2.0 on a Mod 4 in Mod 3 mode runs faster (i.e. takes less time from start to finish) than it did under 'DONKEYDOS' with ZBASIC in Mod 4 mode. It may well be that all the little bits, bytes, and nibbles move faster in Mod 4 mode, but if they then have to wait for a keypress or a lineprinter then they have achieved nothing. And the awful boot up time taken by 'DONKEYDOS' .....

(Written by David Washford, using Newdos 80 in Model 3 mode)

FAINT HEART NEVER REPAIRED A FLOPPY DISK !

I was horrified when a CP/M disk refused to boot - yes, you're quite right, it hadn't been backed up. I never learn, there seems to be one of those Parmesian Laws that says backed up disks never crash

whilst uncopied ones always will. Anyway, I removed the disk from the drive, with unusual difficulty, and was surprised to note that the quite sturdy sleeve was inexplicably distorted. Attempts to read the disk in drive 1 were equally unsuccessful, and I must confess to speaking a few naughty words as I resigned myself to the loss of 420k (yes, of course it was an 80 tracker!) of work.

Much later, I picked up the offending article to see if I could determine what might have caused the damage. I couldn't, but I did observe that the actual disk itself looked OK..... I wonder if .....

I knew that I had a couple of disks somewhere that just would not format; they should have been thrown away but no doubt some guardian genie had stayed my hand in readiness for a time such as this! I hastily retrieved one of these disks and carefully opened up one edge of the jacket, tipping the plastic disk into the waste bin. With a heavy heartbeat, I opened the damaged jacket, and taking care to keep the top side uppermost, a finger and thumb gripped the the CP/M disk carefully and slipped it into its new cover. Would it work? I booted another CP/M disk and delicately fed the repair job into drive one. MDIR B: was followed by an anxious, agonizing, moment or two and then, up came the directory! I can assure you that absolutely no time at all was lost in calling up SWEEP and transferring all those precious files across!

Despite having been forced to actually hold the edge of the disk, all the data was saved. I hope that my success might encourage others to have a go - but of course you won't need to, you all made backups, didn't you ? !!

(Written by David Washford, and supplied on an LDOS disk!)

LIBRARIANS

We now have five librarians organised, in principle at least:-

Leighton Davies — for the Model I tape and disk. Much of the Model 1 stuff will run on Model III, hence this being being erroneously called the Model I/III Library.

Mike Gordon-Saker	for the Model 4. Three out of the four programs are for hi-res. Please send him some more contributions.
Ariela Taylor	for the MS-DOS machines.
Dave Holman	for anything in the Amstrad 3.5" format.
Committee	for the Tandy applications within the CP/M User Group Library.

Please note a MAJOR policy change concerning the 'free' Public Domain Software libraries. The software is free, the copying is chargeable at the rate of £1.00 per disk or tape. (No limitation on the number of files). You send a tape or a formatted disk to the appropriate librarian, together with a return label and the correct return postage, PLUS ONE POUND per disk or tape to be copied. I am sure that this change in policy will be a surprise, and I would just point out that it is less than that charged by any other group I know of; it will be used by the librarians to fund their stock of storage media and their maintenance costs, both of which were previously met from NATGUG funds (which ment that non-library users paid library costs).

Incidentally, they do say that imitation is the best form of flattery; I understand that Quanta is currently copying our model 1 library and re-writing code where necessary!

David Washford, Secretary.

MODEL 1 NOTES

In later issues I will endeavour to dig out and reprint earlier NATGUG articles which seem to me to be of current relevance. In the meantime, here are some more of my own personal experiences based on a Model 1, 48k with 3 off 40 track double-density drives and an Epson MX-80 printer.

I remember that there was something special about double-density LDOS - we had things called LBOOT and SOLE, but I never really used or understood them. Could some other member please submit an article describing them? The important thing to understand about double density on the Model 1 is that the machine cannot boot up in that mode and therefore track zero is always in a single density format. Thus a 40 track disk became a 39 track disk if you used it as a system disk; data disks were OK at 40 track, and became popular since one could easily swap them between a Model 1 and a Model 3. However, a NEWDOS disk configured to read either a system or a data disk in drive 1 was very obstinate in refusing to read a disk formatted in the alternative style, and so a very wonderful utility program welcomed by Newdos users was DDSD.

By invoking DDSD upon boot-up, one could switch drive 1 from system to data and back again with total freedom from worry as to which disk was what format.

The Model 1 had one major drawback - edge connectors. If you have a Model 1 disk system that has just done something that is totally inexplicable, or hasn't done something that was very straightforward, then almost without doubt an edge connector problem is the reason. You can wear out rubber erasers almost daily in an effort to clean them - to no avail. You simply MUST get a set of GOLDPLUGS. These are an extension to the edge connectors, but which have goldplated electrical connections; they are slipped over the existing connector and soldered into place. Cables are plugged on in the normal manner and all your troubles have vanished - just like that! Richard Creak of Chelmsford (for address, please see back page. Ed. **) used to supply them, at around £3.50 each. I don't know if he still has stocks, but if your machine doesn't have them, then you certainly need to be contacting him! ..... David Washford, Secretary.

SOLE - See Above

SOLE is a MISOSYS utility, this enables a boot in double density for those that have installed a doubler board in a Model I or Video Genie. Normally, even with a doubler board installed a double density LDOS disk can't be booted, a boot up has to be done with a single

density LDOS disk, a doubler driver installed, and only then can a double density disk be accessed, whether it be a system disk in drive 0, or a data disk in any other drive.

Without going into any system detail, first you have to create a double density LDOS system disk, then use a utility called SOLE1 from the program disk, which formats track 0 as single density, a utility SOLE2 is then used to complete the process. A configuration file will now be on your disk, so that this new LDOS system disk will automatically boot up into double density, without the need to change system disks. Once used, mirror image backups can be made, but I seem to remember that SOLE2 has to be applied to each new system disk once, but only takes a second, now all is transparent.

Gordon Collins, Editor.

Tools, Toys or Gimmicks

The Model 100 and the Psion Organizer came out several years ago and neither set the world alight like the Sinclair or Amstrad machines. On the other hand both sold well enough to justify a new version. The Model 100 probably sold to Journalists and in the US it is suitable for electronic mail and the Psion picked up some commercial applications.

Both promised portable computing with built in data and text but as the model 100 users found, you can use the diary but its probably more convenient to use a paper version, text files fight for space with the limited data files. Most model 100 users found it easier to forget about the database and to dump the text to a "proper" computer.

The Psion had various limitations and most people were unaware of it's potential. While the Filofax suddenly became trendy the electronic version sold mainly to corporate users. The Psion II jumped on the band wagon and started a vigorous sales campaign that appears to be bearing fruit.

What's that got to do with the TRS-80 you may ask. The point is that the Psion is in many ways what a lot of people actually wanted in the first place. I bought the Model I on the expectation that it would do many things that more experience has shown highly unlikely. Word Processing was only practical if people were prepared to come and read the screen. Not only did I need a printer that cost as much as the computer but I needed an expansion interface to use it. It was only later, that Tandy thought to offer a printer interface that did not contain a disk controller for disks that were even more unaffordable.

My dreams of fast access to data melted away, with a series of database programs that took so long to get up and running, that the need had long passed before it could find the vital data. One could visualize the desperation, as somebody tried to find the telephone number of the fire station, and perished long before they got past the data not found.

The Psion on the otherhand, can find almost anything in seconds. It can hold more data than most Tandy disks and there is no need to remember key fields. If you cannot remember the doctors name, then doctor will find him and doc will also get there, but it might take a little longer. Ford will find the Ford Motor Company, but it will also find ILFORD. It might even find Anna Ford but you should be so lucky.

How does the Psion hold so much data, when other computers consume batteries in trying to hold 32K, with special low drain memory? The Psion uses data packs which are in fact EPROMS. These are a cross betweem ROMS and RAMS and once programed, hold their memory without using power. On the other hand, like paper, they cannot be changed without erasing the entire memory. This makes it suitable for data base applications, where the names and addresses remain fairly constant, and less suitable for text which keeps changing.

The data file can be changed, but this involves deleting records and re-writing a complete new record at the end of the file. If a lot of records are changed, the file can be full up with dead records and there is no more room. At this point, you can copy the file to a new pack and only the live records are copied. This is like the backup reconstruct on disks, but data packs are much more expensive.

Data packs come in different lengths and cost about £1.20 per K. However for many applications you only need two. This is where the TRS-80 comes in, because it is possible to manage with only one pack if an alternative storage is available. The whole of the datafile can be sent down the RS232 and stored on the TRS-80 disk. This allows the datafile to be erased and the file reloaded, without the second pack. It is possible to modify the data during the process and some companies use the Psion to distribute data from their main frames. A special price list can be downloaded in a short time and the data pack can be sent by post. Suitable boxes are available at most newsagents, but the matches should be removed first.

The Psion has a calculator that can be programmed. This allows prompts to be incorporated, and even more important for me, it allows repeat calculations for which I can never quite remember the formulae. It also allows the applications pack to extend its power and it is probably on the introduction of these packs that the Psion will depend. At the moment there is a small spelling checker, Financial and Maths Packs. Both are very advanced and I have heard that there is one for Garden Centers. You want a plant with Blue flowers, one which flowers in the spring, or details of any named plant and if its listed, you will find it rapidly.

How does it compare to the Model 102? Its a matter of horses for courses. The Psion is a portable data handler, despite the advertised word processor, it is not very practical for text. If you are creating a database over a period of time, then the keyboard is quite usable, but for many applications, it is easier to generate the file on a proper keyboard and to down load it. Although the Psion has no disk drive like the model 100, its data packs are more practical, especially now the 128K version is available.

The comparative costs are not quite as obvious as might appear at first glance. The Psion cost just over £100 while the model 100 is over £300. Data packs are almost a necessity, a practical working Psion is going to cost almost the same as a model 100, but the model 100 also needs a disk drive and that adds another £160. There is no top limit to the amount of data that either systems can hold, but

obviously the model 100 scores on the lower cost of disks. However, most business users find the Psion with one or two packs, large enough for any application.

While the model 100 can use cheap disks, it can consume a lot of batteries at nearly £2.00 a set. Add the disk drive batteries, then you see the attraction to Tandy. The Psion uses a single 9V battery that is no cheaper, but can last for months. I say can, because the battery life is very dependant on the type of use. A long spell on the RS232 will soon knock out a new battery, and makes the optional mains adapter a most useful extra. The mains adapters is also useful when changing batteries, although it is not strictly necessary. Once the battery has been removed, the memory will be retained for 30 secs or so, time enough to fit a new battery.

PRINTERS

Some years ago there were two reasonable printers with lowercase. The Epson and the Centronix, but then Epson dropped the MX and introduced the FX, also the RX as a cheaper model. The 80 stood for 80 chars at 10 CPI, there was a larger version which printed 100 chars. This was fairly clear, as one was obviously a cheaper version of the other and lacked some of the features. The 80 cols. or chars. were just right for A4 upright, the 100 cols were for A4 sideways.

Now there are FX, LX, LQ and EX, some are listed as 85, others 86. Just recently we have found some with 800 as a suffix. The problem is to know which is what, even the price no longer gives a guide. I have no official knowledge, the dealers I asked seemed to know even less. I gather that the FX-85 is a slightly improved version of the FX-80, the 800 signifies a bigger change.

The LQ-800/1000 have 24 pins in the head to give a higher resolution and to allow a wider range of typefaces. The results can match that of a daisy wheel, but they cost more than a daisy wheel. They work with most word processors, but may not work at all with software that uses Graphics mode, as with Sideways and Dotwriter. Some

software now incorporates an LQ driver, but this just means that the program works, not that it uses the full capability of the printer. The results that I saw from Dotwriter were less attractive than from a cheaper printer.

The LX appears to be a replacement for the RX, the FX a replacement for the MX, but both are significantly better. The LX offers a sheet feeder as standard, but charges for a tractor feed. This makes it especially suitable to the cheap word processor market. As I decided against both I can tell no more.

The latest printer to appear from Epson is the EX-800, which is an Express or high speed printer. It is boasts a speed of 300 cps, which as everyone knows does not mean it prints 300 chars in a second. My guess is that it is probably three times as fast as a standard MX, and twice as fast as a FX. This is dependant on the type of work being printed, it seems even faster on short rows.

It can print a reasonable NLQ, but this requires two passes and slows the printer down. NLQ is not the same as double strike on the MX, as each pass can be different according to the requirements of each character. Double Strike seemed to thicken up the face and lost sharpness, NLQ is almost up to Daisy Wheel, but not quite.

As with many of the new printers, it is possible to print with two faces, Sans Serif is rather like the IBM typewriter, Roman is similar to the newspaper type. Both can be printed in Pica (10 cpi), or Elite (12 cpi), and can be italicized. There is also a rather neat Proportional, which is not really a font but an alternative to Monospace. Proportional is nice for text and especially for the Sans Serif face, but quite useless for tables, because the alignment gets lost.

The type can be enlarged and condensed, which works with both Elite and Pica, so Elite Condensed is 60% of the normal 12 cpi (20 cpi), this allows 160 characters on a row. This can be very useful and previously only available on my daisy wheel.

The EX can have a colour board fitted as an extra, but the 8K buffer is standard, as is both serial and parallel interfaces. However for me the biggest advantage is the new backmounted tractor. Those that use tractor paper will appreciate that the normal front tractor will only print on the second sheet, after printing it is necessary to waste another piece, just to get one sheet out. The tractor also got in the way of single sheets or rolls. Some of the tractors were mounted to give better access to single sheets, but this was often at the expensive of their performance. The backmounted tractor gets round this and even autoloads into the bargain.

The leading edge is placed on the sprockets, and the bail pulled back. This turns on the drive, which pushes the paper under the platen and up under the printhead. It is pushed about half an inch too far, but this allows the bail to push it back onto the plattern, in so doing, triggers the motor to rewind to the top of the page. I could manage without the autoload, but I like the way that the printed sheet ends up under the bail, which serves as a cutter and a measure. If a single sheet is torn off, the printer is ready to print the next without waste.

Single sheets are inserted down a separate path, which is also used for roll paper. The plate which separates the incoming tractor paper from the output side, is easily removable and can be stood upright to help the insertion of single sheets. It has a movable guide to help maintain the left margin.

Having sung the praises of Proportional type, it is a fact that many Word Processors make a pigs ear of printing justified left and right margins, many cannot do it at all if the type is not Monospaced. The EX-800 does not need a word processor, and can print Justified Proportional type with paged output and inbeded print codes. It also has a useful feature, which allows many of the controls to be set by pressing the front panel. Unlike the MX range, it is not necessary to use Basic to send Control codes. NLQ, Condensed, etc., can be selected by pressing the appropriate button. The buttons are clearly marked and light up when selected. Thus it is possible to see the ones that have been selected. As these buttons countermand any software setting, they can be useful in difficult situations.

The EX-800 has got features which are not required, but means that it can be attached to almost any device. Its 8K buffer can be used for a special character set, but that loses the normal text buffer. A range of alternative buffers are also available. The old MX had a TRS-80 mode which printed model I graphics. This is no longer available and in place there is an IBM mode. Such is the fate of EX market leaders, I guess there will be few tears. This printer works well with both the Model 4 and especially the Model 100.

On the negative side the EX-800 is not cheap, but it is not as dear as the MX when it first came out, with inflation and the rise in the YEN, that cannot be too bad. It is heavy and takes up more desk space, but as it tugs the paper with every line feed this may not be a bad thing. The ribbons are also expensive, this may be due to the fact that only genuine Epson ribbons are available. As this printer is going to be very popular in the business world, the alterantive suppliers will soon catch up, bulk buying bringing the price down.

The above two articles were contributed by:- Derek Trayler,
88 Grosvenor Drive, Hornchurch, Essex. RM11 1PW. 040-24-47661
Thank you Derek, also for another two articles held over.

ADVERTS

See an article by Eric Brandes, page 14, he would like an offer for his Model I/III NEWSCRIPT, which comes complete with manuals.

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